

# Northeast Ocean Data Portal 2021 Work Plan

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## Purpose

The purpose of this work plan is to guide activities that support the maintenance and enhancement of the Northeast Ocean Data Portal (Portal), with particular focus over the next year. These activities pertain to four main categories:

1. Regional ocean data priorities
2. Application development
3. Maintenance of web/IT infrastructure
4. Communication and engagement

Section 1 identifies and organizes regional ocean data priorities and presents a plan for advancing them. Within each of more than ten ocean data themes, this work plan describes each dataset currently available on the Portal (as of December 2020), its current status, its recommended update schedule, and any dependencies. Dependencies refer to the collaboration and coordination required to manage large datasets under each theme. The Portal is reliant on Federal, state, and stakeholder-derived data or data products, and in order to adhere to the data maintenance and update schedules proposed below, the Portal Working Group needs certainty in receiving data from these sources and reliability in the timing of data delivery. For example, if a data provider changes the location of its web services or there is an interruption to the provider's web service delivery, there should be a system in place to notify the appropriate Portal contacts. Lastly, this section describes focal entities, processes, and timelines for stakeholder review and input on each ocean data theme.

Section 2 describes development tasks needed to maintain critical Portal functions such as the Data Explorer and Theme Maps, and other tasks that may be needed to enhance existing tools and provide upgrades to tool-functionality.

Section 3 describes the tasks relevant to Portal web/IT infrastructure maintenance.

Finally, a Communication and Engagement work plan is included in Section 4.

# 1 Regional Ocean Data Priorities

The following section describes regional ocean data priorities, including data gaps and emerging data priorities for each category of data.

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## ***Data gaps***

Throughout the Northeast Ocean Plan development process, several data gaps were identified (see [Northeast Ocean Plan Chapter 5 – Science and Research Priorities](#)). While some have been addressed or are beginning to be addressed, others remain. This work plan includes known data gaps and can be updated as additional data gaps arise.

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## ***Priorities recently identified by Ocean Planning Committee members and stakeholders***

Stakeholder data priorities articulated through the ocean planning process that led to the 2016 Northeast Ocean Plan are integrated into each data category in this work plan. Since that time the NROC Ocean Planning Committee (NROC OPC) has gathered additional input on particular priorities. In 2020, this occurred via webinars and other outreach including:

- Over 20 individual commercial fisheries stakeholder webinars co-hosted by NROC, MARCO, and the Responsible Offshore Development Alliance (RODA), as part of the FY19 NOAA Regional Ocean Data Sharing Initiative project
- Several webinars throughout the year with whale watching industry members and scuba stakeholders to discuss and review data products and updates
- NROC Ocean Planning Committee webinar in April, focused on sharing updates from the federal Interagency Ocean Policy Committee, the federal offshore wind energy program in the Northeast, the status of Port Access Route Studies in the region, and power grid and transmission planning
- NROC Ocean Planning Committee webinar in May, focused on state-led ocean planning and New England Fishery Management Council planning
- Regional Coordination of Data Platforms and Offshore-Wind-Related Data Collection on Habitat, Fisheries, and Wildlife webinar in October
- NROC Ocean Planning Committee webinar on Aquaculture Opportunity Areas in October
- Engagement with NROC and MARCO on identifying marine life data priorities and to develop a work plan for FY20 NOAA Regional Ocean Data Sharing Initiative funds
- Numerous trainings, demonstrations, and other meetings with Portal users from government agencies and the private sector

Progress on select priorities is summarized briefly below and integrated into the appropriate data category in this work plan.

<b>Priority</b>	<b>Progress in 2020</b>
Fishing	As part of the Regional Ocean Data Sharing Initiative in FY19, NROC and MARCO partnered with the Responsible Offshore Development Alliance (RODA), to obtain feedback from the commercial fishing industry on potential improvements and updates to maps and data products on the Northeast Mid-Atlantic Ocean Data Portals that show the use of ocean space by the industry. Recommendations included developing products representing fishing year instead of calendar year and presenting a more complete suite of

	<p>management areas from the NOAA GARFO GIS repository. Some updates and improvements have already been initiated. Other updates will continue to be scoped and advanced in 2021.</p>
Energy	<p>The Portal continued to coordinate with BOEM and other agencies/entities to present timely data and information relevant to offshore wind development processes. The Portal launched an Offshore Wind Projects page that presents interactive maps and status updates for each offshore lease area and active offshore wind project. Layers representing transmission lines and substations locations and voltages were also updated.</p> <p>In May, NROC received funding through a grant from the Massachusetts Clean Energy Center, the Bureau of Ocean Energy Management, and the Rhode Island Department of Environmental Management to collaborate with INSPIRE Environmental to develop standard approaches to synthesizing, visualizing and disseminating high-resolution acoustic and imagery data for mapping of seabed habitat in the wind energy areas. A component of this project will advance approaches to make high-resolution mapped data available to stakeholders on the Portal. This project runs through 2021.</p>
Marine life and habitat	<p>In collaboration with the New England Fishery Management Council (NEFMC), the Portal added new data that enables fishery managers to better understand the nature of fishing gear impacts on seabed habitats, the spatial distribution of seabed habitat vulnerability to particular fishing gears, and the spatial and temporal distribution of realized adverse effects from fishing activities on seabed habitats.</p> <p>With the US EPA and expert work groups convened by EPA Region 1 staff, the Portal will update existing coastal vegetation data products (seagrass and tidal marshes) and develop new data products that represent blue carbon stocks in these habitats across the region.</p> <p>As part of the Regional Ocean Data Sharing Initiative in FY20, NROC and MARCO are collaborating on updating existing marine life data products and developing new data products that address species shifts and species vulnerability to various stressors. The project will convene work groups for marine mammals and sea turtles, birds, fish, and for discussion movement information data products across all taxa. This project runs through 2021.</p>
Recreation	<p>The Portal initiated review and discussion with stakeholders of existing layers representing whale watching activity and scuba activity, as well as approaches for potential updates to each layer. Several webinars were held, and participants provided data and information to update and improve each of these layers and the accompanying documentation/metadata. The updated data and metadata will be finalized in early 2021.</p>
Proposed actions and public notices	<p>The Portal continued to support agency processes by linking to active notices of proposed actions, public comment periods, and other relevant issues noticed in the Federal Register. Map galleries were developed to collect maps and data relevant to current issues, including proposed actions. Examples include:</p> <ul style="list-style-type: none"> <li>• US EPA designation of the Isles of Shoals North Ocean Dredged Materials Disposal Site</li> <li>• US Coast Guard Port Access Route Studies – Northern New York Bight, Proposed Shipping Fairways</li> </ul>

	<ul style="list-style-type: none"><li>• New England Fishery Management Council actions, including the Deep Sea Coral Amendment</li></ul>
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The table below summarizes the data priorities and dependencies within each category. Click on the category or subcategory in the table for more information about current status, update schedule, dependencies, and stakeholder review and input.

**Summary of regional data priorities, dependencies, and update schedule in each data category**

Category	Subcategory	Data Priorities	Dependencies	Update schedule
<a href="#">Marine Life and Habitat</a>	<a href="#">Cetaceans</a>	Predicted density of whale, dolphin, and porpoise species  Total abundance and species richness for cetacean ecological groups, species of concern, and stressor groups	US Navy, NOAA AMAPPS, Duke MGEL	3-5 years
	<a href="#">Birds</a>	Predicted density of seabird species  Total abundance and species richness for bird spatial groups, ecological groups, species of concern, and stressor groups  Movement and tracking data for 3 species from USFWS	USFWS, NOAA NCCOS, BOEM	3-5 years
	<a href="#">Fish</a>	Observed biomass of fish species  Total biomass and species richness for fish ecological groups, managed species groups, and stressor groups	NOAA NEFSC, NEAMAP, states	3-5 years
	<a href="#">Sea turtles</a>	Predicted Loggerhead density from tracking data	NOAA NEFSC	3-5 years
<a href="#">Marine Life and Habitat</a>	<a href="#">Eelgrass</a>	Eelgrass extent	States	Every 2 years
	<a href="#">Coastal wetlands</a>	Coastal wetlands extent	States, EPA, Saltmarsh Habitat Avian Research Program	Every 5-10 years
	<a href="#">Blue carbon</a>	Blue carbon stocks in eelgrass and coastal wetlands habitats	EPA	TBD

	<a href="#">Kelp and macroalgae</a>	Under development/scoping - Kelp percent cover  Not yet available – macroalgae	Maine DMR, Bigelow, Brown University	TBD
	<a href="#">Physical habitat</a>	Sediment grain size data, seafloor morphology, Fishing Effects sediment data (percent sediment type, sediment diversity, and sediment data density) and oceanography data (e.g., climatologies of surface/bottom current speed, temperature, and stratification).	USGS, BOEM, UMass Dartmouth SMAST, NEFMC, NERACOOS	3-5 years
	<a href="#">Biological habitat</a>	Chlorophyll-a concentrations, zooplankton abundance, wetlands, shellfish habitat, cold water corals, and other benthic fauna.	NOAA NEFSC, USFWS, states, NOAA, UMass Dartmouth SMAST	3-5 years
	<a href="#">Fishing Effects</a>	Percent seabed habitat disturbance, monthly by gear type (2015, 2016, 2017) and Intrinsic seabed habitat vulnerability to fishing under median fishing effort, by gear type	NEFMC	As the Fishing Effects model outputs are updated
<a href="#">Aquaculture</a>	<a href="#">Aquaculture data</a>	Permitted and leased aquaculture operations	States, ACOE, NOAA	Annually
	<a href="#">Shellfish Management Areas</a>	Open, conditional, closed shellfishing areas	States	Annually or as designations change
<a href="#">Fishing</a>	<a href="#">Vessel activity</a>	Total activity and speed thresholds applied to Vessel Monitoring System data for Multispecies (groundfish) FMP, Monkfish, Scallop, Surfclam/Ocean Quahog, Herring, and Squid, and Pelagics (herring, mackerel, squid)	NOAA Fisheries	Preferably annually; at least every 2 years
	<a href="#">Management areas</a>	Current fishery management areas,	NOAA GARFO, NEFMC	As designations change

