

[DRAFT]

MID-ATLANTIC REGIONAL

**OCEAN
ACTION
PLAN**



DRAFT Mid-Atlantic Regional Ocean Action Plan
July 2016

The draft Plan can be accessed here: www.boem.gov/Ocean-Action-Plan/.
The public is encouraged to provide input on the draft Plan by the deadline
of September 6, 2016.

Submit your comments by one of the following methods:

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[Mid-Atlantic Regional Planning Body Member Entities]

STATES

Delaware | Maryland | New Jersey | New York | Pennsylvania | Virginia

FEDERALLY RECOGNIZED TRIBES

Shinnecock Indian Nation | Pamunkey Indian Tribe

FEDERAL AGENCIES

Department of Agriculture (represented by the Natural Resources Conservation Service)

Department of Commerce (represented by the National Oceanic and Atmospheric Administration)

Department of Defense (represented by the U.S. Navy and the Joint Chiefs of Staff)

Department of Energy (represented by Energy Efficiency & Renewable Energy)

Department of Homeland Security (represented by the U.S. Coast Guard)

Department of the Interior (represented by the Bureau of Ocean Energy Management)

Department of Transportation (represented by the Maritime Administration)

Environmental Protection Agency

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL




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PHOTO AT LEFT: Delaware is the largest spawning area in the world for the Horseshoe Crab (*Limulus polyphemus*). Sometimes referred to as a “living fossil,” these animals have been around for some 450 million years.

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“We give thanks to all the waters of the world for quenching our thirst and providing us with strength. Water is Life. We know its power in many forms—waterfalls and rain, mists and streams, rivers and oceans. With one mind, we send greetings and thanks to the spirit of Water.”

- HAUDENOSAUNEE THANKSGIVING ADDRESS

[List of Acronyms and Shorthand]

Approach	Approach to the Mid-Atlantic Ocean Action Plan	NASCA	North American Submarine Cable Association
BOEM	Bureau of Ocean Energy Management	National Academies	National Academies of Sciences, Engineering, and Medicine
CZMA	Coastal Zone Management Act	NE RPB	Northeast Regional Planning Body
Data Portal	Mid-Atlantic Ocean Data Portal	NEPA	National Environmental Policy Act
DOD	Department of Defense	NHPA	National Historic Preservation Act
DOE	Department of Energy	NMFS	National Marine Fisheries Service
DOI	Department of the Interior	NOAA	National Oceanic and Atmospheric Administration
DOT	Department of Transportation	NOC	National Ocean Council
EA	Environmental Assessment	NOPP	National Oceanographic Partnership Program
EEZ	Exclusive Economic Zone	NPS	National Park Service
EIS	Environmental Impact Statement	OCS	Outer Continental Shelf
EPA	Environmental Protection Agency	OMDT	Ocean Mapping & Data Team
ERA	Ecologically Rich Area	PGIS	Participatory Geographic Information System
ESA	Endangered Species Act	Plan	Mid-Atlantic Regional Ocean Action Plan
ESPIS	Environmental Studies Program Information System	PME plan	Performance monitoring and evaluation plan
Framework	Mid-Atlantic Regional Ocean Planning Framework	Portal Team	Mid-Atlantic Ocean Data Portal Team
FWS	Fish and Wildlife Service	ROA	Regional Ocean Assessment
HUDES	Human Use Data Synthesis	RPB Charter	Charter for the Mid-Atlantic Regional Planning Body
MAFMC; Council	Mid-Atlantic Fishery Management Council	RPB	Mid-Atlantic Regional Planning Body
MARACOOS	Mid-Atlantic Regional Association Coastal Ocean Observing System	SHPO	State Historic Preservation Officer
MARAD	Maritime Administration	SLC	Stakeholder Liaison Committee
MARCO	Mid-Atlantic Regional Council on the Ocean	Task Force	Interagency Ocean Policy Task Force
MDAT	Marine Life Data and Analysis Team	THPO	Tribal Historic Preservation Officer
MMPA	Marine Mammal Protection Act	USACE	U.S. Army Corps of Engineers
Monitoring Network	Mid-Atlantic Ocean Acidification Monitoring Network	USCG	U.S. Coast Guard
MSA	Magnuson-Stevens Fishery Conservation and Management Act	USGS	U.S. Geological Survey

“In every outthrust headland, in every curving beach, in every grain of sand there is the story of the earth.”

~ RACHEL CARSON



Ocean Planning in the Mid-Atlantic

The Mid-Atlantic region, which stretches from New York to Virginia, is known for its sandy beaches, rich cultural and historical sites, vibrant coastal communities and major metropolitan cities. As defined by the Mid-Atlantic Regional Planning Body (RPB), the region includes ocean waters from Long Island to the Virginia/North Carolina border, and extends seaward out to 200 nautical miles. The ocean shapes the economy and the culture of the region, providing sand for beaches, transportation for goods, food for the table, and a place for rest, refreshment, and recreation.

Over 34 million people inhabit the Mid-Atlantic coastal counties, and that population is expected to grow another eight percent by 2020. The Mid-Atlantic coastal region serves as an economic engine for the nation: in 2010, the Mid-Atlantic contributed \$2 trillion or 14 percent of the United States' Gross Domestic Product. The region hosts the world's largest naval base in Norfolk, Virginia, and the nation's largest city and the east coast's largest seaport by tonnage in New York, New York.¹ The Mid-Atlantic's ocean environment provides economic and social benefits to communities, the region, and the Nation, including fishing, transportation, sand and gravel mining, national security activities, telecommunications, scientific research, tourism, recreation, and more.

