

Northeast Ocean Plan

Northeast Regional Planning Body Meeting

May 24, 2017



RPB MEETING OBJECTIVES



Hear from RPB members about how their organization is using the Northeast Ocean Plan and the Northeast Ocean Data Portal.

Review progress implementing the Northeast Ocean Plan.

Obtain public input and decide on next steps for implementing the Plan through the end of 2017.

TIMELINE



October – December (2016)

- Northeast Ocean Plan finalized and certified by the National Ocean Council
- RPB begins to organize itself for implementation

January – March

- Plan is adopted and signed by RPB leadership
- RPB begins implementing the actions in the Plan and developing associated materials for upcoming public conversations

April – May

- April 13 public webinar to provide an overview of implementation activities
- May 2 Stakeholder Forum in Portsmouth, NH
- May 24 RPB Meeting in Gloucester, MA

June – December (2017)

- Continue implementation as determined today

IMPLEMENTATION WORK PLAN OVERVIEW

NORTHEAST OCEAN DATA PORTAL

- Communicating the use and role of the Portal
 - Portal use and case studies
 - Relationship of the Portal to the Plan and other data and information systems
- Updating ocean activity data
 - RPB actions to update data
 - Outreach to relevant stakeholders
- Updating marine life, habitat, and important ecological areas (IEA) data products
 - RPB actions to update marine life and habitat data
 - Advance IEA framework by developing draft data products for each component of ecological importance
 - Input on draft methods and products

Ocean Resources & Activities



MARINE LIFE & HABITAT



CULTURAL RESOURCES



MARINE TRANSPORTATION



NATIONAL SECURITY



COMMERCIAL & RECREATIONAL FISHING



RECREATION



ENERGY & INFRASTRUCTURE



AQUACULTURE



OFFSHORE SAND RESOURCES



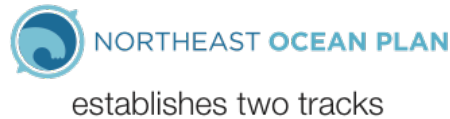
RESTORATION

IMPLEMENTATION WORK PLAN OVERVIEW

MONITORING AND EVALUATION



What is **Monitoring & Evaluation?**



Plan Performance Monitoring

Measure progress toward implementing the Plan's actions and achieving the Plan's goals and objectives 

- Conditions before Plan
- Track implementation
- Obtain public input

Ecosystem Health Monitoring & Evaluation

Measure changes in the ecosystem, including human activities, to identify issues that may require management attention

- Baseline
- Indicators
- Obtain public input



Note: The Plan identifies both the *Ocean Health Index (OHI)* and the *Integrated Sentinel Monitoring Network (ISMN)* as two opportunities for evaluating ecosystem health.



Inform amendments and updates to the Plan

IMPLEMENTATION WORK PLAN OVERVIEW

OTHER TOPICS, WORK GROUPS, & SUBCOMMITTEES



Federal-State Coordination

- NOAA is actively working with states and other federal agencies to operationalize the Portal into CZMA. At NROC's winter meeting, NOAA's Office for Coastal Management led a session demonstrating how data products in the Portal could strengthen the effects test under the federal consistency provision of the CZMA.
- *Next steps:* Pursue ability for early notification to states about potential projects - including possibly using the data portal for alerts. Also, there will likely be a check-in with the NE states in conjunction with the next NROC meeting.

Federal-Tribal Coordination

- Provided periodic updates on ocean plan implementation through EPA's Regional Tribal Operations Committee and Federal-Tribal Communications Collaborative calls
- Secured Udall Foundation funding support for tribal travel to RPB meetings and other related activities

IMPLEMENTATION WORK PLAN OVERVIEW

OTHER TOPICS, WORK GROUPS, & SUBCOMMITTEES



Energy and Infrastructure

- Call for Nominations by the National Academies for an Atlantic Offshore Renewable Energy Development and Fisheries Steering Committee; nominations were due March 31. The steering committee will organize a workshop in winter 2017 to survey the range of issues regarding renewable energy activities on the Atlantic OCS and potential impacts on fisheries.
- A new BOEM/NOAA report released in March, [*Socio-Economic Impact of OCS Wind Energy Development on Fisheries in the U.S. Atlantic*](#), will inform BOEM's decision-making related to future offshore wind energy development by identifying potentially affected fisheries that may require additional information and analysis.

IMPLEMENTATION WORK PLAN OVERVIEW

OTHER TOPICS, WORK GROUPS, & SUBCOMMITTEES



Energy and Infrastructure

- BOEM held a meeting of the Rhode Island and Massachusetts Task Force on May 16 in Falmouth, MA. BOEM had informed stakeholders about two unsolicited lease requests (PNE Wind and Statoil Wind) for previously unleased areas in the WEA offshore Massachusetts. Because both parties nominated the same area, BOEM plans to proceed with the competitive leasing process. Developers are involved with on-going planning and data gathering activities on the three leases off shore Rhode Island and Massachusetts.
- BOEM held government-to-government consultation meetings in May with federally-recognized tribes within the project vicinity of the New York, Rhode Island, and Massachusetts WEAs, including the Narragansett, the Wampanoag Nation of Gay Head (Aquinnah), and the Mashpee Wampanoag about issues related to offshore wind energy leasing; meetings with other tribes are pending.

IMPLEMENTATION WORK PLAN OVERVIEW

OTHER TOPICS, WORK GROUPS, & SUBCOMMITTEES



NROC Sand Management Subcommittee

- BOEM executed a second round of two-year cooperative agreements at the end of FY 2016 with ME, NH, MA, and RI to assist BOEM in identifying potential sand resources in federal waters.
- In February, BOEM and USACE **signed a MOU** that will enhance coordination on managing sand, gravel and shell resources from the OCS.
- A sand subcommittee call was held on March 27 that included USACE, BOEM, EPA, FWS, state representatives, University of Rhode Island, and the Coastal States Organization. The group discussed work on fulfilling our commitment in the Ocean Plan to work with the RPB to develop an offshore sand resources theme on the portal.
- Jeff Reidenauer (BOEM) is taking over the federal co-lead duties as Bob LaBelle steps down; Brad Washburn (MA CZM) continues as state co-lead.

IMPLEMENTATION WORK PLAN OVERVIEW

OTHER TOPICS, WORK GROUPS, & SUBCOMMITTEES



Aquaculture

- The 37th Milford Aquaculture Seminar held jointly with the Northeast Aquaculture Conference & Exhibition in January 2017 included a session on the Northeast Ocean Plan with emphasis on crossover with aquaculture. Industry questions and discussion at the meeting regarding co-locating blue mussel farms with offshore wind platforms led to a follow up meeting in April among the aquaculture industry, wind power proponents, and NOAA to discuss the outlook for co-locations in the northeast.
- NOAA is actively directing customers interested in Exclusive Economic Zone (EEZ) aquaculture siting to the Northeast Ocean Data Portal as a first stop.
- *Next Steps:* The Work Group will review membership and organize its next meeting. Per actions in the Plan, the work group will coordinate on a potential analysis to identify areas where conflicts and synergies between aquaculture and existing activities may occur.