		management area alternatives under consideration by NEFMC and NOAA, and expired management areas		
	<a href="#">Communities at sea</a>	Vessel trip report data products organized by port, gear type, or both	NOAA Fisheries, NEFMC	3-5 years
<a href="#">Fishing</a>	<a href="#">Lobster fishery</a>	Under development	TBD	TBD
	<a href="#">Recreational fishing</a>	Under development	TBD	TBD
<a href="#">Cultural resources</a>	<a href="#">Historic sites and landmarks</a>	Historic sites, landmarks, districts, and properties listed on the National Register of Historic Places	NPS	Every 2 years
	<a href="#">Coastal parks and reserves</a>	National Park Service, state, local, and some private conservation lands	NPS, states, The Nature Conservancy	Every 2 years
	<a href="#">Tribal cultural resources</a>	Not yet available - Natural resources with Tribal cultural significance; submerged archaeological resources	TBD, possibly Tribes, BOEM	TBD
<a href="#">Energy and infrastructure</a>	<a href="#">Planning areas</a>	Various stages of the offshore wind planning and lease process, as well as permitted projects, projects in review (e.g., hydrokinetic energy projects, cable and pipeline projects), projects with preliminary permits, research leases and demonstration sites, and active renewable energy leases; state and federal planning areas	Project proponents, states, BOEM, DOE, FERC	As areas change, projects are permitted, or projects are proposed
	<a href="#">Infrastructure</a>	Locations of cables, pipelines, other transmission lines, and energy facilities	Industry, DOE, FERC	Annually
<a href="#">Marine transportation</a>	<a href="#">Navigation</a>	Anchorage, pilot boarding areas, safety and security zones, ocean disposal sites, navigation corridors and traffic lanes	NOAA, USCG, EPA, industry	Every 2 years or as designations are modified

<u>Marine transportation</u>	<u>Vessel traffic</u>	Annual and monthly vessel transit counts derived from Automatic Identification System (AIS) data for all vessels, cargo, passenger, tug-tow, fishing, tanker, pleasure-craft-sailing, and other vessel categories	USCG	Annually
	<u>Proposed areas and studies</u>	Port Access Route Study (PARS) areas and proposed fairways	USCG	As provided
<u>National security</u>	<u>National security data</u>	Danger zones, restricted areas, submarine transit lanes, and warning areas; military installation locations; military range complexes; testing and training areas; and OPAREA boundaries	US Navy, USCG	As provided by relevant entities; at least every 5 years
<u>Recreation</u>	<u>Boating</u>	Recreational boating density and recreational boating routes, distance sailing routes; AIS data products could be developed	Recreational stakeholders, industry, USCG	3-5 years
	<u>Whale watching</u>	Commercial whale watching areas; AIS data products under development	Whale watching stakeholders, industry, USCG	3-5 years
	<u>SCUBA</u>	Recreational SCUBA diving areas data	SCUBA stakeholders and industry groups	3-5 years
	<u>Recreation areas</u>	Boat launches, water trails, and coastal parks and reserves	States	3-5 years

<u>Restoration</u>	<a href="#">Restoration data</a>	Potential and completed restoration projects	States, ACOE, EPA, NOAA Fisheries, USFWS, other restoration partners and stakeholders	Every 2 years or as often as the NROC Restoration Subcommittee requests
<u>Water quality</u>	<a href="#">No discharge zones</a>	Locations of no discharge zones	EPA	Every 2 years
	<a href="#">Impaired waters and wastewater discharges</a>	Impaired waters designations and locations of wastewater discharges	EPA	As provided
<u>Bathymetry</u>	<a href="#">Bathymetry data</a>	Bathymetry composites/mosaics of broad geographic areas	NOAA NOS, NOAA OCM, University of NH, states	As provided
<u>Offshore sand</u>	<a href="#">Offshore sand data</a>	Location of aliquots with sand resources  Not yet available – location of onshore sand resource needs (e.g., beach nourishment) and location of offshore sand borrow sites	TBD, possibly BOEM, ACOE, states	TBD
<u>Physical oceanography</u>	<a href="#">Physical oceanography data</a>	Locations of ocean observing buoys, monitoring stations, mean annual offshore wind speed, North Atlantic Coast Comprehensive Study tropical storm peak water levels, 100-year return period water levels, 100-year return period wave heights	NREL, ACOE, NROC	2 years, or as provided
<u>Administrative and other contextual data</u>	<a href="#">Administrative data</a>	Coastal/ocean political boundaries, regulatory and management boundaries	NOAA, BOEM, other agencies	At least every 2 years or as designations change for regulatory and management boundaries
	<a href="#">Other contextual data</a>	Coastal demographic and economic data	US Census, NOAA ENOW	10 years

	<a href="#">Proposed actions and public notices</a>	Locations of proposed actions, public comment deadlines, links to agency documents if available, spatial data if available	TBD, but including USCG, BOEM, EPA, ACOE, states	As provided
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## 1.1 Marine Life and Habitat

Several thousand cetacean, bird, and fish species data products are presently provided and served by the Marine-life Data and Analysis Team (MDAT), led by the Marine Geospatial Ecology Lab (MGEL) at Duke University. MDAT members include MGEL who have produced cetacean data products, the NOAA National Centers for Coastal and Ocean Science (NCCOS) and Loyola University who have produced avian data products, and the NOAA Northeast Fisheries Science Center (NEFSC) who have produced fish data products. Many additional marine life and habitat data products, including eelgrass, physical habitat data, and biological habitat data, are provided by or were developed with other agencies and groups such as NOAA GARFO, NOAA NEFSC, USFWS, NERACOOS, The Nature Conservancy (TNC), and the states.

In 2021, NROC and the Mid-Atlantic Regional Council on the Ocean (MARCO) are partnering with each other and MDAT to develop updated marine life data products for the Portals through a project known as the Regional Ocean Data Sharing Initiative. Through this project, new and/or updated data products in several of the categories below may be available in 2021, including data products representing recent North Atlantic right whale distribution and range shifts, sea turtle data products, avian movement information data products, fish data products updates and new range shift products, and new products representing species vulnerability to various stressors.

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### ***Cetaceans***

Cetacean data products represent the predicted density of species of whales, dolphins, and porpoises. Summary products for cetaceans include predictions of total cetacean abundance and species richness for all cetacean species, ecological groups (e.g., baleen whales), species of concern (e.g., ESA-listed species), and stressor groups (e.g., species sensitive to low frequency sound).

### **Current status**

Individual species products for 23 cetacean species or species guilds, and all associated summary products, were updated by MGEL between 2018 and 2019. In 2021, North Atlantic right whale (NARW) monthly products will be updated and new data products representing shift in NARW before and after 2011 will be added to the Portal as part of the NOAA Regional Ocean Data Sharing Initiative. Another subset of cetacean species monthly products (including Humpback whale) will be updated by MGEL in 2022, in accordance with existing timelines from the US Navy.

The NOAA/BOEM Atlantic Marine Assessment Program for Protected Species (AMAPPS) developed seasonal density models for 17 individual species. These models are available online in the [AMAPPS Marine Mammal Model Viewer](#).

## Update schedule

Cetacean data products should be updated every 3-5 years. The update process includes expert review, revision, and documentation development for individual species products conducted by the data provider. Once individual species data products are integrated into summary products, another round of ocean planning expert review is conducted by NROC entities. In the past this process has taken between 8-14 months. MGEL updates all 23 cetacean species or species guild products on a rolling basis according to timelines defined by the US Navy, who funds model development. Therefore, in most years, a subset of species models are updated and Portal data products are revised.

## Dependencies

The frequency of new data (observations) collection, processing, database entry, and QA/QC by Federal, state, and non-government entities is the first major dependency. Sufficient new data needs to be accumulated to make a full update worthwhile. However, new data in key areas that were previously data-deficient or are of particular importance/interest to the species could be enough to initiate an update.

The frequency of cetacean data updates is also determined by the needs of the US Navy Fleet Forces Command, and/or the data collection and development schedule of the NOAA/BOEM Atlantic Marine Assessment Program for Protected Species (AMAPPS). These agencies/programs, who have each generated individual cetacean species data products in the past, could be coordinated to determine an appropriate set of products for ocean planning purposes, and a consistent update frequency.

Overall, updates to cetacean data products should be coordinated and ideally occur simultaneously with other marine life taxa to maximize efficiency.

There is a need to consider the long-term vehicle for cetacean data to the Portal, and whether that vehicle is MGEL or a/multiple Federal source/s.

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## ***Birds***

Bird data products represent the predicted density of species of seabirds. Summary products for birds include predictions of total bird abundance and species richness for all bird species, ecological groups (e.g., diving and pursuit plunging birds), spatial groups (e.g., nearshore and offshore species), species of concern (e.g., State-listed species), and stressor groups (e.g., species sensitive to displacement from offshore energy infrastructure).

## Current status

Individual species products for approximately 40 avian species, and all associated summary products, were updated by MDAT in August 2018. The NOAA National Centers for Coastal Ocean Science (NCCOS) is funded by the BOEM Environmental Studies Program in 2020-2022 to model predicted shifts in marine bird distributions and ranges. Data products resulting from this project could be made available on the Portal in 2022.

The Portal continues to coordinate with USFWS and BOEM to present data products for bird species that are particularly vulnerable to impacts for offshore renewable energy, derived from

movement/tracking studies. Products for three diving bird species were made available on the Portal in 2019. Products for additional species (e.g., Black-capped petrel, piping plover) could be made available in 2021 as part of the NOAA Regional Ocean Data Sharing Initiative.

### Update schedule

Bird data products should be updated every 3-5 years. The update process includes expert review, revision, and documentation development for the individual species model results conducted by the data provider. Once individual species data products are integrated into summary products, another round of ocean planning expert review is conducted by NROC entities. In the past this process has taken between 8-14 months.

### Dependencies

The frequency of new data (observations) collection, processing, database entry, and QA/QC by Federal, state, and non-government entities is the first major dependency. Sufficient new data needs to be accumulated to make a full update worthwhile. However, new data in key areas that were previously data-deficient or are of particular importance/interest to the species could be enough to initiate an update.

For bird observations, the primary databases are the USFWS Northwest Atlantic Seabird Catalog and the Canadian Wildlife Service (Environment and Climate Change Canada) Eastern Canada Seabirds at Sea database. NOAA NCCOS, with funding from BOEM, uses data from these sources to develop individual avian species models.