The Atlantic Ocean and coastal waters have also provided sustenance, spirituality, and solace for generations of human inhabitants, and continue to offer valuable attributes to millions of Mid-Atlantic

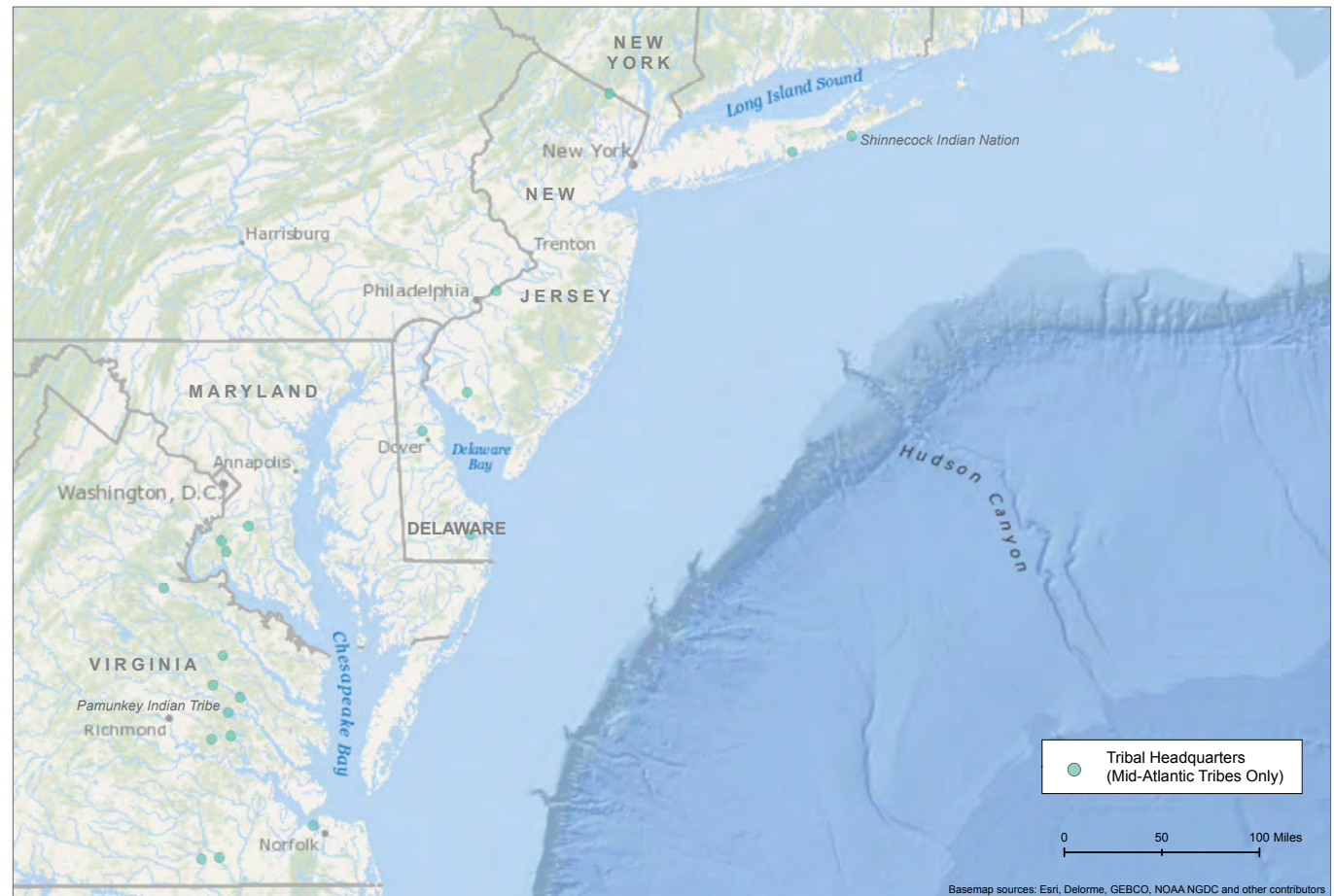
residents and visitors. From the first Native Americans to the coastal residents of today to the generations seventh hence, our connection to the ocean is deeper than the sand, water, wind, and waves that can be experienced with our five senses; it ties together our history, our cultures, and our stories. Federal agencies and states that have collaborated with the Tribes in the development of this Plan acknowledge the importance of historical traditional values, including the sovereignty of American Indian Tribes to exercise their hunting and fishing rights and maintain their connection to the ocean. Ongoing implementation of the Plan will strive to improve the region's understanding and use of Traditional Knowledge along with other cultural resources and values, and incorporate such knowledge and values into the ocean planning process.

There are challenges ahead. The Mid-Atlantic region is likely to experience significant changes over the coming years as our use of ocean space and

Through Mid-Atlantic regional ocean planning, Federal agencies, States, Tribes, and the Mid-Atlantic Fishery Management Council work together with stakeholders to improve management of our treasured ocean.

Benefits of Mid-Atlantic regional ocean planning include:

- Best available data used to inform and improve decision making
- Stakeholders proactively engaged earlier in decision making
- A venue for Federal agencies, States, Tribes, and the Mid-Atlantic Fishery Management Council to work together with stakeholders to address ocean issues and inform decision making under existing authorities.



Mid-Atlantic region.

resources increases and the effects of climate change impact the region’s marine waters. For example, commercial shipping is increasing and navigation routes are changing in response to increasing demand for larger ships to transport goods. Commercial-scale development of offshore renewable energy is poised to occur over the next decade. There is emerging interest in exploring possible use of carbon capture and storage technology to store carbon dioxide in offshore

subsea geologic formations, a research area that is likely to prompt many questions and require careful stakeholder engagement and coordination across jurisdictions. Coastal restoration and shoreline protection projects have significantly increased demand for marine sand and gravel. Fishermen, who make their living and feed the Nation from the ocean’s bounty, face increasing competition for access to fishing grounds. In addition to these challenges, ocean conditions are changing with

climate change, including increased ocean acidification, sea-level rise and warming water temperatures.

Planning ahead for these changes will help the region face them proactively and effectively. In recent years, there has been a growing effort to manage human interactions with complex marine systems using a more holistic and coordinated approach. This often necessitates shifting toward management on regional ecosystem scales. This shift is supported by scientific advancements that allow for unprecedented opportunities to improve our understanding and management of the ocean.

For our domestic oceans, the management task is complicated by the fact that there is no single entity responsible for comprehensive, integrated stewardship. Jurisdiction is distributed among numerous agencies at the Federal, State, and Tribal levels, and includes hundreds of domestic policies, laws, and regulations. Challenges and gaps arise from the complexity and structure of this system. The distributed responsibility is a result of how those authorities were created over the course of many decades, in response to evolving challenges and opportunities. This distributed system poses significant challenges to managers striving for efficient, informed, and coordinated decision making; challenges that have the potential to grow in severity as society seeks to accommodate new and expanding ocean uses while simultaneously protecting the health and resilience of a rapidly changing natural system.