IMPLEMENTATION WORK PLAN OVERVIEW

OTHER TOPICS, WORK GROUPS, & SUBCOMMITTEES



Restoration Subcommittee

- The Subcommittee is updating membership, including looking for a non-federal co-lead.
- The current co-leads recommend at least leveraging the NROC Coastal Resiliency Work Group for membership and for work that is already ongoing to inform potential restoration priorities.
- In addition to updating the map of potential restoration sites, the subcommittee will also update the spreadsheet of restoration funding opportunities.

Ecosystem Based Management (EBM) Work Group

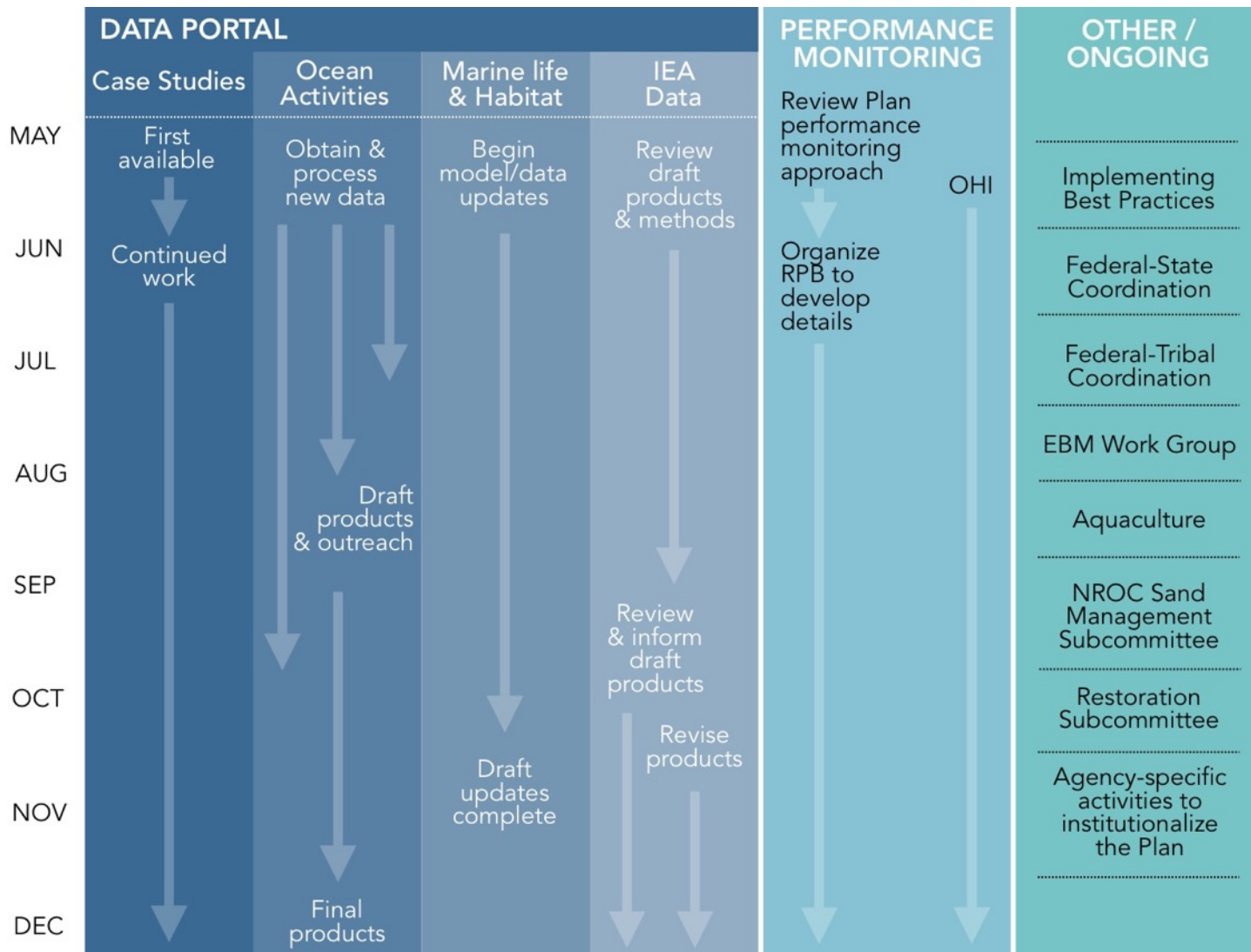
- Currently serving as one roster of subject matter experts informing the development of draft Important Ecological Area data products and potential methods.
- Could be one group to inform the development of ecosystem monitoring approaches, such as the OHI and the ISMN.

IMPLEMENTATION WORK PLAN OVERVIEW TIMELINE



RPB MEETING

RPB MEETING?



NORTHEAST OCEAN DATA PORTAL

PORTAL USE & CASE STUDIES



**OVER 8,000
UNIQUE VISITORS
IN APRIL 2017**

**HIGHEST
MONTH
EVER**

Plan
certified

Plan
submitted

OCT 2016

**AVERAGE MONTHLY
VISITORS**

DEC 2016 -
PRESENT

2013-2016

**INCREASED
ALMOST
3-FOLD**

**SINCE
PLAN
CERTIFICATION
IN DEC 2016**

www.northeastoceandata.org

- Noticeable spike in Portal activity – hits and feedback
- Daily/weekly spikes potentially associated with agency announcements and events

NORTHEAST OCEAN DATA PORTAL

PORTAL USE & CASE STUDIES

- Initial set of case studies:
 - First shellfish farm in Atlantic federal waters
 - NERACOOS wave buoy in Cape Cod Bay
 - NEFMC deep-sea coral protection area alternatives
- RPB and many others working on additional case studies, including the use of the Portal to support:
 - State efforts
 - Federal agency regulatory and management processes
 - Education
 - Research
 - Other stakeholder initiatives and uses

Back to Case Studies Overview

Case Study:

Siting a New Wave-monitoring Buoy to Increase Maritime Safety and Improve Weather Forecasts

Northeast Ocean Data Portal User:

Northeastern Regional Association of Coastal Ocean Observing Systems (NERACOOS)

In Consultation with:

- Massachusetts Department of Environmental Protection
- NOAA National Ocean Service
- NOAA National Weather Service
- Northeast Marine Pilots Association
- U.S. Army Corps of Engineers
- U.S. Coast Guard
- U.S. Geological Survey

Objective:

To identify the best location for a new wave-sensor buoy in Cape Cod Bay to provide data for ship pilots, weather forecasters, whale watch operators, recreational boaters, habitat restoration practitioners, and others.

Ships, tugs, and barges carry more than a billion gallons of petroleum through Cape Cod Bay every year. To ensure safe and efficient passage across those heavily trafficked waters, captains and pilots require accurate, up-to-date information about sea conditions.

"Ninety-five percent of loaded tugs and barges pass eastbound through the Cape Cod Canal, and it is critical that we know what the sea-state is in Cape Cod Bay before we enter the canal," said Captain Clint Walker of the Northeast Marine Pilots Association.