Overall, updates to bird data products should be coordinated and ideally occur simultaneously with other marine life taxa to maximize efficiency.

There is a need to consider the long-term vehicle for bird data to the Portal, and whether that vehicle is MDAT or the Federal source.

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## ***Fish***

Bird data products represent the observed biomass of species of fish caught by trawl survey programs throughout New England. Trawl datasets are each represented by separate data products and include the NOAA NEFSC trawl, North East Area Monitoring and Assessment Program (NEAMAP) trawl, Maine/New Hampshire trawl, Massachusetts trawl, and Long Island Sound trawl. Trawl datasets across the northeast and mid-Atlantic have recently been compiled by the New England and Mid-Atlantic Fishery Management Councils as part of their Northeast Regional Habitat Assessment (NRHA).

Summary products for fish are developed only for NEFSC trawl data and include maps of total fish biomass and species richness for all fish species, ecological groups (e.g., demersal fish), managed species (e.g., species in the Multispecies Fishery Management Plan), and stressor groups (e.g., species sensitive to changes in abundance due to climate change stressors).

### Current status

NEFSC trawl data products were updated in 2019, using NEFSC methods and code. The new data products include spring and fall observed and mean biomass for 81 species over approximately

the last decade (2010-2017). State trawl data products were last updated in 2018, when MDAT refined calculation methods only. Historical NEFSC trawl data products (i.e., for decades between 1970 and 2010) for Mid-Atlantic species were added to the Mid-Atlantic Ocean Data Portal through a project coordinated by the Virginia Coastal Program and conducted by The Nature Conservancy in 2020. The Fishery Management Councils could contribute pre-processed trawl data from the NHRA project for presentation on the Portal or further analysis through the NOAA Regional Ocean Data Sharing Initiative. Also, as part of the NOAA Regional Ocean Data Sharing Initiative, NEFSC trawl data products could be updated and historical NEFSC trawl data products could be developed for northern species.

The Portal is currently coordinating with Rhode Island DEM to display Narragansett Bay and RI Sound fish trawl data products in the Portal.

### Update schedule

Fish data products should be updated every 3-5 years. The update process includes expert review, revision, and documentation development for the individual species data products conducted by the data provider. Once individual species data products are integrated into summary products, another round of ocean planning expert review is conducted by NROC entities. In the past this process has taken between 8-14 months.

### Dependencies

The frequency of new data (observations) collection, processing, database entry, and QA/QC by Federal, state, and non-government entities is the first major dependency. However, fish trawl surveys have been consistently conducted by all responsible entities at least annually and often 2+ times per year.

NOAA NEFSC has made recent progress streamlining workflows to process, enter, and QA/QC NEFSC trawl data into electronic databases.

Obtaining data and developing spatial data products from each of the state trawl programs and NEAMAP represents a significant amount of effort. State trawl programs that have contributed data include Connecticut DEEP, Rhode Island DEM, Massachusetts DMF, Maine/New Hampshire DMR. The primary challenge is that each trawl program collects data using tools and methods chosen specifically for that program; therefore results cannot simply be pooled and displayed together. Comparable but separate map products should be developed for each program. The NRHA project seeks to make progress on this topic by generating individual species models and joint or community species models for offshore and inshore species.

There is a need for NOAA NEFSC to coordinate with NEAMAP and the state trawl programs to obtain updated data at a regular frequency and to maintain these additional data products.

There is a need to consider the long-term vehicle for fish data to the Portal, and whether that vehicle is NEFSC or if another entity should coordinate delivery of the Federal, NEAMAP, and state trawl data.

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## ***Sea turtles***

The NOAA/BOEM Atlantic Marine Assessment Program for Protected Species (AMAPPS) has been collecting sea turtle observations for nearly a decade. Observation data and some survey effort information are entered into the Ocean Biogeographic Information System (OBIS).

#### Current status

The AMAPPS project will produce new sea turtle data products in 2021. These products can be integrated into the Portal as part of the NOAA Regional Ocean Data Sharing Initiative. Monthly density products for tagged loggerhead sea turtles provided by NEFSC were released on the Portal in late 2019. The data products are coarse (~40km) resolution and mapped onto the AMAPPS grid. Legacy spatial data for multiple sea turtle species derived from the TNC Northwest Atlantic Marine Eco-Regional Assessment (NAMERA) were retired in August 2018 due to the age of the data (>10 years).

#### Update schedule

Sea turtle data should be updated every 3-5 years. The update process should include expert review, revision, and documentation development for the results generated by the data provider. Prior to inclusion in the Portal, agency staff, other experts, and stakeholders should review and provide feedback on data accuracy and presentation.

#### Dependencies

NOAA NEFSC provided the monthly loggerhead sea turtle data products on the Portal. The NOAA/BOEM AMAPPS is another source of regional-scale sea turtle data.

Sea turtle stranding data, although more widely available than live observations, is not desirable for producing regional-scale data products representative of sea turtle distribution or occurrence.

Regional-scale sea turtle observation data are generally sparse.

Sea turtle observation data may be collected by various programs using different methods.

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### ***Eelgrass***

Eelgrass data on the Portal is a single composite layer of current eelgrass coverages from each New England state. The Portal also houses an eelgrass “resource page”, which contains a catalog of many historical eelgrass datasets in addition to previous and current eelgrass regional coverages.

#### Current status

Eelgrass data were last requested from states in mid 2017 and the current regional layer was published in 2018. An update is planned for 2021.

#### Update schedule

Eelgrass data should be updated every 2 years; updated data will be posted on the Portal in 2021. Updates to eelgrass data are currently being supported via work groups convened by EPA Region 1. As part of this project, which is funded by EPA, the regional composite eelgrass layer will be updated with the most recent eelgrass data from each New England state and made available on

the Portal. The historical eelgrass data resource page will also be updated and assessed for completeness. Products will include:

- Regional composite seagrass layer that represents a compilation of the most recent seagrass survey data from each state/area
- Modern historical data (e.g., 1950 and younger) could be compiled into a new “potential eelgrass habitat” layer
- Review and update Portal Eelgrass Resource page (<https://www.northeastoceandata.org/eelgrass>)

### Dependencies

Eelgrass data is provided by the state agencies who coordinate eelgrass surveys, including Maine DMR, the University of New Hampshire, Massachusetts CZM/DFW, Rhode Island DEM/University of Rhode Island, and Connecticut DEEP. When the current composite eelgrass layer is updated, the historical datasets catalog on the Eelgrass resource page should also be updated (i.e., the last version is moved to historical).

Once QA/QC'd data are received, updates can be published in 6 months (including expert review).

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### ***Coastal wetlands***

For the purposes of visualization on the Portal, coastal wetlands were defined as vegetated wetlands in saline or brackish waters that were not permanently flooded, or not in open water. The NWI classes that applied to this definition included “Estuarine intertidal emergent”, “Estuarine intertidal scrub-shrub”, “Estuarine intertidal forested”, and “Estuarine intertidal unconsolidated shore with organic soil types that were irregularly flooded.”

### Current status

Coastal wetlands data in the Portal were derived from the National Wetlands Inventory in 2014. An update is planned for 2021.

### Update schedule

Because of the challenges mapping and reconciling detailed coastal wetlands data across the region, updates should occur approximately every 5-10 years. Updated data will be posted on the Portal in 2021.

Updates to coastal wetlands data are currently being supported via work groups convened by EPA Region 1. As part of a project funded by EPA, the regional coastal wetlands layer will be updated with data compiled and synthesized by the [Saltmarsh Habitat Avian Research Program \(SHARP\)](#) or with the most recent National Wetland Inventory (NWI) data, or other sources as recommended by the work group.

### Dependencies

Coastal wetlands data is provided by the state agencies who coordinate surveys, or in some cases is supported or led by the NOAA National Estuarine Research Reserve System. State agencies

include Maine DMR and the Maine Natural Areas Program, the University of New Hampshire, Massachusetts CZM/DFW, Rhode Island DEM/University of Rhode Island, and Connecticut DEEP. These data are also compiled by the National Wetlands Inventory program.

Once QA/QC'd data are received, updates can be published in 6 months (including expert review).

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### ***Blue Carbon***

Blue carbon is the term used to define carbon sequestered in marine habitats such as seagrasses and marshes. New blue carbon data products are currently being developed via work groups convened by EPA Region 1. As part of this project, which is funded by EPA, a regional composite blue carbon layer will be made available on the Portal in 2021. This effort will help to support ocean planning, management, and blue carbon assessment in the Northeast US.

#### Current status

The EPA-led work groups are currently identifying data sources to be used in the development of blue carbon data layers for eelgrass and salt marsh habitats.

Existing research by EPA Region 1 scientists and collaborators (and/or other similar research published in agency reports or peer-reviewed journals) will be used to apply generalized carbon stock values or “multipliers” for eelgrass and salt marsh habitats in various environmental settings to updated data products. Blue carbon stocks appear to differ among habitats such as exposed coasts, sheltered embayments, and urban coastlines. The expert work group would guide the partitioning of current eelgrass and salt marsh habitats into these types (i.e., exposed coast, sheltered embayment, and urban coastline). Then, blue carbon multipliers for each coast type would be applied to each habitat to develop a representative map of blue carbon stocks.

#### Update schedule

The EPA work groups will recommend an update schedule for this data product. Updates to blue carbon layers could be developed whenever the underlying habitat data (eelgrass and salt marsh habitats) are updated.

#### Dependencies

EPA is currently providing the support to map carbon stocks in eelgrass and salt marsh habitats. The applicability of carbon stock values or multipliers from this study should be assessed when eelgrass and coastal wetlands data are updated.

A regional blue carbon layer could also include kelp and macroalgae if these datasets and blue carbon multipliers are developed in the future.

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### ***Kelp and macroalgae***

Kelp forests and macroalgae distribution and abundance data were identified as a data gap in the 2016 Northeast Ocean Plan and since. Outreach and engagement with research scientists in the region in 2019 identified several publicly available datasets derived from legacy and ongoing kelp monitoring efforts. These data could be synthesized, with guidance and input from the scientists, to develop a regional kelp layer:

- Doug Rasher, Bigelow Labs – 2019 was year 1 of multi-year Maine coastal kelp assessment
- Kelp Ecosystem Ecology Network (<http://kelpecosystems.org/>) – sites throughout the Northeast, seasonal/annual since 2014
- Witman Cashes Ledge (and other Gulf of Maine sites) time series – 1987, 2012, 2014-2016

Research scientists and Maine also suggested that the Portal could leverage kelp monitoring data that are collected by the Maine Department of Marine Resources (DMR) during their annual urchin surveys.