These challenges, as well as recommended responses, were identified by the bi-partisan U.S. Commission on Ocean Policy in its 2004 report *Ocean Blueprint for the 21st Century*.² The U.S. Commis-



Sailing is a popular activity in the Mid-Atlantic, as seen here off the coast of Montauk, New York. © MICHAEL REGA

sion's recommendations included calls to establish a national ocean policy and to place greater emphasis on regional approaches to ocean management that bring together the various jurisdictions to advance ocean health and sustainable ocean use. In response, efforts to stimulate new and enhance existing regional approaches have spanned numerous Congresses and the Presidential Administrations of both George W. Bush and Barack H. Obama. These bi-partisan efforts recognized the value of enhanced coordination and collaboration to address our ocean challenges and opportunities.

In 2009, the Interagency Ocean Policy Task Force (Task Force) was established to develop [recommendations](#)³ for the nation's first national ocean policy. The recommendations of the Task Force were formally adopted in 2010 through Executive Order

13547, to establish a National Ocean Policy for the *Stewardship of the Ocean, Our Coasts, and the Great Lakes*.⁴ The Executive Order created the National Ocean Council (NOC) to implement the Task Force recommendations and to ensure Federal agency participation in any regional ocean planning processes that the regions elected to pursue.

One of the first accomplishments of the NOC was to publish the *National Ocean Policy Implementation Plan*⁵ in 2013. This Implementation Plan provides guidance not only for the regional planning process, but also for the National Ocean Policy as a whole. It outlines actions that can be taken by Federal agencies to improve the ocean economy, safety, security, and resilience, and to empower local communities. In July 2013, the NOC also published The *Marine Planning Handbook*⁶ to provide information to regions about developing regional planning bodies and marine plans, supplementing the information in the Implementation Plan. The handbook recommends a process for substantive stakeholder engagement, data acquisition and sharing, enhanced coordination, and reaching regional agreement on the issues that should be addressed.

The impetus behind regional ocean planning in the Mid-Atlantic was to improve communication and collaboration among Federal, State, and Tribal management entities at the Mid-Atlantic regional scale and facilitate the transition to a more systems-based approach to ocean management. Principles for moving the process forward include: (1) ecosystem-based management, which integrates ecological, social, economic, commercial, health, and security goals, recognizing that humans are key components of ecosystems and that healthy ecosystems are essential to human welfare, and

(2) adaptive management, which calls for routine reassessment of management actions to allow for better informed and improved future decisions.

Specifically, collaborative ocean planning in the Mid-Atlantic region helps to:

- Integrate relevant data from Federal agencies, States, Tribes, the Mid-Atlantic Fishery Management Council (MAFMC; Council), and stakeholders.
- Enhance communication and coordination among governmental entities in the region.
- Identify and avoid duplication of effort among governmental entities.
- Enhance Mid-Atlantic stakeholder engagement in ocean management to bolster information sharing, diversify perspectives, and increase buy-in.
- Plan and provide for existing and emerging ocean uses and improving ecosystem health.
- Increase adaptability to changing conditions, including new technologies, new uses of the ocean, ocean science and research, changing environmental conditions, and evolving societal priorities.

The regional planning process and this Mid-Atlantic Regional Ocean Action Plan (Plan) build on a significant body of work by the Mid-Atlantic States. Acting both individually and collectively through the *Mid-Atlantic Regional Council on the Ocean (MARCO)*,^{7,8} and other regional collaborations, the States have made and continue to make significant investments that support ocean and coastal management at State and regional scales, and continue to develop and apply knowledge, products,

and practices that address a wide range of management challenges.

Relevant examples of State-led research and planning efforts can be found throughout the region. These include:

- Efforts in New York include the *New York Offshore Atlantic Ocean Study*,⁹ a comprehensive study released in 2013 that assesses the physical, biological, wildlife, and geographic characteristics of the ocean waters off of New York; *Our Waters, Our Communities, Our Future*,¹⁰ a 2009 report developed by State agencies that details opportunities to protect and enhance New York's shoreline waters through an ecosystem-based management approach to decision making within agencies' respective missions; and the *New York Draft Ocean Action Plan*,¹¹ a 10-year action plan focused on improving the health of ocean ecosystems and their capacity to provide sustainable benefits to the citizens of New York.
- New Jersey released *Ocean/Wind Power Ecological Baseline Studies*¹² in 2010, the compilation of a comprehensive 24-month ecological baseline study to fill data gaps for birds, sea turtles, marine mammals, and other natural resources and create spatial and temporal data to support analyses of distribution and usage.
- Virginia provided Coastal Zone Management funding in 2008–2010 to develop and launch the first regional ocean data portal. Virginia also funded three years of **marine mammal survey work**¹³ to augment Federal data and secured State and Federal funding to conduct **collaborative planning with fishermen for Virginia's offshore Wind Energy Area**.¹⁴

- In Maryland, agencies began planning for offshore wind energy development in 2009. State funds and work were subsequently directed towards meteorological, oceanographic, and ecological resource assessments, undertaken with ocean stakeholder engagement, to inform the siting and leasing process. Maryland has funded geological and geophysical surveys, wind resource assessments, aerial surveys for marine mammals, sea turtles, and birds, seafloor classification studies, and video and trawl surveys to assess marine communities and habitats. In addition, Maryland has engaged Federal support to develop *Baseline Wildlife Studies Offshore of Maryland*¹⁵ and the study *Determining Offshore Use by Marine Mammals and Ambient Noise Levels Using Passive Acoustic Monitoring*.¹⁶

These and numerous other contributions from Federal agencies, States, Tribes, MAFMC, academic institutions, marine industries, non-governmental organizations, and many others offer a strong foundation for regional ocean planning in the Mid-Atlantic. These efforts provide critical data resources that can inform regional ocean planning, and have helped to build the expertise and on the ground experience of managers and stakeholders alike. Taken together, the region's existing collaborative work and this Plan represent important steps toward a more common sense, better informed, coordinated, systems-based approach to managing ocean resources that sustain regional economic growth, environmental health, and the cultural and spiritual benefits of our ocean off of the Mid-Atlantic region.

Taken together, the region's existing collaborative work and this Plan represent important steps toward a more common sense approach to managing ocean resources that sustain regional economic growth, environmental health, and the cultural and spiritual benefits of our ocean off of the Mid-Atlantic region.

The Plan is adaptive to new information and changing conditions, and will be updated periodically as progress is made, lessons are learned, new activities are developed, and the region continues to advance its ocean management priorities.