Until 2016, however, no real-time data on wave conditions were available for the Bay. That's when the Massachusetts Department of Environmental Protection (MassDEP), NOAA's National Ocean Service, and several other partners provided financial and logistical support to deploy a new high-tech wave-monitoring buoy approximately six nautical miles north of Sandy Neck in Sandwich, Massachusetts. The location was selected based in part on data and maps from the Northeast Ocean Data Portal.

Choosing where to place the buoy presented a number of challenges, according to Tom Shyka of the Northeastern Regional Association of Coastal Ocean Observing Systems (NERACOOS), which collaborated with the other partners to plan the deployment. NERACOOS is responsible long-term operation of the buoy and delivers the data on its website. The wave sensors needed to be near the main routes through the Bay to provide useful data for the shipping industry. Yet the high-tech buoy—which will cost up to \$440,000 to acquire and operate for 5 years, is relatively small, and can easily disappear from sight in a wave trough—could not be placed in a heavily trafficked area because of the risk of collision. Additional factors needed to be taken into account to maximize the value of the data to other users, such as the National Weather Service, U.S. Coast Guard, U.S. Geological Survey, Army Corps of Engineers, commercial fishermen, recreational boaters, and whale-watching tour operators.

To help the partners make a well-informed decision, Shyka turned to the Northeast Ocean Data Portal for recent data on commercial ship traffic and recreational boating activity. On an interactive map of these data, he used the "draw" tool to indicate potential locations for the buoy, generated a static image of the maps, and emailed it to the project partners. In a subsequent web-conferencing session using the Portal, the group viewed the online map together and

"The Northeast Ocean Data Portal gave us critical pieces of information that helped us make our decision for where to locate the buoy."

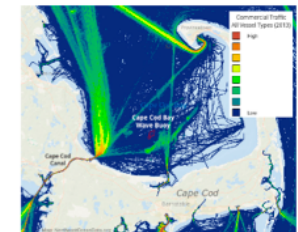
— Tom Shyka, NERACOOS



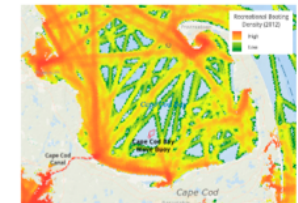
Deploying the new wave buoy in Cape Cod Bay.



A tug and barge transit Cape Cod Bay near Barnstable.



NERACOOS and partners used maps of commercial vessel traffic (above) and recreational boating density (below) from NortheastOceanData.org to identify a low-traffic area for siting the new wave-monitoring buoy. The new buoy's location, after it was deployed in 2016, is indicated by the red buoy symbol.



NORTHEAST OCEAN DATA PORTAL

DATA UPDATES AND OUTREACH FOR OCEAN ACTIVITIES

- RPB entities responsible for relevant ocean activities and associated Portal data themes
- Coordination with Marine Cadastre and the Mid-Atlantic
- Data requests, processing and draft product development underway
- Draft products for many ocean activities available this fall for review
- Let us know how we can work with you to conduct outreach to inform the development and review draft products

Ocean Resources & Activities



NORTHEAST OCEAN DATA PORTAL

DATA UPDATES AND OUTREACH FOR OCEAN ACTIVITIES



Commercial Fishing

Datasets: Vessel Monitoring System (VMS); Vessel Trip Reports (VTR); Fishery Management Areas

Relevant RPB organizations:
NOAA NMFS, NEFMC

Schedule & outreach:

- Data requests in progress
- Draft products by end of summer
- Stakeholder review in fall 2017
- Update Portal by end of the 2017

Aquaculture

Datasets: Permitted aquaculture areas; shellfish management areas

Relevant RPB organizations:
States, USACE, NOAA

Schedule & outreach:

- Data request to states in progress
- Draft products by summer
- Stakeholder/agency review in summer/fall 2017
- Update Portal by end of the 2017

NORTHEAST OCEAN DATA PORTAL

DATA UPDATES AND OUTREACH FOR OCEAN ACTIVITIES



Marine Transportation

Datasets: Vessel traffic (AIS); Navigation & Safety (Aids to Navigation, Pilot boarding, Anchorages, Safety and security zones)

Relevant RPB organizations:
USCG, DOT, NOAA

Schedule & outreach:

- Data requests in progress
- Draft products by end of summer
- Stakeholder review in fall 2017
- Update Portal by end of the 2017

National Security

Datasets: Military installations; testing and training ranges; danger and restricted areas

Relevant RPB organizations:
DOD, USCG

Schedule & outreach:

DOD reviewing data and will provide updates to Marine Cadastre for distribution

NORTHEAST OCEAN DATA PORTAL

DATA UPDATES AND OUTREACH FOR OCEAN ACTIVITIES



Cultural Resources

Datasets: National Register Sites; Wrecks; Submerged archeological resources

Relevant RPB organizations: DOI (NPS, BOEM), NOAA, States, Tribes

Schedule & outreach:

- National Register historic sites: data request to go out to the NPS and states this spring
- All other activities are TBD

Recreation

Datasets: Boating; whale watching; diving; coastal recreation areas; coastal individual use surveys

Relevant RPB organizations: States, NOAA, USCG

Schedule & outreach:

- Coastal recreation areas data layer to be updated by fall 2017
- Several potential options to review and update the footprint of a range of different recreational activities

NORTHEAST OCEAN DATA PORTAL

DATA UPDATES AND OUTREACH FOR OCEAN ACTIVITIES



Energy and Infrastructure

Datasets:

Planning area status (operational, permitted, lease areas, wind energy areas, demonstration sites)

Existing infrastructure (cables, pipelines, energy facilities and transmission lines)

Relevant RPB organizations:

BOEM, DOE, States

Schedule & outreach:

Updated theme available this spring

Offshore Sand Resources

Datasets: Potential sand resources from recent investigations

Relevant RPB organizations:

BOEM, States, USACE, NROC Sand Subcommittee

Schedule & outreach:

Layers to be added when investigations and database completed

NORTHEAST OCEAN DATA PORTAL

DATA UPDATES AND OUTREACH FOR OCEAN ACTIVITIES



Restoration

Datasets: Potential restoration projects

Relevant RPB organizations:
States, USACE, Restoration Subcommittee

Schedule & outreach:
Subcommittee to review the map of potential projects

NORTHEAST OCEAN DATA PORTAL

DATA UPDATES AND OUTREACH FOR OCEAN ACTIVITIES



Summary of Stakeholder Feedback

- *Fishing:* Review efforts by the NE Fisheries Science Center to characterize fishing activity using VMS and VTR.
- *Fishing:* The Portal lacks maps of lobster fishing areas. This is a significant gap that needs to be filled.
- *Fishing:* Consider approaches to use VMS, AIS or other similar technologies to obtain information on fisheries with data gaps.

NORTHEAST OCEAN DATA PORTAL

DATA UPDATES AND OUTREACH FOR OCEAN ACTIVITIES



Summary of Stakeholder Feedback

- *Aquaculture*: Conduct outreach to states and municipalities to use the Portal to ensure data are updated and to inform aquaculture siting.
- *Recreation*: Consider additional ways of using the recreational data and affiliated groups to engage stakeholders during plan implementation.
- *Energy and Infrastructure*: Consider the appropriate time to include areas related to agency announcements on the Portal, such as new WEAs or areas where unsolicited bids have been submitted.