#### Current status

Kelp forests and macroalgae are not currently depicted on the Portal.

#### Update schedule

To be determined.

#### Dependencies

Kelp and macroalgae distribution and abundance data are not routinely collected by federal agencies. States and/or academic researchers may be able to provide data on this topic, including Maine DMR and those research scientists listed above. Due to the patchy nature of data collection in space and time, synthesis and representation at the regional scale should be guided by regional experts.

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#### ***Physical habitat***

Physical habitat data include sediment grain size data, seafloor morphology, and oceanography data (e.g., climatologies of surface/bottom current speed, temperature, and stratification).

#### Current status

Physical habitat data were updated in 2016 in collaboration with NERACCOOS and other partners. In 2020, the New England Fishery Management Council provided regional sediment layers from their Fishing Effects model.

#### Update schedule

Physical habitat data should be updated every 3-5 years, or when new composites of coastal bathymetry/LiDAR, substrate, or state mapping program data are made available.

#### Dependencies

USGS maintains the East Coast Sediment Texture Database

BOEM is funding seafloor data collection by various entities throughout New England for efforts related to offshore sand management, offshore renewable energy planning, and other resource

management purposes. There is a need to understand the repository(ies) for these data and if/how they can contribute to regional characterizations of seafloor features.

Oceanographic data products (sea surface and bottom temperature, stratification, surface and bottom current speed) were developed via a collaboration between UMass Dartmouth and NERACOOS from FVCOM hindcast outputs. NERACOOS could continue to serve as provider of climatological physical oceanography products and expert review.

The New England Fishery Management Council developed regional sediment layers to support the Fishing Effects model (see [Fishing Effects](#)).

Data acquisition, analysis, processing, and development of updated spatial data products would require 3-6 months of Portal Working Group effort.

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### ***Biological habitat***

Biological habitat data include chlorophyll-a concentrations, zooplankton abundance, shellfish habitat, cold water corals, and other benthic fauna.

### **Current status**

All biological habitat data were updated in 2016. Climatological data products for chlorophyll-a concentrations and zooplankton abundance should be updated in 2021. Other biological habitat products, such as shellfish habitat, should be evaluated for updates in 2021.

### **Update schedule**

Biological habitat data should be updated every 3-5 years.

### **Dependencies**

Chlorophyll-a concentrations: Data products characterizing regional chlorophyll-a concentrations and patterns in primary productivity are developed by NOAA NEFSC as part of the Northwest Atlantic Continental Shelf Ecosystem Status Report. The present dataset was compiled by TNC.

Zooplankton abundance: Data products characterizing regional zooplankton abundance and patterns in secondary productivity are developed by NOAA NEFSC as part of the Northwest Atlantic Continental Shelf Ecosystem Status Report. The present dataset was compiled by TNC. In 2019, NEFSC publicly released zooplankton and ichthyoplankton abundance and distribution data collected between 1977-2017 via the NCEI repository.

Shellfish habitat: Provided by the states.

Cold water corals: As of 2019, the Portal leverages Marine Cadastre web services for deep-sea soft and stony coral habitat suitability models.

Other benthic fauna: Provided by the University of Massachusetts Dartmouth School of Marine Science and Technology in partnership with TNC; hosted by the Portal.

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The New England Fishery Management Council's (NEFMC's) Northeast Fishing Effects model represents the second generation of a framework that enables fishery managers to better understand the nature of fishing gear impacts on seabed habitats, the spatial distribution of seabed habitat vulnerability to particular fishing gears, and the spatial and temporal distribution of realized adverse effects from fishing activities on seabed habitats. Fishing Effects builds on the methods and results of the Swept-Area-Seabed-Impact (SASI) model developed in 2011 by the NEFMC Habitat Plan Development Team. Fishing Effects combines seafloor data (sediment type, energy regime) with parameters related to the interactions between fishing gear and seafloor habitats to generate habitat disturbance estimates in space and time.

#### Current status

Three types of data and maps were made available on the Portal in 2020: Various sediment layers (see [Physical Habitat](#)), percent seabed habitat disturbance monthly by gear type (2015, 2016, 2017) and intrinsic seabed habitat vulnerability to fishing under median fishing effort, by gear type.

#### Update schedule

The Portal will incorporate updates as made available by the NEFMC.

#### Dependencies

The NEFMC Habitat Plan Development Team developed the model and synthesized the data from state, federal, and non-governmental sources.

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### ***Marine Life and Habitat Data Stakeholder Review and Input***

Marine life and habitat stakeholder review and input will be obtained via webinars, workshops, conferences and/or individual outreach on draft datasets and changes to the overall presentation of the data on the Portal.

There continues to be interest from some marine life data providers (e.g., USFWS, NEFSC) to contribute via an ad-hoc "movement information data products" work group to discuss and encourage the development of additional data products based on telemetry and tracking data. The Portal held an informational webinar in early 2020 and met individually with researchers wishing to share movement information data on the Portal. The Portal will continue to facilitate these discussions via webinars and individual outreach.

Key stakeholders include the experts within Federal and state agencies, and academia who have previously served on work groups throughout marine life and habitat data development processes.

Additional key stakeholders include industry members (e.g., commercial fishing, whale-watching), environmental conservation organizations, and citizen science groups (e.g., bird-watching).

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## **1.2 Aquaculture**

The Aquaculture theme includes datasets relevant to the spatial location/footprint of aquaculture operations as well as shellfish management areas.

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## ***Aquaculture Data***

### Current status

Aquaculture data were updated in 2019, however, the composite layer displayed on the Portal is composed of each state's individual aquaculture dataset which are updated by the states on different timelines. For example, the composite layer contains information from between 2013 and 2019, depending on the state. ME, NH, and RI aquaculture datasets were updated in 2019.

Updates to permitted and leased aquaculture operations will continue to be completed in 2021, per coordination with the states.

### Update schedule

Aquaculture data should be updated annually.

### Dependencies

Each state fisheries and/or aquaculture management agency maintains the data that are eventually compiled in the Portal into a single regional aquaculture layer. The states provide those data to the Portal dependent on their own update cycles.

The ACOE may maintain a database of all permitted aquaculture operations in the region, which can be used to confirm/verify state-level data.

As aquaculture operations in federal waters become more common, increased coordination with NOAA NMFS will be required to obtain relevant data and updates.

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## ***Shellfish Management Areas***

### Current status

Shellfish Management Areas were updated in 2019, however, the composite layer displayed on the Portal is composed of each state's individual shellfish management areas dataset which are updated by the states on different timelines. For example, the current composite layer contains information from between 2013 and 2019, depending on the state. Maine DMR provides its data as a web service, so monthly updates are automatically reflected in the Portal.

### Update schedule

Shellfish Management Areas should be updated every 2 years or as often as states make changes to the data.

### Dependencies

Shellfish Management Areas data are obtained from the states. Maine DMR provides its data as a web service, so monthly updates are automatically reflected in the Portal.

### ***Aquaculture Data Stakeholder Review and Input***

Aquaculture stakeholder review and input will be obtained via webinars, workshops, conferences and/or individual outreach on draft datasets and changes to the overall presentation of the data on the Portal.

Key stakeholders include states, US Army Corps of Engineers (ACOE), NOAA, and aquaculture practitioners.

## **1.3 Fishing**

The Portal includes a Commercial Fishing theme with datasets representing commercial fishing vessel activity derived from the Vessel Monitoring System (VMS), fisheries management areas, and fishing activity data derived from Vessel Trip Reports (VTR) and other sources.

As part of the Regional Ocean Data Sharing Initiative in FY19, NROC and MARCO partnered with the Responsible Offshore Development Alliance (RODA), to obtain feedback from the commercial fishing industry on potential improvements and updates to maps and data products on the Northeast Mid-Atlantic Ocean Data Portals that show the use of ocean space by the industry. Recommendations included developing products representing fishing year instead of calendar year and presenting a more complete suite of management areas from the NOAA GARFO GIS repository. Some updates and improvements have already been initiated. Other updates will continue to be scoped and advanced in 2021. Recreational fishing data are also of interest, but not currently available on the Portal. Exploring data product development for recreational fishing is also a component of the FY19 Regional Ocean Data Sharing Initiative.

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### ***Vessel Activity***

#### Current status

The Portal requested vessel monitoring system data from NOAA in mid-2020 for the calendar years 2015-2019 for the entire northeast reporting system. When obtained, these data will be synthesized into products similar to the vessel activity data aggregated by fishery management plan (FMP) that are currently shown on the Portal. Input obtained through the FY19 Regional Ocean Data Sharing Initiative will inform the development of these updated data products, including additional categories of vessel activity such as “Declared Out of Fishery” and revisions to the time windows for each fishery based on fishing year.

Vessel activity data were last updated in 2018 with data through 2016. They are provided in two-year increments. Vessel activity data are aggregated by FMP and include the Multispecies (groundfish) FMP, Monkfish, Scallop, Surfclam/Ocean Quahog, Herring, and Squid. A “Pelagics” group (herring, mackerel, squid) is also presented to show together vessels that fish these species similarly and/or under separate permits.

Total vessel activity and vessel activity under a specific speed threshold are both shown for each fishery. Speed thresholds were determined with industry input to better distinguish fishing activity from transits and non-fishing activity. However, many non-fishing activities such as processing catch, sorting, drifting, and idling may also occur below the applied speed thresholds.

#### Update schedule

Vessel activity data should be updated annually.

#### Dependencies

NOAA NMFS is the source of vessel monitoring system (VMS) data. VMS data represents vessel activity for those vessels carrying federal fishing permits only. Adequate data processing, QA/QC, and advice on how to map VMS codes are important for efficiently visualizing and displaying fishery-specific products on the Portal. Once processed and QA/QC'd data are received, updates can be published in 3-6 months (including expert and industry review).

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#### ***Management Areas***

Fishery management areas includes current (i.e., finalized) Management Areas as well as Management Area Alternatives that are under consideration by NOAA and NEFMC. The hosting of Management Area Alternatives supports the Council's review process and makes relevant data layers and information available to Council members and the public.