1.1 ABOUT THIS DOCUMENT

This Plan is the first regional ocean plan of its kind in the Mid-Atlantic. The Plan was developed by the RPB (described below). It documents the planning process to date; the interjurisdictional coordination actions agreed upon by the RPB’s Federal, State, Tribal, and MAFMC member entities; data and information products intended to inform RPB member entities as they carry out their existing authorities; and it clarifies processes for ongoing

Plan implementation and RPB administration. In addition, the Plan presents best practices that describe how the Federal agencies will, to the extent practicable, use the Mid-Atlantic Ocean Data Portal (Data Portal) and related information to help inform decision making under existing authorities. The Plan is adaptive to new information and changing conditions, and will be updated periodically as progress is made, lessons are learned, new activities are developed, and the region continues to advance its ocean management priorities.



A crew member keeps watch aboard the NOAA ship Okeanos Explorer during a research cruise in the Mid-Atlantic. The Okeanos Explorer seeks to advance knowledge of largely unexplored ocean. © OKEANOS EXPLORER NORFOLK CANYON - NOAA / ART HOWARD

1.2 THE PLANNING PROCESS

This section provides an overview of the role of the RPB, key partners in the planning process, and stakeholder and Tribal engagement.

1.2.1 THE MID-ATLANTIC REGIONAL PLANNING BODY

After the establishment of the NOC in 2010, Federal agencies prepared for Mid-Atlantic regional ocean planning by assigning and convening representatives for the Mid-Atlantic region. Then the NOC conducted outreach to the Mid-Atlantic States and federally recognized Tribes to encourage them to participate in the regional planning process. As called for in the Task Force recommendations, a stakeholder workshop was convened in April 2013 to develop a common understanding about regional ocean planning, engage stakeholders in developing recommendations for the RPB, and foster dialogue and commitment among stakeholders and governmental entities in the Mid-Atlantic to advance collaboration on ocean planning.

During this workshop, sponsored by MARCO in collaboration with Federal agencies in the region, the RPB began its work.

The RPB is a collaboration of Federal, State, Tribal, and MAFMC representatives that:

1. Improves our understanding of how the ocean waters and resources of the Mid-Atlantic region are being used, managed, and conserved.
2. Provides a forum for identifying coordinated actions to address regionally-important ocean management challenges and opportunities.

3. Engages stakeholders and regional partners to ensure that the full breadth of perspectives is accounted for in ocean planning.

The RPB is led by three Co-Leads who are responsible for guiding and facilitating the overall planning process. During the development of this Plan, the three Co-Lead seats were held by the Department of the Interior's Bureau of Ocean Energy Management (BOEM; Federal Co-Lead), the State of Maryland (State Co-Lead), and the Shinnecock Indian Nation (Tribal Co-Lead). The role of the Co-Leads is not to make decisions regarding the planning work, but to guide and facilitate the process overall.

The RPB is governed by the *Charter for the Mid-Atlantic Regional Planning Body* (RPB Charter; Appendix 1) that outlines the RPB's purpose, participants, and a preliminary delineation of roles and responsibilities. As described in the RPB Charter, the RPB's mission is to:

“Implement and advance marine planning in the region by coordinating with stakeholders, scientific, business, and technical experts, and members of the public, to identify and address issues of importance to regional marine planning activities that affect the States of Delaware, Maryland, New Jersey, New York, Pennsylvania, and Virginia, and adjacent navigable waters of the United States.”

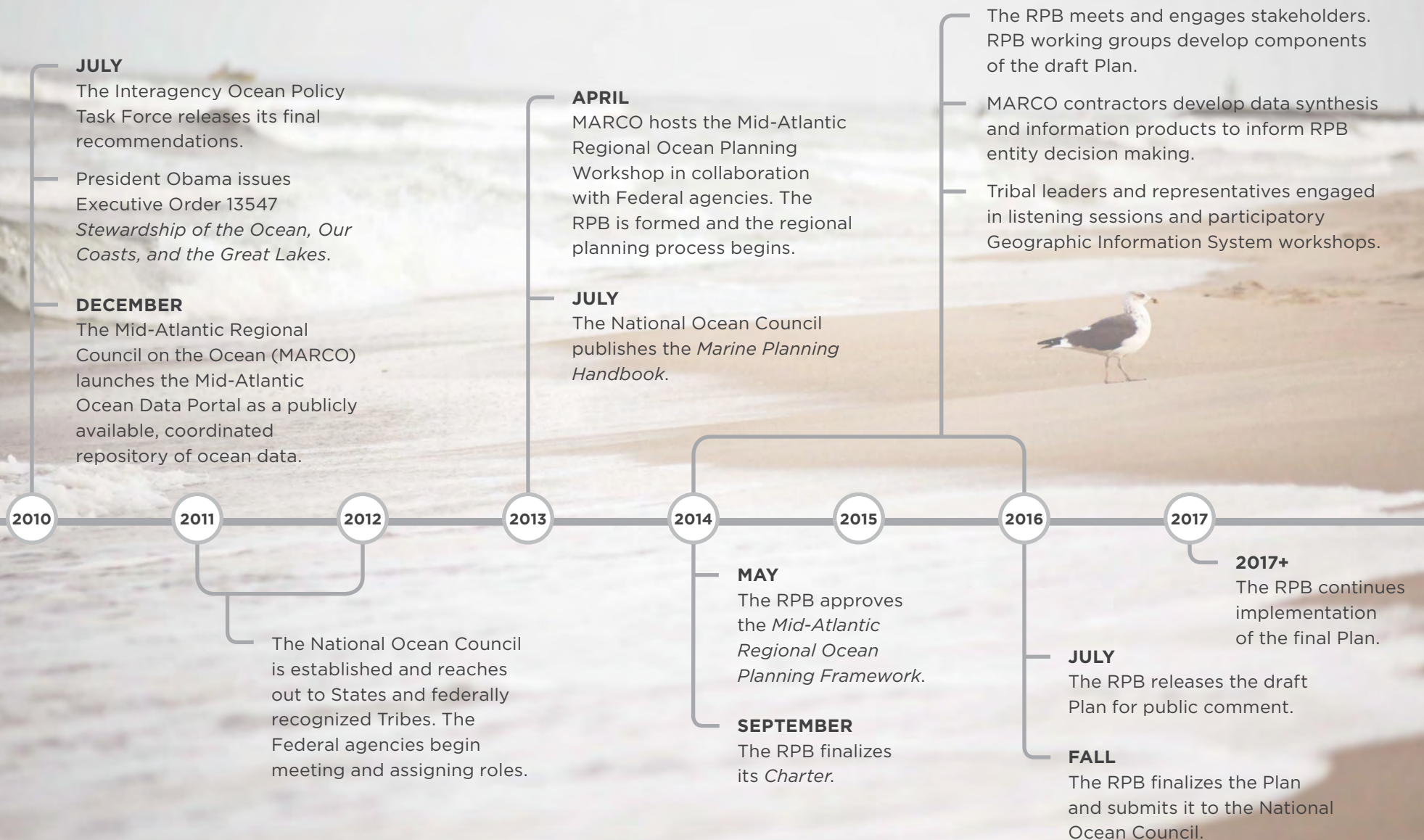
The RPB Charter explains that the RPB “is not a regulatory authority and has no independent legal authority to regulate or otherwise direct Federal, State, Tribal entities, local governments, or the MAFMC.” The goal of the regional planning process is to guide and align Federal and State activities, consistent with their existing authorities.¹⁷ As described in Executive Order 13547 and the RPB Charter:



Members of the Mid-Atlantic Regional Planning Body discuss interagency coordination during an RPB meeting in Baltimore, Maryland.