NORTHEAST OCEAN DATA PORTAL

DATA UPDATES AND OUTREACH FOR OCEAN ACTIVITIES



Potential Next Steps

Commercial Fishing and Marine Transportation:

- Process VMS, VTR, and AIS data and develop draft products **(June-Sep)**
- Engage relevant stakeholders through targeted meetings to review the data products **(Oct-Dec)**
- Coordinate outreach and data development with the Mid-Atlantic and the Marine Cadastre **(ongoing)**
- Identify opportunities to fill gaps in fishing activity data, including potential approaches to quantify activity with new data collection methods and efforts by the Island Institute and others to convene members of the lobster fishing industry **(ongoing)**

Aquaculture:

- Finalize regional aquaculture layers **(June-Aug)**
- Review with states, USACE, NOAA, and the Aquaculture WG **(June-Sep)**
- Identify ways to engage the industry and local municipalities to review and use the data **(Sep-Dec)**

NORTHEAST OCEAN DATA PORTAL

DATA UPDATES AND OUTREACH FOR OCEAN ACTIVITIES



Potential Next Steps

Recreation:

- Engage organizations representing different recreational activities to identify options for maintaining, using, and updating recreational data over the long term **(June-Dec)**

Energy & Infrastructure:

- Update the status of each offshore project or planning area **(June-July)**
- Continue discussions about the appropriate time to post maps related to agency announcements **(ongoing)**

Offshore Sand Resources and Restoration:

- Update the Portal per direction from the NROC Sand Management Subcommittee and the Restoration Subcommittee **(ongoing)**

NORTHEAST OCEAN DATA PORTAL

DATA UPDATES AND OUTREACH FOR OCEAN ACTIVITIES



Potential Next Steps

Cultural Resources:

- Update National Register historic site data **(Jun – Sep)**
- Determine status of information related to potential submerged archeological resources **(ongoing)**

National Security:

- Update theme as necessary as identified by DOD **(ongoing)**

NORTHEAST OCEAN DATA PORTAL

Updating Marine Life and Habitat Data

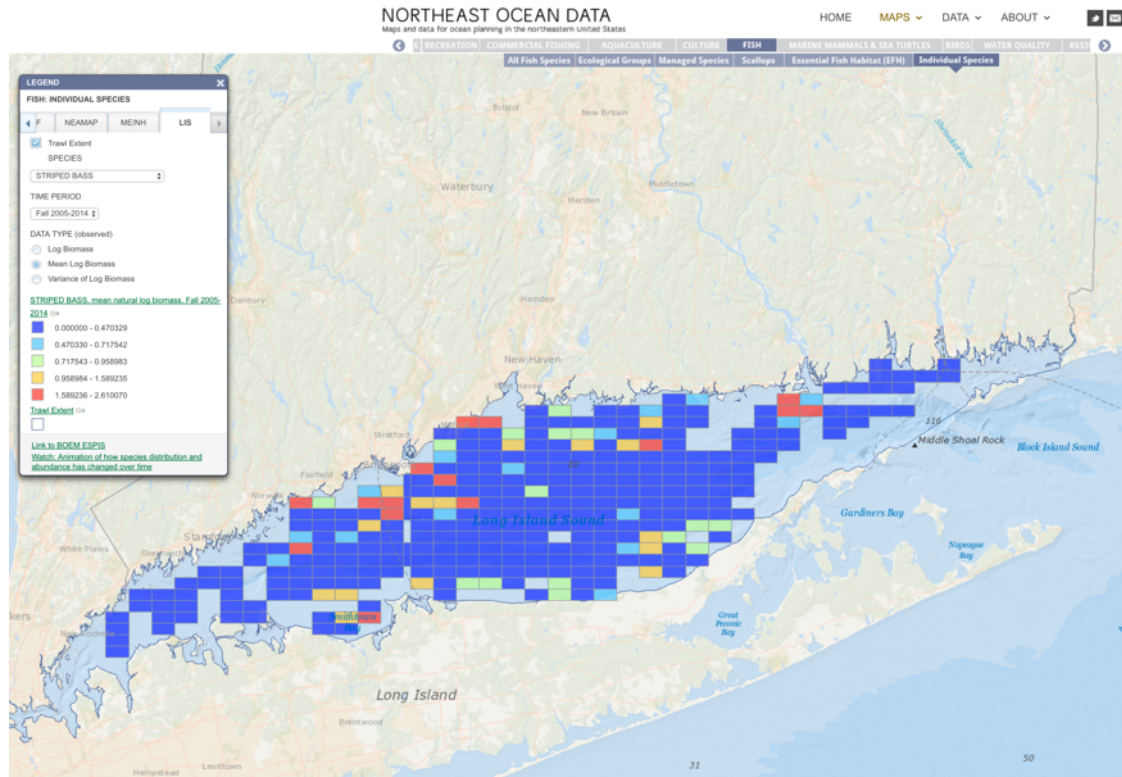


Marine Life and Habitat

Datasets	Relevant RPB organizations	Schedule & outreach
Fish trawl data for Long Island Sound	CT DEEP	Draft data March 2017; Release April 2017
Update marine mammals model	NOAA	Fall 2017
Sea turtles model	NOAA	Late fall 2017
Fish trawl data for coastal RI	RI DEM	TBD
Additional marine life ecological groups		TBD
Add VIMS data to scallop maps	NOAA	TBD
Incorporate additional avian data from USFWS Mid-winter Waterfowl Survey, SHARP, ESI, telemetry data for mammals, birds, fish, bats	USFWS, BOEM, NOAA	TBD

NORTHEAST OCEAN DATA PORTAL

Updating Marine Life and Habitat Data



Long Island Sound Fish Trawl

- 64 species
- 192 new layers
- Similar format as MDAT fish data
- No summary products (yet?)

NORTHEAST OCEAN DATA PORTAL

Updating Marine Life and Habitat Data



Marine Life and Habitat

Datasets	Relevant RPB organizations	Schedule & outreach
Update benthic habitat maps	NOAA, BOEM	TBD
Maps characterizing persistent phytoplankton bloom event	NOAA	Data obtained early 2017; maps will be added to IEA Data Evaluation this summer
Update submerged aquatic vegetation maps	States	Some updated data obtained early 2017; May need to re-convene eelgrass working group; maps to be updated by summer 2017

Development and review of draft Important Ecological Area (IEA) data products

Habitat areas and species, guilds, or communities critical to ecosystem function, resilience and recovery. These areas are further defined and identified by the following **five components**:

1. Areas of high productivity
2. Areas of high biodiversity
3. Areas of high species abundance including areas of spawning, breeding, feeding, and migratory routes
4. Areas of vulnerable marine resources
5. Areas of rare marine resources

NORTHEAST OCEAN DATA PORTAL

Development and review of draft Important Ecological Area (IEA) data products



THE FIVE COMPONENTS ARE:

- An extension of the Marine Life and Habitat data on the NE Ocean Data Portal
- Eventually a resource of 50-100 peer-reviewed and vetted datasets that represent ecologically important patterns and help identify data gaps
- More than habitat and species distribution/abundance, in that they also characterize ecosystem processes and functions
- Easily updated with new data and information, just like all of the data on the NE Ocean Data Portal

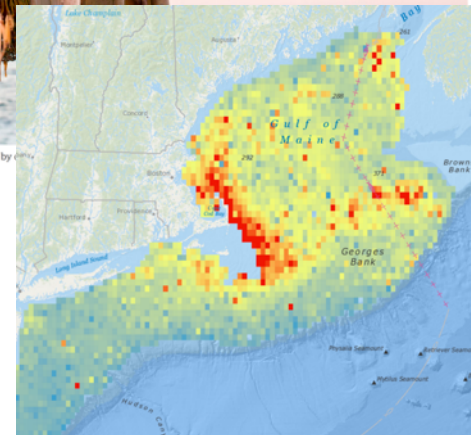
The New York Times

Fish Seek Cooler Waters, Leaving Some Fishermen's Nets Empty

By ERICA GOODE DEC. 30, 2016



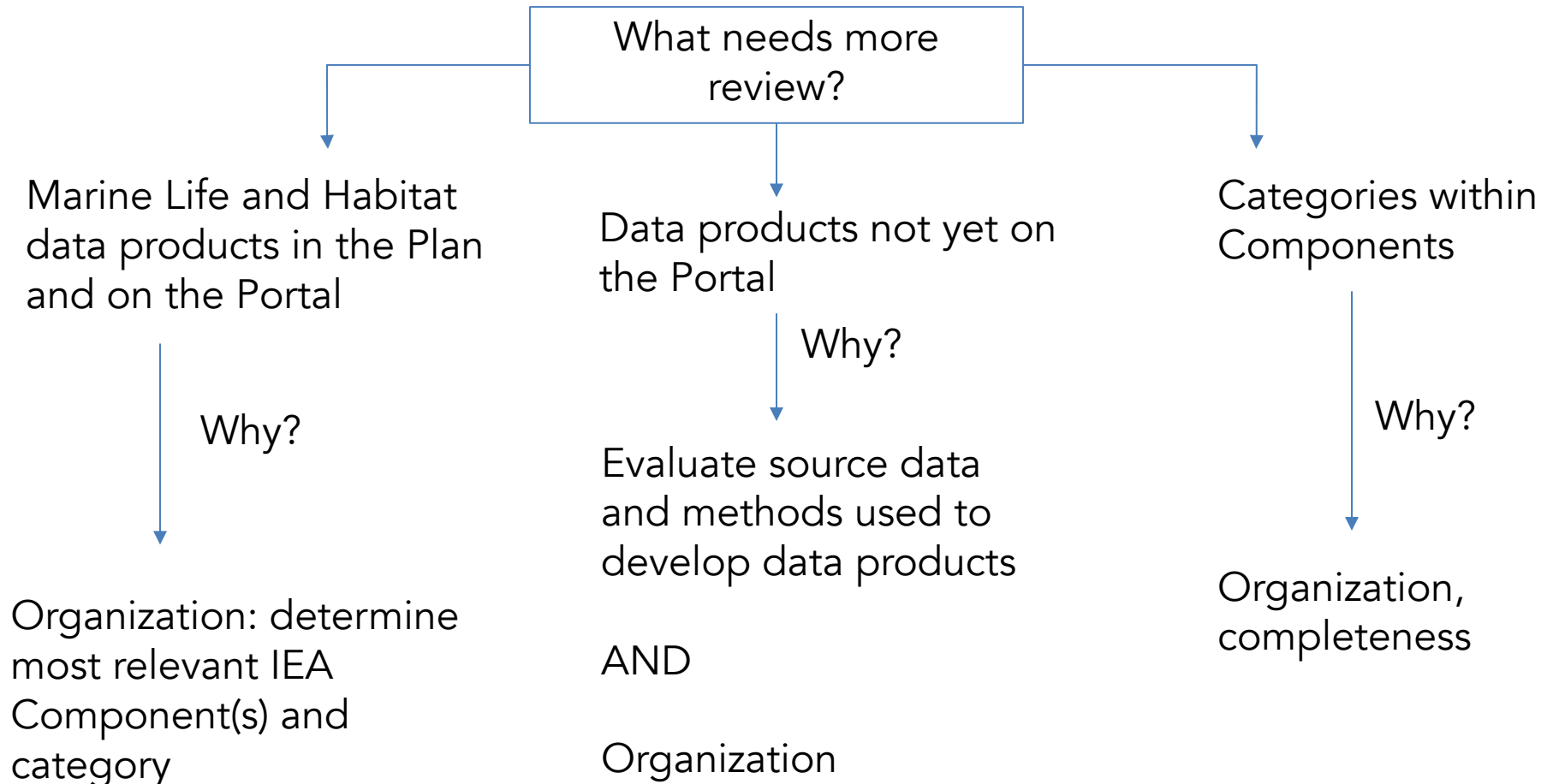
The fishing industry faces antiquated regulations that have been overtaken by warming seas force a variety of fish to seek cooler and deeper waters.
Christopher Capozzello for The New York Times



Total fish biomass
(NEFSC fall survey)

NORTHEAST OCEAN DATA PORTAL

Development and review of draft Important Ecological Area (IEA) data products



Component 1: Areas of high productivity – Example: Chlorophyll-a Spring (median)

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Surveys / IEA Component 1 Evaluation

1. Areas of High Productivity

The NOAA Northeast Fisheries Science Center will be the primary data provider for the data in this component. We continue to work with NEFSC staff to determine which available datasets best characterize productivity for the US Northeast Shelf LME. We expect to receive data representing: spring bloom frequency, magnitude and start day (1998-2015) from Friedland et al. 2015; primary productivity season means (1997-2015); and total zooplankton biovolume interpolations from bongo net surveys. CPR zooplankton data are currently available from NEFSC as time series data only (i.e., not spatial). We currently provide examples and approximations of the expected NEFSC layers using similar data sources and methods.

Below we first present data and questions for primary productivity (1a), then for secondary productivity (1b), and finally for proxies of high productivity (1c).

1a. Explore the following layers that represent primary productivity:

◆ currently also public on northeastoceandata.org

- ◆ Chlorophyll-a seasonal medians (2002 - 2015)
 - Chlorophyll-a Winter (median)
 - **Chlorophyll-a Spring (median)**
 - Chlorophyll-a Summer (median)
 - Chlorophyll-a Fall (median)

Bloom frequency (2002 - 2015)

- Spring bloom frequency
- Summer bloom frequency
- Fall bloom frequency
- Winter bloom frequency

Bloom magnitude (2002 - 2015)

- Spring bloom strength (median)
- Fall bloom strength (median)

Bloom start day (2002 - 2015)

- Spring bloom start day (median)
- Fall bloom start day (median)

Frequency of chlorophyll-a anomalies (2002 - 2015)
Anomalies that coincided with regional blooms were removed. As a result, these maps only show patterns not related to blooms.