#### Current status

As part of the FY19 Regional Ocean Data Sharing Initiative, the Portal is leveraging NOAA GARFO's GIS repository to add layers relevant to active fishery management areas, organized by fishery management plan. These layers will be finalized and released in early 2021. The Portal is also creating a new category of management areas called "Expired management areas" to reflect management areas that are no longer active but that could be used to interpret fishing vessel activity data for the corresponding time period of relevance (e.g., match Sea Scallop Rotational Areas layer from 2019 with scallop vessel activity data from 2019).

The Final NEFMC Preferred Alternatives for both the Coral Amendment and the Clam Dredge Framework were added in 2018 and finalization is pending NOAA rulemaking. In 2020, the Portal added layers representing the Clam Dredge Exemption Areas as part of the final Clam Dredge Framework and Habitat Research Areas in the Great South Channel Habitat Management Area.

The Portal will continue to support the assessment and review of NEFMC alternatives for proposed management actions by posting relevant data and information.

#### Update schedule

Updated Management Areas data are obtained from NOAA GARFO as they are published.

Updates to or progress on Management Area Alternatives are obtained from NEFMC when alternatives are discussed by Council committees.

#### Dependencies

Updates to Management Areas data could be streamlined if the Portal could ingest web services maintained by NOAA GARFO.

Management Area Alternatives are obtained from NEFMC. In order to prepare data for Council committee consideration, the Portal need to receive data, metadata, and contextual information approximately 2 weeks in advance.

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## ***Communities at Sea (CAS)/Vessel Trip Reports (VTR)***

### Current status

The Communities at Sea/VTR data (1996-2015) were added to the Portal in 2019. These data products represent federal VTRs only. The FY19 Regional Ocean Data Sharing Initiative continues to explore updating and/or improving these products.

### Update schedule

Communities at Sea/VTR data should be updated every three to five years or replaced by other analyses of community fisheries activity that are being conducted and will be replicated by NOAA, the NEFMC, or others.

### Dependencies

NOAA NMFS provides Vessel Trip Report data and dealer reports that comprise these data products.

NOAA Fisheries currently maintains their [Fishing Footprints](#) tool, which utilizes VTR (landings) and dealer data (revenues). The Fishing Footprints tool provides landings and revenues by year, for multiple species and fishery management plans, and gear types. This tool is updated by NOAA and would require additional resources for NROC/MARCO to integrate the data into the portals. However, the tool/data does not include landings associated with home ports.

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## ***Lobster fishery***

### Current status

Datasets on the Portal pertinent to the lobster fishery are presently limited. The FY19 Regional Ocean Data Sharing project will identify any short-term products or solutions for depicting the lobster fishery in the Portals and develop recommendations and a longer-term plan for characterizing the extent, historical use, and temporal and spatial dynamics of the lobster fishery.

### Update schedule

To be determined.

### Dependencies

Industry, the states and NOAA NMFS are sources for lobster fishery data.

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## ***Recreational fishing***

### Current status

There is currently no recreational fishing data on the Portal. The FY19 Regional Ocean Data Sharing Initiative will identify any short-term products or solutions for depicting recreational fisheries (e.g., the recreational fishing charter industry and the extent of private recreational fishing activity) and to develop a longer-term plan for characterizing the extent and footprint of these fisheries.

### Update schedule

To be determined.

### Dependencies

Through the FY19 Regional Ocean Data Sharing Initiative, spatial data development for recreational fishing vessel activity or recreational fishing areas would occur in collaboration with recreational fishing groups. Existing sources of data, such as AIS and federal VTRs, could be leveraged to create a partial picture of recreational fishing activity which could then be reviewed and revised by recreational fishermen through participatory GIS or other methods.

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## ***Commercial Fishing Data Stakeholder Review and Input***

Key stakeholders and venues include states, NOAA National Marine Fisheries Service, the New England Fishery Management Council, industry groups, and industry meetings/conferences. Commercial fishing stakeholder review and input will be obtained via webinars, workshops, conferences and/or individual outreach on draft datasets and changes to the overall presentation of the data on the Portal.

The fishing data development project conducted through the FY19 Regional Ocean Data Sharing Initiative represented a major avenue for stakeholder review and input in 2020. The project was designed to include industry representatives throughout and by including the Responsible Offshore Development Alliance (RODA) as a project partner. Industry focus groups reviewed the data that are currently available, considered the ways in which fisheries data are currently being used or will potentially be used to inform decision-making, and provided guidance on the products that need to be developed in the short and long term, ultimately informing the development of options for filling significant fisheries related data gaps.

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## **1.4 Cultural Resources**

Cultural Resources data on the Portal includes publicly available locations and information for historic sites, landmarks, coastal parks, reserves, and other data products determined by tribes to reflect cultural importance.

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### ***Historic Sites and Landmarks***

### Current status

A review and update of all maps and data depicting historic sites, landmarks, districts, and properties listed on the National Register of Historic Places was initiated in 2019 and will be completed in 2021.

### Update schedule

Historic sites and landmarks should be updated every 2 years.

### Dependencies

Historic sites, landmarks, districts, and properties data are derived from the National Register of Historic Places. These data and associated information are maintained by each state and the National Park Service.

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## ***Coastal Parks and Reserves***

### Current status

The coastal parks and reserves data product includes National Park Service, state, local, and some private conservation lands within 10km of the New England coastline. This product was reviewed and updated in 2020.

### Update schedule

Coastal parks and reserves data should be updated every 2 years, or when the local, state, and federal entities providing the individual datasets generate an update to these data.

### Dependencies

The Nature Conservancy has previously aggregated the Coastal Parks and Reserves data from the various sources and provided the resulting layer to the Portal.

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## ***Tribal Cultural Resources***

### Current status

Data on the Portal to address Tribal Cultural Resources are presently limited. Tribes have discussed including existing natural resource data products under a Tribal Cultural Resources category within this theme to represent species and/or habitats of particular importance to Tribes. Additionally, ongoing studies of submerged archaeological resources may generate new data products that could be included under this umbrella. Other existing data products determined by Tribes to reflect cultural importance from other Portal themes could be included as well.

### Update schedule

Tribal Cultural Resource data derived from existing data sources would be updated according to each individual dataset's update cycle.

Submerged archaeological resource data update schedules will be determined when the data are developed.

#### Dependencies

Natural resource data of Tribal importance will be dependent on those agencies and entities providing the data and updates (see [Marine Life and Habitat](#)).

Submerged archaeological resource data could be provided by BOEM and/or the University of Rhode Island, or other groups/entities collecting similar data or generating data products.

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#### ***Cultural Resources Data Stakeholder Review and Input***

Cultural resources data will be reviewed by the states, National Park Service, and Tribes. The Portal Working Group will also obtain broader stakeholder input via workshops and conferences on changes to the overall presentation of the data on the Portal.

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### **1.5 Energy and Infrastructure**

Energy and Infrastructure data on the Portal include Federal, state, and project-based energy planning areas offshore and existing infrastructure data. As offshore renewable energy development continues to advance in the region, the Portal will continue to support timely and efficient updates and representations of datasets (e.g., proposed project footprints, cable routes, turbine layouts, etc.) to facilitate agency and stakeholder review.

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#### ***Planning Areas***

##### Current status

Planning areas data were updated several times in 2020. Many types of planning areas are represented, including almost all stages of the offshore wind planning and lease process, as well as permitted projects, projects in review (e.g., hydrokinetic energy projects, cable and pipeline projects), projects with preliminary permits, research leases and demonstration sites, active renewable energy leases, and proposed oil and gas draft proposed program areas. State and federal planning areas are distinguished in the representations.

##### Update schedule

Planning area updates for several layers are obtained from BOEM and or via Marine Cadastre's web services. Other Planning area updates are made as data are provided by project proponents and relevant regulatory agencies (depending on the specific activity) including states, ACOE, BOEM, FERC, and DOE.

##### Dependencies

BOEM, DOE, FERC, and project proponents are the source of data for energy planning areas. As BOEM makes changes to Planning areas web services, those changes should be reflected in the Portal. States are the source of planning areas in state waters.

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## **Infrastructure**

### Current status

The Portal displays data related to the locations of electrical and telecommunications cables, pipelines, other transmission lines, and energy facilities. Transmission lines and substations data products were updated in 2020.

### Update schedule

Infrastructure products should be updated annually or as data for new infrastructure is made available.

### Dependencies

Locations of cables, pipelines, and other critical energy infrastructure can be proprietary and/or classified. The Portal relies on the industry and Federal agencies (DOE, FERC) to provide datasets for these features at the scale(s) appropriate for public display.

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## **Energy and Infrastructure Data Stakeholder Review and Input**

Key stakeholders for Energy and Infrastructure data review and input include individual project proponents, ACOE, BOEM, DOE, FERC, and the states. The Portal Working Group will also obtain broader stakeholder input via workshops and conferences on changes to the overall presentation of the data on the Portal.

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## **1.6 Marine Transportation**

Marine transportation data includes navigation data which represents areas or zones designated for certain types of vessel traffic, routes, or activities, maps depicting commercial traffic by vessel type, and spatial dataset representing proposed areas and studies (e.g., Port Access Route Study (PARS) areas).

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## **Navigation**

### Current status

Navigation data represented on the Portal are derived from different sources and are reviewed and updated separately:

- Anchorages – both officially designated and informally-used areas
- Pilot boarding areas – both officially designated and informally-used areas
- Safety and security zones – permanent and conditional zones
- Ocean disposal sites - need to be improved/updated based on federal data holdings
- Navigation corridors and traffic lanes – static, almost never change

In 2020, a new layer representing congressionally authorized navigation channels from the ACOE was added.

#### Update schedule

Navigation data should be updated as changes to areas are made and the theme should be reviewed every 2 years. Exceptions may exist for ocean disposal sites, which may need to be updated when new actions are made final.

#### Dependencies

NOAA OCM provides navigation data derived from NOAA nautical navigational charts and other sources. The USCG, NOAA, ACOE, EPA, and various industry groups also provide different types of navigational data and information, including:

- Anchorages – designated areas from USCG and NOAA, supplemented by industry and USCG knowledge of informally-used areas
- Pilot boarding areas - designated areas from USCG and NOAA, supplemented by industry and USCG knowledge of informally used areas
- Safety and security zones - USCG
- Ocean disposal sites – ACOE and EPA
- Navigation corridors and traffic lanes – USCG and NOAA
- Navigation channels - ACOE

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### ***Vessel Traffic***

#### Current status

The suite of AIS data products on the Portal include annual and monthly vessel transits for all vessels and a number of vessel types (e.g., fishing vessels, pleasure-craft), and a slider tool to visualize the monthly data. In collaboration with the Marine Cadastre, these data products were updated in 2020 and now include data from 2015-2019.