© ARLO HEMPHILL / MARCO

MAJOR EVENTS IN THE MID-ATLANTIC REGIONAL OCEAN PLANNING PROCESS



“The RPB is not a regulatory body and has no independent legal authority to regulate or otherwise direct Federal, State, Tribal entities, local governments, or the MAFMC. Agencies involved in this effort respectively administer a range of statutes, regulations, and authorized programs that provide a basis to implement regional marine planning. The process and non-binding decision making for regional marine planning will be carried out consistent with and under the authority of these existing statutes, regulations, and authorized programs.”

While regional marine planning cannot supersede existing laws and agency authorities, it is intended to provide a framework for application of existing laws and authorities. Marine planning is intended to guide and align Federal and State agency legal authority and decision making, and agencies will adhere to the plan and/or other products to the extent possible, consistent with their existing authorities.”

The RPB Charter further clarifies that decisions of the RPB are made through “discussion and agreement—general consensus—among the members.” This approach ensures that all members of the RPB have an equal voice as the group guides the process of regional ocean planning.

The regional planning process also supports the engagement of and coordination with Tribes to ensure that Tribal interests, lands, treaty and other reserved rights, and co-management agreements are appropriately considered and included in the Mid-Atlantic region.¹⁸ As described in the RPB Charter:

“The RPB structure acknowledges the sovereign status of Mid-Atlantic federally recognized American Indian Tribal Governments and recognizes the principle of government-to-government consultation.”

1.2.2 KEY PARTNERS IN THE REGIONAL PLANNING PROCESS

Mid-Atlantic regional ocean planning has benefitted greatly from the process and spirit of collaboration, and the RPB recognizes the important role partnerships play in leveraging resources, conducting stakeholder engagement, and enhancing technical capacity. To date, key partners have included MARCO and the Mid-Atlantic Ocean Data Portal Team (Portal Team), among others.

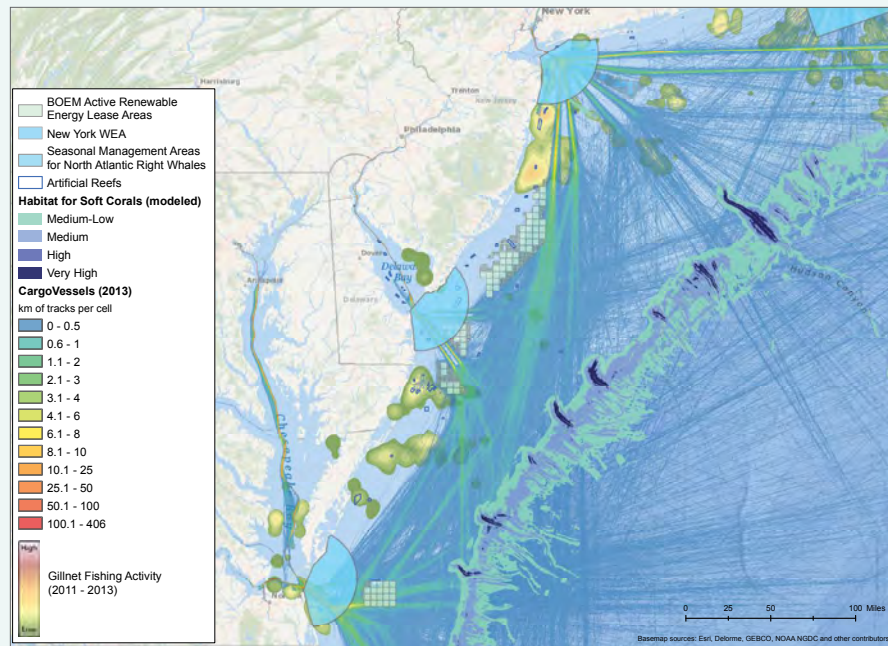
Established by the Governors of the five coastal Mid-Atlantic States in 2009 to enhance the vitality of the region’s ocean ecosystem and economy, MARCO is a partnership of Delaware, Maryland, New Jersey, New York, and Virginia. MARCO supported various aspects of the RPB’s work, including initiation of the regional ocean data portal and direction of its development through MARCO’s Ocean Mapping & Data Team, projects on data collection and synthesis, stakeholder and Tribal engagement, and communications support.

In close collaboration with MARCO and Federal agency partners, the Portal Team developed, launched, and maintains the [Data Portal](#).^{19, 20} The Data Portal is an online, publicly available toolkit and resource center that consolidates available data and enables regional ocean planners and ocean users to visualize and analyze ocean resources and human use information. The Data Portal includes a wide range of human use, environmental, socioeconomic, and regulatory data that provides baseline information as well as building blocks for more transparent, coordinated, and informed ocean management, information sharing, and stakeholder engagement. Input from stakeholders has been solicited throughout the process to inform development,

Mid-Atlantic regional ocean planning has benefitted greatly from the process and spirit of collaboration.

MID-ATLANTIC OCEAN DATA PORTAL

The Data Portal provides data and maps related to ocean resources and activities that are addressed by the Plan. This table provides an overview of the data and maps available through the Data Portal. They are organized by themes important to the region, as seen in the left-hand column. The right-hand column provides examples of data available in those categories (note: this is not an exhaustive list of data types). The Marine Planner function of the Data Portal allows the users to select and view each map individually or as multiple layers, vary the transparency to display the most critical features, and select and focus on geographic areas of particular interest. More detailed information about the Data Portal, capabilities of the Marine Planner function, and how it supports ocean planning is provided in Chapter Three.