- Spring anomalies frequency
- Summer anomalies frequency
- Fall anomalies frequency
- Winter anomalies frequency

Long-term annual mean chlorophyll-a fronts

- ◆ Elgrass beds
- ◆ Coastal wetlands

Is there one type of dataset or a subset of datasets that stand out as critical to representing areas of high primary productivity?

Click to select one or more options

KEY QUESTIONS

Which metric best represents primary productivity?

Are these appropriate analysis methods?

Esri, GEBCO, IHO-IOC GEBCO, DeLorme, NGS | Esri, GEBCO, DeLorme, NaturalVue | NOAA/NOS/Office of Coast Su...

Powered by Esri and SeaSketch

Component 2: Areas of high biodiversity – Example: All cetacean species richness

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Surveys / IEA Component 2 Evaluation

2. Areas of High Biodiversity

Biodiversity products were produced as part of the MDA mapping effort and include sampled/observed marine mammal, bird, and fish species. The intention for this component is to first display taxonomic metrics of biodiversity (2a, below) because they are complete, and they may adequately characterize patterns in biodiversity. Longer-term, we present the option to develop maps of functional diversity that include metrics of trophic richness (provided now as a proof of concept, 2b, below) but could also include metrics of mobility type, habitat preference, size, body form, and life span. There is a large body of functional trait research that could be used to choose metrics and assign taxa/species to trait categories (for example see <http://www.marinespecies.org/traits/>).

2a. Explore the following taxonomic metrics and indices of biodiversity:

◆ = currently also public on northeastoceandata.org

- ◆ All Cetacean Species Richness
- ◆ All Bird Species Richness
- ◆ All Fish Species Richness - NEFSC Fall Surveys
- All Fish Species Richness - NEAMAP Surveys
- All Fish Species - Gini-Simpson Index (NEFSC Fall Surveys)
- All Cetacean Species - Gini-Simpson Index

Note: Gini-Simpson Index cannot be calculated using MDA bird relative abundance outputs

Which of the layers below adds particular value or shows an important pattern in diversity?

Click to select one or more options

Are there gaps or other features in the taxonomic metrics and indices of biodiversity data that affect overall interpretation?

If so, please indicate where: draw one or more polygons.

Add a Feature toggle visibility

2b. Functional metrics of biodiversity

We first presented this draft layer at the July 2016 EBM Work Group meeting. This layer is a proof of concept that could be expanded to other taxa and/or functional traits in the future.

Explore Avian foraging guild overlap: 2 species each

The graphic below explains how the layer was constructed.

KEY QUESTIONS

What is different about what Richness and Simpson index tell us?

Is functional diversity a useful concept and did we calculate the example appropriately?

Updated map to match bookmark undo change view details

Esri, GEBCO, DeLorme, NaturalVue | Esri, GEBCO, IHO-IOC GEBCO, DeLorme, NGS | NOAA/NOS/Office of Coast Su... Powered by Esri and SeaSketch

Component 3: Areas of high abundance – Example: All avian species rel. abundance

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Surveys / IEA Component 3 Evaluation

3. Areas of High Abundance

Below we present three ways to represent areas of high abundance: total abundance per taxa (3a), core abundance/biomass area per taxa (3b), and ranked relative abundance per taxa (3c). Lastly, we present a layer representing benthic faunal abundance (3d).

Abundance products for marine mammals, birds, and fish are readily available from the MDAT mapping effort, and they were produced with two different methods (simple summing of total abundance, and core abundance/biomass area richness delineation).

Total Abundance
total # individuals of all species in each cell

3a. Explore the marine life total abundance layers:

- ◆ = currently also public on northeastoceandata.org
- ◆ All cetaceans total abundance
- ◆ All avian species total relative abundance
- ◆ All fish species total biomass - NEFSC fall surveys
- All fish species total biomass - NEAMAP surveys

Core Abundance Area

3b. Explore the marine life core abundance/biomass area richness layers:

- Cetacean core abundance area richness - Atlantic scale
- Cetacean core abundance area richness - Mid-Atlantic scale
- Cetacean core abundance area richness - Northeast scale
- Avian core abundance area richness - Atlantic scale
- Avian core abundance area richness - Mid-Atlantic scale
- Avian core abundance area richness - Northeast scale
- Fish (NEFSC fall) core biomass area richness - Northeast shelf scale
- Fish (NEFSC fall) core biomass area richness - Mid-Atlantic scale
- Fish (NEFSC fall) core biomass area richness - Northeast scale
- Fish (NEAMAP) core biomass area richness - Northeast shelf scale
- Fish (NEAMAP) core biomass area richness - Mid-Atlantic scale
- Fish (NEAMAP) core biomass area richness - Northeast scale

A ranked relative abundance approach is another method tested by MDAT that has promise because with this method, relative abundances can be readily compared among taxa.

Ranked Relative Abundance/Biomass

KEY QUESTIONS

Is the taxa-level the right way to characterize abundance?
Higher temporal resolution?

What are the pros/cons of the different approaches to summarize abundance?

Updated map to match bookmark [undo](#) [change](#) [view details](#)

Esri, GEBCO, IHO-IOC GEBCO, DeLorme, NGS | Esri, GEBCO, DeLorme, NaturalVue | NOAA/NOS/Office of Coast Su... Powered by Esri and SeaSketch

Component 4: Areas of vulnerable marine resources – Example: Shellfish habitat

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Surveys / IEA Component 4 Evaluation

KEY QUESTIONS

What other stressor-sensitivity groups should be developed?

What other species and habitats are inherently vulnerable because of their life history?

4. Areas of Vulnerable Marine Resources

Data relevant to vulnerable marine resources come from many sources. Several sources were related to a management or regulatory framework designed to protect the resource, e.g., Critical Habitats defined under the Endangered Species Act. Layers were also derived from studies or efforts to quantify species' sensitivity to a particular stressor, e.g., the maps of avian species with higher collision sensitivity due to offshore renewable energy. Therefore, the available observational data and the chosen mapping approach may be skewed toward a particular concern/impact and less representative of more general inherent vulnerability. As a result, the layers in this category range in their ability to characterize species' fragility, inherent sensitivity, and sensitivity to specific stressors/disturbances.

For this Component, we relied heavily on existing data on the Northeast Ocean Data Portal, and also obtained new data from the [New England Fishery Management Council's SASI analyses](#) and [deep sea corals work](#), as well as the [Mid-Atlantic Fishery Management Council's deep sea corals work](#).

4a. Explore the layers that represent species' sensitivity to specific stressors:

♦ = currently also public on [northeastoceansdata.org](#)

- ♦Relative abundance of avian species with higher collision sensitivity
- ♦Relative abundance of avian species with higher displacement sensitivity
- ♦Abundance of cetaceans sensitive to high-frequency sound
- ♦Abundance of cetaceans sensitive to mid-frequency sound
- ♦Abundance of cetaceans sensitive to low-frequency sound
- Habitat sensitivity to bottom trawling - NEFMC
- Habitat sensitivity to longline fishing - NEFMC

4b. Explore the layers that relate to fragile and inherently sensitive species/habitats:

- MAFMC discrete deep sea coral zones
- NEFMC draft discrete coral zones
- ♦Eelgrass beds
- ♦Shellfish habitat
- ♦Coastal wetlands
- ♦Sponges
- ♦Fish and shellfish EFH overlay
- ♦Highly migratory species EFH overlay
- ♦Total relative abundance of BCR30 highest, high, and moderate priority avian species
- ♦Habitat Areas of Particular Concern (HAPC)
- ♦Scallop habitat closure areas
- ♦ASMFC Herring Spawning Areas
- ♦Critical Habitat Designations
- ♦Bird habitat

What is missing from this component?
Please describe.