#### Update schedule

Vessel traffic data should be updated annually. Updates should be initiated as soon as possible after the close of a calendar year in order for updates to be published by the middle of the following year.

#### Dependencies

The [Marine Cadastre](#) obtains vessel traffic (AIS) data from the USCG and processes it for regional and other partners to use. Adequate processing, QA/QC, and advice on the appropriate mapping

of AIS codes are important for efficiently visualizing and displaying vessel-specific products on the Portal. Once processed and QA/QC'd AIS data are received, updates can be published in 3-6 months (including expert and industry review).

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### ***Proposed areas and studies***

#### Current status

In 2020, several active Port Access Route Study (PARS) areas were added to the Portal, including the completed MA/RI PARS boundary, the ongoing Northern New York Bight PARS boundary, and the boundaries of proposed fairways associated with the Atlantic Coast PARS.

Also in 2020, the Portal added a layer representing a the Isles of Shoals North Dredged Materials Disposal Site proposed by the EPA.

These maps included relevant links to agency documents, public comment notices, and other deadlines associated with these areas/studies.

#### Update schedule

The Portal will continue to present data and information relevant to active and completed areas and studies recommended by the USCG, ACOE, EPA, and others.

#### Dependencies

The Portal obtains data and information about proposed areas and studies from the USCG, ACOE, EPA, and others.

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### ***Marine Transportation Data Stakeholder Review and Input***

Key stakeholders for review and input on Marine Transportation data include USCG, DOT, DOD, NOAA, ACOE, states, industry groups, port operator groups, and safety and security forums in the region. The Portal Working Group will also obtain broader stakeholder input via workshops and conferences on changes to the overall presentation of the data on the Portal.

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## **1.7 National Security**

National security data on the Portal include areas designated for various defense purposes and uses.

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### ***National Security Data***

#### Current status

National Security data were updated via the Marine Cadastre in 2018. The Portal represents danger zones, restricted areas, submarine transit lanes, and warning areas; military installation locations; military range complexes; testing and training areas; and OPAREA boundaries.

#### Update schedule

National Security data typically do not change and require infrequent reviews and updates. The Portal Working Group obtains updated National Security data products via Marine Cadastre web services. Data will be reviewed and checked by the Portal Working Group every 5 years.

#### Dependencies

The Department of Defense is the source of National Security data layers.

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### ***National Security Data Stakeholder Review and Input***

Key stakeholders for National security data review and input include DOD and USCG. The Portal Working Group will also obtain broader stakeholder input via workshops or conferences on changes to the overall presentation of the data on the Portal.

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## **1.8 Recreation**

Portal data represents several recreational activities including boating, whale watching, and SCUBA diving. Additional layers represent recreational areas and facilities. Data derived from Coastal Use Surveys depict recreational activities between 2012-2015.

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### ***Boating***

#### Current status

Recreational boating density and recreational boating routes were updated in 2013. Distance sailing routes were updated in 2015.

#### Update schedule

Boating data should be updated every 3-5 years.

#### Dependencies

In the past, boating density and routes data relied on surveys of boaters. There is an opportunity now, with the growth in AIS on recreational vessels, to derive maps of recreational boating density using automatic tracking data instead. For example, the 2015 and 2016 vessel transit count data currently on the Portal include categories for “Pleasure craft - Sailing vessel”.

To determine whether available AIS data would generate adequate representations of recreational boating patterns, there is an opportunity to collaborate with the recreational boating

industry to review the existing data on the Portal from the boating survey along with newer AIS-derived data, and to consider ways to obtain additional information directly from boaters.

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## ***Whale watching***

### Current status

Commercial whale watching areas data were developed in 2015. In 2020, updates to existing whale watching data products were developed in collaboration with whale watch operators by validating and updating the existing layer with whale watching vessel activity data derived from Automatic Identification System (AIS) databases. A companion layer that shows the locations of and provides contact information for major operators in the region will also be developed. Whale watch operators were engaged via webinar to review and provide input on the new draft maps.

### Update schedule

Updated whale watching activity data will be released in early 2021. Whale watching data should be updated every 3-5 years.

### Dependencies

Commercial whale watching data can be obtained via input and revisions to the existing data from whale watch operators, and/or by identifying whale watch vessels in AIS data to map whale watching areas. Convening whale watch operators to review maps of existing areas along with draft maps of whale watch vessel tracks derived from AIS is an efficient approach. However, several limitations of AIS data for mapping whale watching activity were identified through the 2020 webinars:

- Some whale watching vessels are <65ft and thus not represented in the data - individual GPS track would need to be obtained and integrated
- Fewer vessels are represented in 2015 AIS data vs. 2019 AIS data indicating increase in AIS use over time rather than changes in activity
- AIS data show other activities that these vessels may undertake such as fishing trips, lighthouse tours, and ferrying activities that are difficult to remove from the data in an objective way
- Some participants expressed concern about showing precise locations/vessel tracks on public maps

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## ***SCUBA***

### Current status

Recreational SCUBA diving areas data were developed in 2015. In 2020, diving stakeholders were convened to review the existing layer and provide input on potential updates. As a result, the existing layer will continue to represent SCUBA diving areas and new layer showing dive sites and links to dive reports for each site from REEF.org will be added to the Portal in 2021.

### Update schedule

SCUBA data should be updated every 3-5 years.

#### Dependencies

SCUBA stakeholders and industry groups should be convened periodically to review existing maps, add new areas, and revise data.

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#### **Recreation areas**

##### Current status

Boat launches, water trails, and coastal parks and reserves data were updated in 2017.

##### Update schedule

Recreation areas data should be updated every 3-5 years.

##### Dependencies

Recreation areas data comes from the states.

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#### **Recreation Data Stakeholder Review and Input**

Key stakeholders for Recreation data review and input include the states, recreational boating industry groups, whale watching operators, SCUBA divers and industry groups, and other recreation stakeholder groups (e.g., Surfrider Foundation).

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### **1.9 Restoration**

Restoration data on the Portal includes the locations of potential restoration projects identified by the NROC Restoration Subcommittee, which includes participating representatives from ACOE, NOAA, USFWS, EPA, states and Tribes.

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#### **Restoration Data**

##### Current status

Potential restoration projects data products are updated according to availability and interest of the NROC Restoration Subcommittee. Updates will include the addition of completed restoration projects from participating agencies.

##### Update schedule

Restoration data should be updated every 2 years, or as often as the NROC Restoration Subcommittee requests.

## Dependencies

Restoration data displayed on the Portal is currently collected and coordinated by the NROC Restoration Subcommittee, which is led by state and Federal co-chairs. Members include the states, ACOE, EPA, NOAA Fisheries, USFWS, and other restoration partners and stakeholders. Once the NROC Restoration Subcommittee provides data to the Portal Working Group, it can be integrated in 3-6 months, depending on the length of the stakeholder and expert review process.

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## ***Restoration Data Stakeholder Review and Input***

Key Restoration data stakeholders include states, ACOE, EPA, NOAA Fisheries, US Fish & Wildlife Service, and other restoration partners and stakeholders, all of which are presently coordinated via the NROC Restoration Subcommittee. The Portal Working Group will also obtain broader stakeholder input via workshops and conferences on changes to the overall presentation of the data on the Portal.

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## **1.10 Water Quality**

The Portal displays water quality datasets that depict no discharge zones, impaired waters designations, and locations of wastewater discharges.

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### ***No Discharge Zones***

#### Current status

No discharge zones were updated in 2016.

#### Update schedule

Water quality datasets should be reviewed for updates every 2 years.

#### Dependencies

No discharge zones data are hosted by the Portal, and so EPA and the states should notify the Portal Working Group when updates to those data are available for integration.

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### ***Impaired Waters and Wastewater Discharges***

#### Current status

Wastewater discharges were updated between 2014-2016. Impaired waters will be updated in early 2021 and will leverage the latest EPA ATTAINS (Assessment, Total Maximum Daily Load (TMDL) Tracking and Implementation System) database and web services.

#### Update schedule

The Portal Working Group obtains updated Impaired waters and Wastewater discharges data products when EPA pushes updates to its web services.

#### Dependencies

Impaired waters and Wastewater discharges data layers are hosted and maintained by EPA.

---

### ***Water Quality Data Stakeholder Review and Input***

Review of Water Quality data is coordinated by the US EPA. The Portal Working Group will also obtain broader stakeholder input via workshops and conferences on changes to the overall presentation of the data on the Portal.

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## **1.11 Bathymetry**

Bathymetry data on the Portal is housed on a “resource page”, which is a dedicated page of various resources on a topic, with a catalog-like structure.

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### ***Bathymetry Data***

#### Current status

The Bathymetry Resources page will be updated in 2021. New bathymetry datasets for the Gulf of Maine were provided by UNH-CCOM in 2019.

As part of a project funded by the Massachusetts Clean Energy Center (MassCEC) in 2021, the Portal is collaborating with INSPIRE Environmental to explore integrating high-resolution seafloor habitat data (including bathymetry) into regional-scale data products for presentation on the Portal.

#### Update schedule

Bathymetry resources should be updated every 2 years.

#### Dependencies

The majority of bathymetry products are provided by NOAA NOS (e.g., individual bathymetry survey data products) or NOAA OCM (e.g., bathymetry composites of broader geographic areas). Some bathymetry products are provided directly by state or institution-based mapping programs.

High-resolution bathymetry data are being collected by states, universities, industry, and other groups as a result of BOEM offshore sand resources mapping efforts and offshore wind development.

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### ***Bathymetry Data Stakeholder Review and Input***

Key Bathymetry data stakeholders include states, BOEM, NOAA OCM, NOAA Office of Exploration, and some academic programs (e.g., UNH-CCOM), as well as some offshore project proponents, all of which are presently coordinated via the NROC Habitat Classification and Ocean Mapping Subcommittee.