Data Theme	Types of Data Available
Administrative	Marine jurisdictions, administrative boundaries, federal lease blocks
Fishing	Commercial and recreational fishing concentrations, artificial reef locations, fathom lines
Maritime	Aids to navigation, shipping data, anchorage areas, federal sand/gravel borrow areas, North Atlantic Right Whale management zones, submarine cable routes, disposal sites, port facility sites, shipwreck density
Recreation	Coastal recreation locations, recreational boating routes and destinations
Renewable Energy	Federal offshore wind planning areas, offshore wind lease areas, coastal energy facility locations, wind speeds
Security	Military danger zones/restricted areas, unexploded ordnance locations, Department of Defense operational areas
Marine Life	Benthic organism habitats, coldwater coral locations, essential fish habitats, seafloor topography, sediment grain size, submarine canyons, migratory fish, birds, sea turtles and marine mammals
Oceanography	Bathymetry, ocean fronts, sea surface temperature
Synthesis Products	Human use data synthesis products for five themes: Fishing, Maritime, Recreation, Renewable Energy, and Security (HUDS effort); synthesis products for marine mammals, seabirds, and fish (MDAT effort)

utility, and design of the Data Portal. Development and use of data products and information that is scientifically based and informed by stakeholders is an important foundation for regional ocean planning.

1.2.3 STAKEHOLDERS IN THE REGIONAL PLANNING PROCESS

Stakeholder and public engagement has been a cornerstone of the regional ocean planning process and will continue to be a critical component of Plan implementation, and future updates and revisions. Opportunities for engagement have included formal RPB decision making meetings, all of which have been open to the public and included public comment sessions, as well as separate stakeholder outreach events hosted by the RPB and MARCO. These additional events included stakeholder workshops and meetings, public webinars, and rounds of public listening sessions in each State at key junctures in the process.

The formal public RPB decision making meetings allowed RPB members to discuss, deliberate, and make decisions transparently while also interacting with and collecting input from the public. The webinars, workshops, meetings, and listening sessions allowed the RPB to share updates with a wider audience and solicit feedback from stakeholders. The RPB established a website, posted information and meeting materials, and provided ongoing opportunity for additional public comments throughout the process. In addition, MARCO leveraged their existing website to support the RPB by posting relevant information and materials.

MARCO also established and periodically engaged a Stakeholder Liaison Committee (SLC) to secure

regular input and strengthen communication with stakeholder groups. Members of the SLC represent a wide swath of ocean interests. In addition, MARCO carried out single-sector and multi-sector outreach by hosting webinars and conducting meetings in the field. Participatory Geographic Information Systems (PGIS) meetings were convened in each State to help fill recreational use data gaps, meetings with port and navigation interest groups were convened to review how vessel tracking data should be displayed, surveys were conducted to map recreational boating activity, and fishermen were asked to review [communities-at-sea data](#)²¹ that reflect fishing effort linked with fishing ports and types. Additional information about stakeholder participation in development of spatial data layers can be found in Appendix 2.

Stakeholder and public engagement has been a cornerstone of the regional ocean planning process and will continue to be a critical component of Plan implementation, and future updates and revisions.

SECTORS REPRESENTED ON THE MARCO STAKEHOLDER LIAISON COMMITTEE

Offshore wind energy
Marine science
Marine tourism
Environmental conservation
Ports
Shipping
Commercial fishing
Recreational fishing
Submarine cables
Marine navigation
Ocean recreation
Marine trades

TIMELINE OF MAJOR ENGAGEMENT EVENTS DURING THE DEVELOPMENT OF THE PLAN



APRIL 4-5, 2013

MARCO's Mid-Atlantic Regional Ocean Planning Workshop in Arlington, VA

AUGUST 1, 2013

RPB Public Webinar

SEPTEMBER 24-25, 2013

RPB Public Meeting in West Long Branch, NJ



FEBRUARY-APRIL 2014

RPB-hosted Public Listening Sessions in DE, MD, NJ, NY, VA



MAY 20-21, 2014

RPB Public Meeting in Baltimore, MD

OCTOBER 29, 2014

RPB Public Webinar



JANUARY 21-22, 2015

RPB Public Meeting
in New York, NY

JULY 13, 2015

MARCO-hosted
Webinar on Data
and Information
Synthesis Projects



SEPTEMBER 22-24, 2015

MARCO-hosted
Stakeholder Engagement
Workshop and
RPB Public Meeting
in Norfolk, VA



JULY 2016

MARCO-hosted
Open Houses in
DE, MD, NJ, NY, VA

MARCH 22-24, 2016

RPB Public Meeting
in Baltimore, MD

NOVEMBER 2014

MARCO-hosted
Public Listening
Sessions in DE, MD,
NJ, NY, VA

MAY 22, 2015

RPB Public
Webinar

AUGUST 2015

MARCO-hosted
Tribal Listening
Sessions in
VA and NY

JANUARY 29, 2016

MARCO Forum on Ocean
Assessment and Data Synthesis
Products in Dewey Beach, DE

DECEMBER 8, 2015

RPB Public Webinar



Participants in a Tribal listening session on ocean planning held in Richmond, Virginia in August of 2015. The session was hosted by the Mid-Atlantic Regional Council on the Ocean (MARCO). © SARAH BOWMAN, ECOLOGY & ENVIRONMENT

1.2.4 TRIBAL ENGAGEMENT IN THE REGIONAL PLANNING PROCESS

During the development of this plan, MARCO, in collaboration with the Shinnecock Indian Nation, conducted extensive outreach to federally and State recognized Tribes and State Tribal leadership boards and commissions. To effectively engage Tribal leaders and representatives, the outreach and data collection process consisted of two listening sessions and three PGIS workshops that took place from New York to Virginia. The listening sessions allowed for an open dialogue among the Tribal representatives, MARCO staff, and the Portal Team, and aided in establishing a working relationship among parties with the goal of developing a set of spatial data layers. Data collection included gathering information on localized Tribal attributes such as traditional homelands and current headquarters, along with recorded stories from Tribes providing background information on the spatial data collected for inclusion in the storytelling portion of the Data Portal. Outcomes of the outreach and data collection process included:

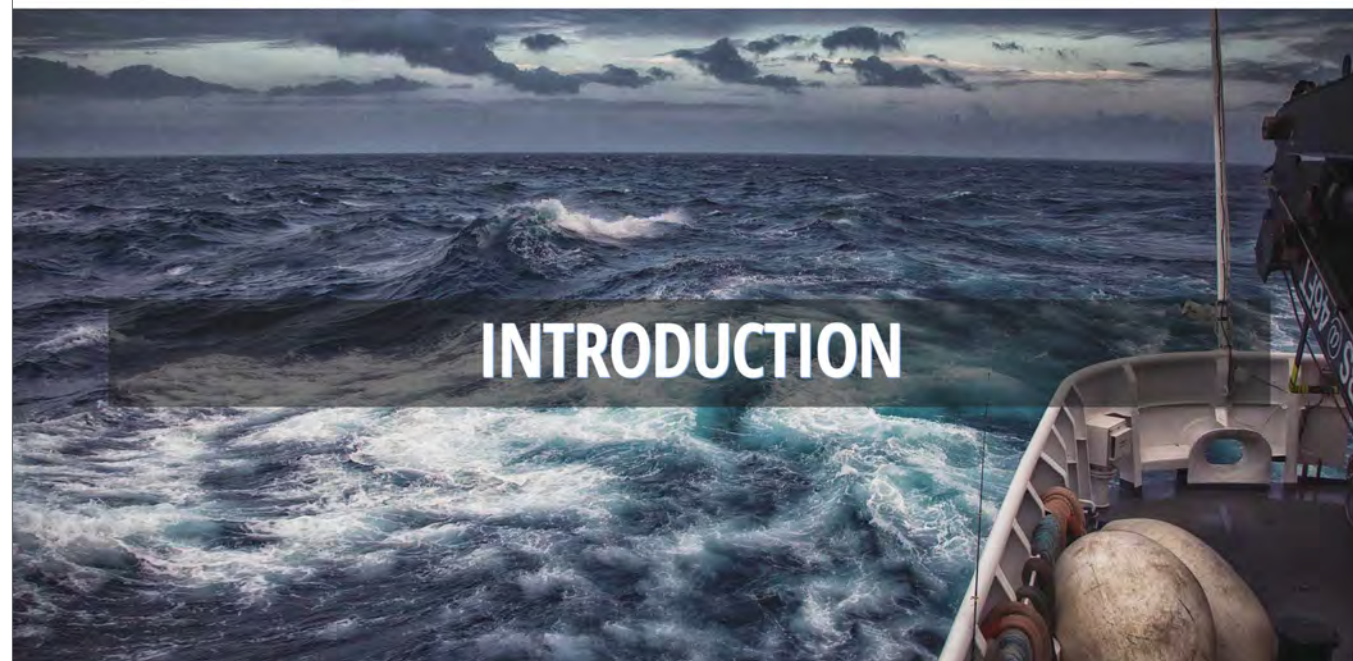
- Building a foundational relationship with Tribes.
- Engaging Tribes in the current ocean planning process.
- Soliciting Tribal input on ocean planning in the Mid-Atlantic.
- Creating initial Tribal spatial data layers.
- Providing a spatial data tool for Tribes.

Data collection is an ongoing process and several Tribal leaders continue to provide assistance with further data collection efforts, both for Tribal use and for possible inclusion in the Data Portal.

1.3 REGIONAL OCEAN ASSESSMENT

To address a changing seascape, the RPB sought to develop a shared understanding of the current state of the region’s ocean resources. The development of a [Mid-Atlantic Regional Ocean Assessment \(ROA\)](#)²² was supported by MARCO to serve as a snapshot and information resource for the regional ocean planning process. The ROA provides an engaging and reader-friendly distillation of information on the region’s ocean resources and selected topics in ocean planning for decision-makers, stakeholders, and the broader public. The ROA brings together and summarizes best available information on the ocean ecosystem and ocean uses from New York to Virginia. The ROA also provides links to more in-depth information sources, including the Data Portal.

The ROA is organized into two sections: (1) ocean ecosystem and resources and (2) ocean uses that align with the goals of the Plan. The section on the ocean ecosystem and resources provides context for regional ocean planning with an overview of Mid-Atlantic geography, oceanography, marine life, human components, and ecosystem changes. It also provides information on status, trends, and linkages across topics, focusing on aspects of the ecosystem that relate directly to goals and objectives of the Mid-Atlantic regional ocean planning process. The section on ocean uses presents a brief overview of how people use the ocean in the region and the economic activity associated with Mid-Atlantic ocean space. Here too, status, trends, and linkages are highlighted to describe ocean uses related to the planning process, as well as recent and anticipated changes in those uses.



The Regional Ocean Assessment (ROA) is a living document designed to serve as a snapshot and information resource of the ocean in the Mid-Atlantic region. The ROA can be accessed at <http://roa.midatlanticocean.org>.

1.4 MID-ATLANTIC REGIONAL OCEAN PLANNING FRAMEWORK

The *Mid-Atlantic Regional Ocean Planning Framework* (Framework; Appendix 1) articulates the RPB's vision and geographic focus and establishes a set of guiding principles, goals, and objectives. It was developed collaboratively and approved by the RPB in 2014 to guide the creation of this Plan.

1.4.1 VISION

The vision articulates the RPB's desired future state for the ocean waters off of the Mid-Atlantic region:

"A Mid-Atlantic ocean where safe and responsible use and stewardship support healthy, resilient, and sustainable natural and economic ocean resources that provide for the wellbeing and prosperity of present and future generations."



A view of the Mid-Atlantic region at night from the International Space Station, looking from the Atlantic Ocean landward. © NASA

1.4.2 GEOGRAPHIC FOCUS

The primary geographic focus for Mid-Atlantic regional ocean planning is the ocean waters of the region. Specifically, the geographic focus includes:

- The shoreline seaward to 200 nautical miles, to the boundary of the Exclusive Economic Zone (EEZ), which includes Federal, State, and Tribal waters.²³
- The northern limit is the New York/Connecticut and New York/Rhode Island border.
- The southern limit is the Virginia/North Carolina border.

While the RPB operates with this definition, it recognizes the importance of bays, estuaries, and coastal areas. The RPB will draw connections to

and coordinate closely with entities responsible for the management and planning of those areas, particularly when ocean uses and natural resources have an interrelationship with coastal communities, bays, estuaries, ports, or other shoreside infrastructure. The geographic focus is an administrative description for planning purposes only, and is not intended to create or represent fixed boundaries or affect existing legal authorities.

1.4.3 PRINCIPLES

In the Framework, the RPB established 11 guiding principles, which it defines as “basic or essential qualities or elements determining the intrinsic nature or characteristic behavior of regional ocean planning.” Principles describe how the RPB intends to operate.