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Component 5: Areas of rare marine resources – Example: Total relative abundance of Northeast state-listed avian species

Northeast Ocean Planning English take a tour ? help Emily Shumchenia

Data Layers My Plans Participate

Surveys / IEA Component 5 Evaluation

5. Areas of Rare Marine Resources

For this component, we parsed rarity into regional and global scales. Due to data availability, we relied primarily on ESA status to determine the species that were relevant to this component. Layers representing individual species/group abundance are derived from the MDAT mapping effort. We recognize that there may be additionally spatially rare species and habitats not identified below, and we ask that you provide input on those gaps and citations/references to existing data where possible in the space provided.

See a list of marine mammal, ocean and coastal bird, fish, and sea turtle species listed as endangered, threatened, or of special concern in at least one New England state for which MDAT products do not exist or are limited in scope.

All of the following datasets are already publicly available on northeastoceandata.org as noted by (*).

5a. Regionally rare:

- ♦ Total relative abundance of BCR30 priority avian species
- ♦ Total relative abundance of state-listed avian species

5b. Globally rare:

- ♦ Abundance of all ESA-listed cetaceans
- ♦ Roseate tern annual relative abundance

Is there a species, group, or habitat that is currently missing but critical to include in this component?

If so, please describe.

Are there gaps or other features in the rare marine resources data that affect overall interpretation?

If so, please indicate where: draw one or more polygons.

End of Component 5

If your answers are complete, hit the green "Submit Response". Once you hit Submit, you will not be able to edit these responses. You will, however, be able to return to the survey and start over with a blank evaluation - this action will save multiple copies of this evaluation under your name.

If you'd like to save your answers and return to the survey later to finalize them, hit the grey "Save Draft" button.

KEY QUESTIONS

What are our options to address the many data gaps for this Component?

If rarity could be calculated mathematically, how?

Updated map to match bookmark: [undo](#) [change](#) [view details](#)

Esri, GEBCO, DeLorme, NaturalVue | Esri, GEBCO, IHO-IOC GEBCO, DeLorme, NGS | NOAA/NOS/Office of Coast Su... Powered by Esri and SeaSketch

NORTHEAST OCEAN DATA PORTAL

Development and review of draft Important Ecological Area (IEA) data products



- In the process of obtaining input
- Need more time to learn about data and get feedback
- Incorporate new models, revise products, Fall 2017

The screenshot displays the Northeast Ocean Planning data portal. The main map shows the Northeast Ocean region, including the St. Lawrence River, Lake Ontario, Lake Erie, and the Atlantic coast. A large 'DRAFT' watermark is overlaid on the map. The interface includes a top navigation bar with 'Northeast Ocean Planning', 'seasketch', and user information for 'Emily Shurchenia'. Below the map, there are tabs for 'Data Layers', 'My Plans', and 'Participate'. The 'Data Layers' tab is active, showing a list of surveys, including 'IEA Component 3 Evaluation'. The 'Participate' tab is also visible. The 'Data Layers' section is expanded to show '3. Areas of High Abundance'. This section includes a description of the data products and a list of layers to explore. The layers are categorized into 'Total Abundance' and 'Core Abundance Area'. The 'Total Abundance' section includes a diagram showing a 3D stack of layers representing total abundance per taxa (3a), core abundance/biomass per taxa (3b), and ranked relative abundance per taxa (3c). The 'Core Abundance Area' section includes a diagram showing a 3D stack of layers representing the smallest area containing 50% of all individuals of a species. The '3a. Explore the marine life total abundance layers:' section lists the following layers: currently also public on [northeastoceandata.org](#), All cetaceans total abundance, All avian species total relative abundance, All fish species total biomass - NEFSC fall surveys, and All fish species total biomass - NEAMAP surveys. The '3b. Explore the marine life core abundance/biomass area richness layers:' section lists the following layers: Cetacean core abundance area richness - Atlantic scale, Cetacean core abundance area richness - Mid-Atlantic scale, Cetacean core abundance area richness - Northeast scale, Avian core abundance area richness - Atlantic scale, Avian core abundance area richness - Mid-Atlantic scale, Avian core abundance area richness - Northeast scale, Fish (NEFSC fall) core biomass area richness - Northeast shelf scale, Fish (NEFSC fall) core biomass area richness - Mid-Atlantic scale, Fish (NEFSC fall) core biomass area richness - Northeast scale, Fish (NEAMAP) core biomass area richness - Northeast shelf scale, Fish (NEAMAP) core biomass area richness - Mid-Atlantic scale, and Fish (NEAMAP) core biomass area richness - Northeast scale. At the bottom of the page, there is a footer with the text 'Esri, GEBCO, IHO-JOC GEBCO, DeLorme, NGS | Esri, GEBCO, DeLorme, Natural...' and 'Powered by Esri and SeaSketch'.

Updating marine life and habitat data & Development and review of draft Important Ecological Area (IEA) data products

Summary of Stakeholder Feedback

- *Marine Life and Habitat:* There is interest in understanding how recently collected data will be used to update marine life and habitat products on the Portal.
- *Draft IEA Products and Methods:* There is interest in understanding more about the pros and cons of potential methods, draft data products, and any limitations. There is also interest in understanding more about how IEA products may inform our understanding of data gaps.
- *Draft IEA Products and Methods:* There is interest in staying informed and being able to provide input on how products will be used.

NORTHEAST OCEAN DATA PORTAL



Updating marine life and habitat data &
Development and review of draft Important Ecological Area (IEA)
data products

Potential Next Steps

- Provide access to the Draft IEA Data Guide **(complete)**
- Provide access to draft IEA data products and methods **(in progress)**
- Continue obtaining feedback on draft products and methods **(through Aug)**
- Incorporate feedback and develop revised draft products **(July-Dec)**
- Host a public workshop to obtain input on key methodological questions that are identified during the expert and stakeholder review period **(Oct)**
- Considering recent RPB and public discussions; focus on developing a range of datasets and information to support a more complete characterization of each IEA Component, “Components of Ecological Importance”

What is Monitoring & Evaluation?



establishes two tracks

Plan Performance Monitoring

Measure progress toward implementing the Plan's actions and achieving the Plan's goals and objectives 

- Conditions before Plan
- Track implementation
- Obtain public input

Ecosystem Health Monitoring & Evaluation

Measure changes in the ecosystem, including human activities, to identify issues that may require management attention

- Baseline
- Indicators
- Obtain public input



Note: The Plan identifies both the *Ocean Health Index (OHI)* and the *Integrated Sentinel Monitoring Network (ISMN)* as two opportunities for evaluating ecosystem health.