As part of the MassCEC project, NROC will convene a Seafloor Habitat Data Working Group in 2021 to obtain expert and industry input on several aspects of data analysis, visualization, and use.

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## **1.12 Offshore Sand**

Data products related to offshore sand will include onshore sand resource needs (e.g., beach nourishment) and potential sand borrow sites.

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### ***Offshore Sand Data***

#### Current status

A layer depicting BOEM Aliquots with offshore sand resources was added to the Portal in 2019. There is also some information about seafloor substrate type under [Physical habitat](#), but these data were not necessarily generated with the intention that they would be used to characterize offshore sand resources.

#### Update schedule

To be determined, based on data products developed and dependencies.

#### Dependencies

States and ACOE generate information about onshore sand resource needs. BOEM and the states are collecting seafloor data that could be used to generate data products for potential sand borrow sites.

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## **1.13 Physical Oceanography**

Data products related to physical oceanography include the locations of offshore ocean observing buoys, annual offshore wind speed, and North Atlantic Coast Comprehensive Study (NACCS) storm and flood risk.

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### ***Physical Oceanography Data***

### Current status

Updates to the locations of ocean observing buoys and monitoring stations will be updated in early 2021.

The annual offshore wind speed data layer was updated in 2019.

NACCS data were added to the Portal in 2020 and represent the results of an ACOE study and analysis conducted in 2017. Layers include tropical storm peak water levels, 100-year return period water levels, 100-year return period wave heights.

### Update schedule

Ocean observing buoys and monitoring stations data should be updated every 2 years.

Offshore wind speed and other physical oceanography data will be updated as new data and information are provided by NERACOOS or other partners.

### Dependencies

Physical oceanography data are provided by NERACOOS, ACOE, NREL, and other partners. The location of ocean observing buoys and monitoring stations is provided by NERACOOS and MARACOOS.

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## **1.14 Administrative and Other Contextual Data**

Administrative datasets on the Portal include state and federal political boundaries, and regulatory and management boundaries, some of which may be periodically revised or adjusted. Other contextual data such as the locations of ocean observing buoys or other monitoring stations, and coastal demographic and economic data are also included.

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### ***Administrative Data***

#### Current status

##### Political boundaries

- Submerged Lands Act Boundary (BOEM)
- 200 NM EEZ and Maritime Boundaries (NOAA)
- 12 NM Territorial Sea (NOAA)
- States
- Counties

##### Regulatory and management boundaries

- BOEM OCS Lease Blocks (BOEM)
- Federal Consistency Geographic Location Descriptions (NOAA)
- US Coast Guard Districts and Sectors
- Stellwagen Bank National Marine Sanctuary (NOAA)
- USFWS Coastal Barrier Resource System
- Northeast Canyons and Seamounts Marine National Monument

- 
- Others, described in various ocean data themes (e.g., [fishery management areas](#), [anchorages](#), [disposal sites](#), [energy programs or leases](#))

Most layers were updated in 2016. The 12nm territorial sea boundary and Geographic Location Descriptions were updated in 2018.

#### Update schedule

Political boundaries should be reviewed every 5 years, but these are not expected to change.

Regulatory and management boundaries should be reviewed and updated every 2 years.

#### Dependencies

Several administrative boundary data layers are maintained and served by NOAA through the Marine Cadastre. Others are maintained and served by agencies (e.g., BOEM maintains and hosts OCS lease block boundaries and the Submerged Lands Act boundary). New England counties, states and their offshore boundaries, and monument and sanctuary boundaries are served by the Portal.

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### ***Other Contextual Data***

#### Current status

Coastal demographic and economic data were updated in 2017. The coastal demographic and economic data represent conditions in the early 2010s.

#### Update schedule

Coastal demographic and economic data should be updated every decade and could be updated to more broadly represent regional Blue Economy metrics.

#### Dependencies

Demographic and economic layers were generated as part of the Northeast Ocean Plan baseline assessment, and no updates are planned. The US Census and NOAA ENOW may represent a long-term source of data for this category.

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### ***Proposed Actions and Public Notices***

#### Current status

In 2020, the Portal supported agency processes by linking to active notices of proposed actions, public comment periods, and other relevant issues noticed in the Federal Register. Map galleries were developed to collect maps and data relevant to current issues, including proposed actions. Examples include:

- US EPA designation of the Isles of Shoals North Ocean Dredged Materials Disposal Site
- US Coast Guard Port Access Route Studies – Northern New York Bight, Proposed Shipping Fairways
- New England Fishery Management Council (NEFMC) actions, including Habitat Research Areas and the Deep Sea Coral Amendment

#### Update schedule

In early 2021 the Portal will add links to active public notices and a layer representing the locations for projects with active public notices issued by the ACOE.

The Portal will continue to support agency processes by including maps and data relevant to current issues as they arise.

#### Dependencies

The Portal relies on agencies and groups (EPA, USCG, ACOE, NEFMC) to provide spatial and information for inclusion on the Portal.

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## 2 Application Development

The Portal is comprised of several individual applications that together perform the key functions of the site. Application development is needed to maintain the existing functions, as well as to enhance functionality or provide new capabilities or new tools, occasionally associated with new or updated datasets.

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### ***Data Explorer***

The Data Explorer is a standalone application containing the entire catalog of data on the Portal, organized primarily by ocean data theme. The Data Explorer provides a basic GIS interface (e.g., transparency sliders, drag-and-drop ordering of layers, print function, etc.) and a number of customized widgets that allow users to discover, visualize, and interact with Portal data. The Data Explorer must be compatible with popular browsers (Chrome, Firefox, Internet Explorer, Edge, and Safari) and should be tested and updated as required when new browsers or major updates to the Explorer itself are released. Workflow improvements, identified by the stakeholder community or the Portal Working Group, are made to enhance Portal user experience.

The Data Explorer may also require updates and enhancements, including the development of new tools when new datasets are introduced. For example, addition of the Communities at Sea required the addition of a new widget to help users navigate all of the related datasets. These tools enhance user experience and provide additional capabilities for

analyzing/manipulating/interpreting data live on the Portal. Many of these tools and functions are suggested by users of the Portal during trainings, workshops, conferences, or other outreach.

Some examples include:

Time-slider tool: This tool was added in 2019 and allows the user to toggle through (or animate) a time series of data (e.g., months, seasons, or years). New monthly AIS data are visualized with this tool. A time-slider was also applied to new monthly density products for tagged loggerhead sea turtles.

Threshold tool: A threshold tool would function like a time-slider tool, but would toggle through classifications of the data (e.g., areas of “high” “medium” “low” vessel traffic or marine life abundance), or even classifications of the data through time (e.g., areas of “high” vessel traffic for each month of the year).

Linear measurement tool: This tool was added in 2019 and simply allows the user to measure distance on the Data Explorer map, in a number of selectable units (e.g., miles, kilometers, feet).

Enter coordinates or upload layers: Users have previously requested a tool that allows entering coordinates in order to plot user-defined points or shapes on the Data Explorer map, so as to view them with other Portal data layers. Development of this tool began in late 2019, and may be released in 2021, pending further review.

Extract by polygon: An extract-by-polygon tool would allow users to draw a shape on a custom map and generate a summary or report of all of the data layers presently shown in that area. For example, a user might draw a shape on an annual vessel traffic map to determine the total number of trips in that shape.

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### ***Theme maps***

The Theme maps are one of the most common ways that Portal users view and access data. Theme maps roughly correspond to the ocean data categories described in Sections 1.1 – 1.13. Each theme map contains one or more subthemes, numerous datasets, custom legends and symbology, layer information for each dataset, and an “About This Map” narrative.

Potential work on Theme maps could include:

1. Converting them to use the Data Explorer application instead of a unique Theme map application. Each map would still contain the same set of pre-selected data layers that would load automatically when a user selected a theme. Users would then have access to the same maps and data, but with the additional functions and tools of the Data Explorer. However, some of the more complex themes, such as Marine Life and Habitat, would require additional considerations for how to preserve/replicate the user experience of the Theme maps in a Data Explorer application.
2. Updating the existing code so that each individual theme is a separate Javascript file.
3. A combination of #1 and #2.

Any of these options would, over the long-term, reduce programming and maintenance costs. Option #3 would accommodate Theme maps for large and complex themes like Marine Life and Habitat, while allowing Data Explorer applications to take the place of smaller and simpler themes, like Restoration, for example.

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### ***Other Application Development Tasks***

The Portal Working Group will consider other development tasks as they arise. For example, in 2020, the Portal developed limited support for feature services, which could be expanded in 2021. There may also be a future need to add support for additional data download file types or export options in order to broaden data accessibility.

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## **3 Maintenance of Web/IT Infrastructure**

The Portal relies on a suite of components whose individual function and maintenance is critical to Portal performance and reliability. Collectively these components are referred to as the Portal information technology infrastructure and include the website, the content management system software (Wordpress), the three-tiered system of production, staging, and development versions of the site, the production and development servers that house the data and web services hosted by the Portal, and all of the mapping software that controls the majority of the web-mapping functions of the site. Updates to this system are made annually. Updates in 2020 included overall optimization of site content, especially the Data Explorer, to decrease load times and improve efficiency.

The Portal's information technology infrastructure needs to be maintained, updated, and supported. This includes annual registration of the URL and renewal of the security certificates, renewal of software licenses, and maintenance and operation of the website, all servers and services, and software. Specifically:

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### ***NortheastOceanData.org website***

The Portal Working Group will maintain the annual website/URL registration, content management system, and associated security certificates.

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### ***Production, staging, and development sites***

The Portal Working Group will maintain a three-tiered system to provide sandboxes for development and testing of new datasets and functionality before they are moved to production. The staging system also provides backup and redundancy of important content. Maintenance of this system includes oversight of the production, staging, and development environments, as well as software and hardware upgrades.

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### ***ArcGIS servers***

The Portal Working Group also maintains and updates the servers that host the development and production data services. Data servers are cloud-based storage obtained through Amazon Web Services. Server performance will continue to be frequently monitored to ensure that services are accessible and functional. The Portal Working Group also conducts monitoring of partner services to ensure that any dataset listed on the Portal is available to users and functioning properly.

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## **Software**

The Portal Working Group will maintain and update the software stack for each development tier, including ensuring all operating system updates are installed and determining whether custom mapping software updates should be applied.

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## **4 Communication and Engagement**

Communication and engagement are important aspects of the Portal effort to ensure that data priorities are informed by regional needs and that data products are reviewed and communicated in coordination with regional subject matter experts. In addition, it is critical that the Portal Working Group understand how the site and resources are being used, document these uses via case studies, and adapt site content and features to the extent practicable to users' needs. Both communication and engagement are forms of outreach with different degrees of interactivity. Communication and engagement tasks are responsive to particular events, groups, and individuals, and are also pre-planned.

### **4.1 Communication**

“Communication” refers to products developed and maintained by the Portal Working Group for consumption by users and other external entities. Communication products are informed by interactions and feedback received from users but are fairly one-sided in their release and implementation.

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## **Portal website**

The [northeastoceandata.org](http://northeastoceandata.org) website is the primary tool for delivering Portal data products and for communicating about the Portal. In addition to interactive maps and downloadable databases, the Portal contains static content (text and images) that must be kept current and accurate, and dynamic content such as news items that must be added or changed on an ongoing basis. We also expand, remove, and add new types of content; refine design and navigational elements; add new features; and make other changes as necessary to support regional ocean planning and improve the user experience on the Portal.

### Maintain, update, and enhance existing content and design

All pages on [northeastoceandata.org](http://northeastoceandata.org) are reviewed at least three times per year to ensure that content is accurate, up-to-date, consistent, and properly functioning. Additional updates are made between the scheduled reviews as needed to reflect new information.

### Maintain and report website usage statistics

Usage of the Portal is monitored and characterized to track changes in how many people are using the Portal, how they are using it, and relationships between external events (e.g., agency hearings, public meetings) and Portal usage. This information is used to help guide plans for the Portal website and for Portal communications and engagement.

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### **News items**

News items are posted for data releases and other major Portal changes or updates. The Portal Working Group aims to post at least one news item per month, depending on newsworthiness of Portal happenings.

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### **Map galleries**

In late 2019, map galleries replaced “featured maps” on the Portal home page. Map galleries give users quick access to sets of ready-made maps on current ocean management issues. Each gallery includes several map images with an interactive link to each map. As of late 2019, there are active map galleries for the NEFMC Proposed Deep-Sea Coral Amendment and for Offshore Wind, and an archived map gallery for the Isles of Shoals North Disposal Site.

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### **Video tutorials**

Brief video tutorials are created to demonstrate how to use key features of the Portal. Tutorials focus on major data themes and will also be developed for new or updated datasets, new tools, and new features.

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### **Email newsletter**

A quarterly email newsletter is sent to Portal email list subscribers to update them on major recent and upcoming data releases, new tools and webinars, and events or entities featuring the Portal, and events where work group members attend and present about the Portal. Logs are maintained to track when the emails are sent, the topics included, and the level of engagement by recipients (opens and click-throughs). Growth of the subscriber list is also tracked, and new ways to increase the subscriber list such as tweeting about the latest newsletter and improving the visibility of the subscribe button on the website, are explored.

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### **Fact sheet**

A one-two page fact sheet, with introductory material on Portal purpose, content, and usage information is reviewed and revised every 3 months. The fact sheet is:

- [posted on the website](#)
- included in the Media page/Press kit
- printed and used as a handout at events

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## **4.2 Engagement**

“Engagement” refers to opportunities for direct personal interaction with users, including virtual and in-person venues.

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### ***Case studies***

The Portal features case studies that provide examples of how people use the Portal for a variety of purposes including planning and management, education and research, and regulatory and siting uses. Case studies are co-developed with the user(s) or user groups.

Each case study includes narrative text, screenshots of relevant maps, photos, a featured quote, a downloadable pdf version, and links to related maps and information sources. The users highlighted in each case study are provided the opportunity to review a draft version before it is posted on Portal. The Portal Working Group is actively working on draft case studies on various topics (e.g., offshore energy development, national security) and featuring various user groups (e.g., agencies, industry, educators).

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### ***Workshops and trainings***

Workshops and trainings are targeted to broad audiences including educators, journalists, and sectors/industries that have not been as represented in the ocean planning community to-date. Workshops and trainings with ocean planning entities (e.g., state and federal agencies, tribes, ocean industries) also continue. Workshops are offered/targeted to particular stakeholder and industry groups.

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### ***Twitter***

The Portal has an active Twitter presence at @NEOceanData. The account has more than 2,000 followers, including journalists, NGOs, and other stakeholders. Tweets are released at least once a day during standard work hours on most work days and occasionally at other times.

Tweet content includes Portal news, datasets, maps, tutorials, case studies, and events announcements. The types of tweets and timing of tweets are varied to reach different audiences and to find which approaches are most effective.

The Portal twitter account follows/monitors other relevant accounts (e.g., partner entities, state and federal ocean agencies, collaborators, Portal users, individuals and groups with ocean data expertise, environmental journalists and local news outlets) and seek to engage via twitter.

Tweets amplify the role of the Portal and highlight uses of Portal data.

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### ***Webinars***

Webinars are held to develop a deeper level of engagement for existing Portal users and a greater awareness among people who are not yet familiar with the Portal. Webinars provide either a general overview of the Portal or focus on a component such as the Marine Life theme. Webinars may be targeted at key audiences such as educators, journalists, industry groups, or agency staff. The Portal Working Group collaborates with other organizations (e.g., professional associations or state agencies) to expand the reach and impact of webinars.

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### ***Conferences and meetings***

The Portal Working Group submits abstracts to present talks and/or participates as an exhibitor or contributing guest at relevant regional and national conferences and meetings. Examples include:

- NROC meetings
- New England Fishery Management Council meetings
- Port operator groups and safety forums
- Coastal GeoTools (biennial)
- American Wind Energy Association Offshore Windpower
- Coastal and Estuarine Research Federation (biennial)
- Northeast Arc Users Group
- Regional Association for Research in the Gulf of Maine
- National Marine Educators Association
- New England Ocean Sciences Education Collaborative
- Northeast Aquaculture Conference (biennial)
- Boston Sea Rovers
- Maine Fishermen's Forum

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## Appendix – 2020 In Review



# NORTHEAST OCEAN DATA 2020 IN REVIEW

## New Data Products & Updates



### COMMERCIAL FISHING

- ▶ Updates Sea Scallop Rotational Areas from NOAA Fisheries
- ▶ NEFMC Research Areas in the Great South Channel Habitat Management Area
- ▶ Clam Dredge Exemption Areas to the Great South Channel Habitat Management Area
- ▶ North Atlantic Right Whale Dynamic Management Areas
- ▶ Planning for commercial fishing data updates and improvements through NOAA Regional Ocean Data Sharing Initiative project with MARCO, RODA, and industry members



### ENERGY & INFRASTRUCTURE

- ▶ Updates to transmission lines and substations
- ▶ Updates to active renewable energy leases and BOEM Wind Planning Areas
- ▶ Coastal Virginia Offshore Wind research area boundary, transmission line, and turbine locations



### MARINE TRANSPORTATION

- ▶ 2018 & 2019 AIS commercial traffic data products for eight vessel categories
- ▶ Congressionally-authorized navigation channels
- ▶ Isles of Shoals North Disposal Site (Designated)
- ▶ Boundaries for five USCG Port Access Route Studies (PARS) and nine proposed Atlantic Coast shipping safety fairways



### MARINE LIFE & HABITAT

- ▶ NEFMC Northeast Fishing Effects Model: Sediment, Percent Seabed Habitat Disturbance, and Intrinsic Seabed Habitat Disturbance
- ▶ USGS Seafloor Stress and Sediment Mobility



### OTHER: ADMINISTRATIVE, RECREATION, PHYSICAL OCEANOGRAPHY

- ▶ Coastal Zone Management Act boundary
- ▶ Parks and Reserves
- ▶ North Atlantic Coast Comprehensive Study (NACCS) coastal storm and flood risk



### NEW FEATURES

- ▶ With BOEM, developed new Offshore Wind Projects page showing status of active leases and projects
- ▶ Revised navigation menu and map headers
- ▶ New basemaps and increased control of dynamic NOAA chart layers
- ▶ Auto-play button for time sliders
- ▶ Improved "Save Image As" map export template

## Events, Trainings, Uses

- ▶ Webinars with industry with MARCO & RODA for NOAA Regional Ocean Data Sharing Initiative project to update and improve commercial fisheries data products, January - October
- ▶ Movement information data products webinar (1/10)
- ▶ New England Fishery Management Council (1/28)
- ▶ Ocean Sciences Meeting, San Diego CA (2/20)
- ▶ Webinars with whale watching industry stakeholders (2/28) and scuba stakeholders (3/6)
- ▶ Boston Sea Rovers 66th Ocean Expo, Danvers MA (3/7)
- ▶ Maine Fishermen's Forum, Rockland ME (3/7)
- ▶ Data sharing for Atlantic Canada Marine Atlas Workshop (COIN Atlantic, 3/12)
- ▶ NROC Ocean Planning Committee webinars on ocean planning updates, state and NEFMC planning (4/2, 5/28)
- ▶ OneNOAA Science Seminar (6/23)
- ▶ Global Ocean Summit (6/26)
- ▶ Journal *Nature* highlights Portal as innovative data source for ocean management (6/26)
- ▶ Regional coordination of data platforms and offshore wind-related data collection on habitat, fisheries, and wildlife webinar (10/2)
- ▶ NROC Ocean Planning Committee webinar, Aquaculture Opportunity Areas (10/26)
- ▶ Boston Port Operators Group (11/17)
- ▶ Final webinar with whale watching industry stakeholders (11/18)
- ▶ Ongoing Portal trainings and demonstrations with various entities

### WEB PAGES & MAPS TO SUPPORT AGENCY PROPOSED ACTIONS & PUBLIC NOTICES

- ▶ BOEM offshore wind lease updates and project updates (year-round)
- ▶ NEFMC public comment period: Omnibus Deep-Sea Coral Amendment (January - February)
- ▶ BOEM public comment period, Vineyard Wind SEIS (June - July)
- ▶ USCG public comment period, ACPARS proposed fairways (June - August)
- ▶ USCG public comment period, Northern New York Bight PARS (July - August)
- ▶ EPA designation of Isles of Shoals North disposal site (10/26)

## Behind the Scenes



- ▶ Optimized Data Explorer performance
- ▶ Expanded external web service monitoring
- ▶ Improved support for web feature services