Inform amendments and updates to the Plan

PLAN PERFORMANCE MONITORING



- RPB has developed an initial draft approach for monitoring plan performance
- Draft approach summarizes principles from NE Ocean Plan
 - Relate plan performance indicators to Plan outcomes, goals, objectives, and actions (or implementation activities)
 - Establish baseline
 - Balance specificity with availability of information
 - Establish fewer more effective indicators rather than many indicators
 - Obtain public input
 - Ensure indicators inform whether Plan amendments or updates are necessary

PLAN PERFORMANCE MONITORING



- Draft approach groups plan actions into **four major categories**:
 - Maintain and update data (Chapter 3)
 - Inform regulatory and management decisions (Chapter 3)
 - Enhance agency coordination (Chapter 3 and 4)
 - Advance regional science and research priorities (Chapter 5)

Each of the four major action categories:

- Identifies relevant actions from the Plan
- Includes draft outcomes either directly quoted or derived from the Plan
- Identifies relevant goals and objectives

2. Inform Regulatory and Management Decisions

Actions

Chapter 3 of the Plan summarizes the regulatory and management context in the region, including federal environmental and regulatory laws and management activities that are most relevant for Plan implementation. Each of the ten ocean resource and activity sections in Chapter 3 includes additional details about the regulatory and management context that is specific to the resource or activity. Each section also includes a series of actions under the heading “inform regulatory and management decisions” about how relevant agencies will use Plan data and information to inform decision-making. The following actions generally cover the intent of each of the individual actions under that section heading for each of the ten ocean resources or activities:

- Use the Plan and Portal to inform regulatory and management decisions.
- Use the Plan and Portal to identify potential conflicts and compatibilities.
- Use the Plan and Portal to identify and engage potentially affected stakeholders.
- Use the Plan and Portal to help determine the additional research or data collection necessary to make a regulatory or management decision.

Draft Outcomes

Throughout the Plan there are discussions and references to intended outcomes from this category of actions. The following attempts to summarize those outcomes for discussion purposes.

- Potential conflicts, compatibilities, affected stakeholders, and additional research considerations are identified early in relevant regulatory and management processes using the information in the Plan and the data on the Portal as two important regionally approved sources.
- Agency coordination, public engagement around agency actions and management activities, and stakeholder proposals and participation in the regulatory process are enhanced through the collective use of the Portal as a repository of regional data products that have been vetted as reasonable characterizations of the spatial extent of human activities and ocean resources.

3. Enhance Agency Coordination

Actions

Several of the ocean resource and activity sections in Chapter 3 include actions under the heading “enhance agency coordination.” These actions are primarily intended to ensure continued regional coordination around offshore human activities that are becoming or likely to become greater considerations over time, such as energy, aquaculture, and the use of offshore sand resources. The first section of Chapter 4 includes a series of best practices intended to generally enhance intergovernmental coordination and coordination with stakeholders across

PLAN PERFORMANCE MONITORING

Relevant Goals and Objectives

The following table is an initial attempt at linking actions from the 2016 Northeast Ocean Plan to the original planning goals and objectives from the [Framework for Ocean Planning in the Northeast United States](#) by identifying the planning objectives that are primarily relevant to each of the four previously described plan action categories.

GOAL	OBJECTIVE	Plan Action Categories			
		1. Maintain and Update Data	2. Inform Reg. and Mgmt. Decisions	3. Enhance Agency Coord.	4. Advance Science and Research Priorities
Healthy Ocean and Coastal Ecosystems	1. Characterize the Region’s Ecosystem, Economy, and Cultural Resources	X			X
	2. Identify and Support the Existing Non-regulatory Opportunities to Work Toward Conserving, Restoring and Maintaining Healthy Ecosystems			X	
	3. Produce a Regional Ocean Science Plan that Prioritizes Ocean Science and Data Needs for the Region for the Next Five Years	X		X	X
Effective Decision-making	1. Enhance Inter-Agency Coordination		X	X	X
	2. Implement Specific Actions to Enhance Informed Public Input in Decision-making		X	X	
	3. Incorporate Maps and Other Products into Existing Agency Decision-making Processes		X	X	X
	4. Improve Respect for the Customs and Traditions of Indigenous Peoples in Decision-making Processes			X	X
	5. Improve coordination with local communities in decision-making processes			X	
Compatibility Among Past, Current and Future Ocean Uses	1. Increase Understanding of Past, Current and Future Interactions Among Ocean Uses and the Ocean and Coastal Ecosystem	X	X	X	X
	2. Ensure Regional Issues are Incorporated in Ongoing Efforts to Assess New and Existing Human Activities			X	X

Summary of Stakeholder Feedback

- Ensure the plan performance monitoring approach tracks stakeholder engagement in both the (1) individual regulatory and management processes that are informed by the Plan and (2) the RPB's broader planning and implementation process.
- Consider using concrete deadlines for achieving plan outcomes. Also consider the difference between outputs and outcomes associated with the Plan.
- Many specific metrics or indicators were suggested, such as:
 - Stakeholder satisfaction with the Plan and Plan implementation
 - Engagement of different stakeholder groups, such as commercial and recreational fishing
 - Permitting timelines and changes in regulatory behavior

PLAN PERFORMANCE MONITORING



Potential Next Steps

- Ensure public engagement is evaluated within each of the main action categories **(ongoing)**
- Obtain additional input on how public engagement can be measured in specific regulatory processes and in the broader planning process **(ongoing)**
- Organize the RPB around the major action categories and identify a lead or co-leads for each **(Jun-Aug)**
- For each category **(Jun-Dec)**:
 - Identify individual actions from the Plan
 - Determine intended outcomes from the suite of actions
 - Develop indicators, including a qualitative or quantitative baseline for each, and develop processes for RPB organizations to report or provide updates on progress
- Develop options for communicating progress and determining how results can inform Plan amendments and updates and/or revisions to Plan goals/objectives/actions **(ongoing; 2018)**

Summary of Stakeholder Feedback

- *Potential reporting regions and goal setting:*
 - Consider pros and cons of using the 3-mile line
 - Include representatives of NY in discussions considering the potential southern and western boundaries
 - Consider using the entire Northeast as the only region since we already established the general planning area
 - Consider using different areas for different goals – some will be based on political boundaries and others may be based on biophysical boundaries. Consider scale of decisions for each goal.
- *Public input:*
 - Ensure this is a region-wide effort with broad input
 - Be clear about the specific questions and timeline for input
 - Concern about the commitment required to implement the OHI
- *Using the OHI:*
 - Concerns about whether goal scoring will be meaningful for decision-making and communication purposes, make us lose sight of actual tradeoffs, or risk maximizing one goal at others' expense

Potential Next Steps

- RPB to determine level of involvement in the implementation of the OHI for the northeast **(today)**
- OHI team to host a workshop to obtain input on reporting regions and goal setting **(July – Sep timeframe)**
- Determine OHI reporting regions **(TBD - based on previous decisions)**
- Determine goals for the northeast OHI that consider Plan priorities **(TBD - based on previous decisions)**
- Engage regional scientists and collect data to inform assessments for each goal **(ongoing)**



NORTHEAST OCEAN PLAN

NORTHEAST OCEAN PLAN