MID-ATLANTIC REGIONAL PLANNING BODY PRINCIPLES

INTRINSIC VALUE

The RPB will respect the intrinsic value of the ocean and its biodiversity, at the same time recognizing humans as part of the ecosystem and dependent on the health of the ecosystem, for our own well-being.

ECONOMIC VALUE

The RPB recognizes the economic value derived from the ocean and intends to enable opportunities for sustainable economic development.

RECOGNIZE INTERCONNECTIONS

The RPB will facilitate an approach to managing resources that recognizes and considers the interconnections across human uses and interests, marine ecosystems, species and habitats, and coastal communities and economies.

COMPATIBILITY OF MULTIPLE INTERESTS

The RPB will make information available to support economic development and ecosystem conservation so that multiple interests, including those of Tribal nations, can co-exist in a manner that provides for sustainable uses, reduces conflict, and enhances compatibility.

IMPROVING RESILIENCE

The RPB will consider the risks and vulnerabilities associated with past, present, and predicted ocean and coastal hazards (e.g., erosions, extreme weather, and sea-level rise), and predicted changes to temperature and ocean acidification to protect Mid-Atlantic ocean and coastal communities, users, and natural features.

BEST AVAILABLE SCIENCE

The RPB will be guided by and incorporate the best available science and Traditional Knowledge in regional ocean planning.

ADAPTABILITY

The RPB will embrace a flexible and adaptive approach in accommodating changing environmental and economic conditions, advances in science and technology, and new or revised laws and policies. The RPB will track progress towards meeting established planning objectives and use the information gained to modify and adapt RPB actions.

TRANSPARENCY

RPB products and information about processes will be made available to all interested parties in clear and accessible formats.

ENGAGEMENT

The RPB will seek meaningful stakeholder and public input in the regional planning process using multi-faceted tools to encourage public participation and understand expressed needs.

CONSISTENCY WITH EXISTING LAWS

RPB actions will be consistent with federal laws, regulations, Executive Orders, and treaties, and with State and Tribal laws, regulations, Executive Orders, and treaties where applicable.

COORDINATION AND GOVERNMENTAL EFFICIENCY

The RPB will serve as a forum to increase interjurisdictional coordination to facilitate efficient and effective management of existing and potential future Mid-Atlantic ocean uses and resources. Such coordination will extend to partners and issues in adjacent areas that impact the Mid-Atlantic ocean planning focus area, including international waters as appropriate.

1.4.4 GOALS AND OBJECTIVES

The goals established through the Framework (Framework goals) are high-level statements of the outcomes that the RPB hopes to achieve. The RPB considers the two goals to be of equal importance and deeply interconnected. The objectives under each goal (Framework objectives) describe specific outcomes and observable changes that contribute to achieving ocean planning goals. They serve as guideposts for the focus and work of the RPB.

The first Framework goal, a Healthy Ocean Ecosystem, is to *“promote ocean ecosystem health, functionality, and integrity through conservation, protection, enhancement, and restoration.”*

The Healthy Ocean Ecosystem goal and related objectives focus on promoting the health of ocean and coastal resources through efforts that improve our understanding of ocean resources and habitats, account for ecosystem changes, consider traditional values and scientific data in regional ocean planning, and foster collaboration across jurisdictions around ocean conservation efforts.

The second Framework goal, Sustainable Ocean Uses, is to *“plan and provide for existing and emerging ocean uses in a sustainable manner that minimizes conflicts, improves effectiveness and regulatory predictability, and supports economic growth.”*

The Sustainable Ocean Uses goal and related objectives focus on fostering coordination, transparency, and use of quality information to support existing, new, and future ocean uses in a manner that minimizes conflict and enhances compatibility. The RPB has organized the objectives under this goal by sector, to facilitate initial data collection,

allow for needs assessments, and highlight how the proposed actions will affect key stakeholders in each sector. To ensure the sustainable use of the ocean and its resources, the RPB must account for national security interests, facilitate collaboration around ocean energy issues, meet the needs of commercial and recreational fishing, inform the development of ocean aquaculture, improve awareness of maritime commerce and navigation, manage offshore sand, account for non-consumptive recreation, respect Tribal uses, and improve understanding of undersea infrastructure. At the same time, the RPB acknowledges that it is important to consider various sustainable use sectors and concerns in an integrated, holistic, and collaborative manner, as well as their relationship to the Healthy Ocean Ecosystem goal.

The RPB followed the organization of the Framework in identifying and organizing the specific interjurisdictional coordination actions that are the core of this Plan. The actions are described in more detail below and set out in *Chapter Two: Actions to Promote Interjurisdictional Coordination in Support of Regional Ocean Planning Goals*. A link to the full text of the goals and objectives can be found in Appendix 1.

1.5 APPROACH TO THE MID-ATLANTIC OCEAN ACTION PLAN

The NOC’s Marine Planning Handbook describes the flexibility available for regional planning bodies to determine for themselves how to carry out regional ocean planning. At its in-person meeting on January 21–22, 2015 in New York, New York, the RPB deliberated on and approved the Approach to the Mid-Atlantic Ocean Action Plan (Approach; Appendix 1).



A United States Coast Guard 47-foot Motor Life Boat makes way for the Atlantic Ocean to assist with a search and rescue training exercise held 25-miles offshore from Ponquogue Beach, New York, Aug. 21, 2014. © U.S. COAST GUARD PHOTO BY PETTY OFFICER 3RD CLASS FRANK J. IANNAZZO-SIMMONS / RELEASED

Through the Approach, the RPB agreed to identify and implement interjurisdictional coordination actions (i.e., actions that foster enhanced coordination among entities that are members of the RPB). These actions would focus on information sharing, improve interagency coordination, and inform more holistic and coherent decision making on a regional basis. The actions would help RPB member entities achieve the Framework goals and objectives under existing authorities and practices.

1.6 MOVING FORWARD UNDER EXISTING AUTHORITIES

Regional ocean planning aims to achieve better coordination and collaboration among the numerous governmental agencies with existing management authorities over our nation's ocean and coastal resources. Coordination among RPB member

entities and consistent use of best available ocean data are key elements of the actions presented in Chapter Two, which reflect stakeholder and public input on regional issues of concern and address specific management interests shared by Federal, State, and Tribal governments. The Plan focuses on informing decision making under existing authorities, but the RPB itself **does not** have any regulatory authority. Therefore, coordination actions taken by RPB members and their entities will occur under existing regulatory and statutory authorities.

Appendix 3 provides a brief description of Federal authorities directly relevant to the Plan, and a description of key State, Tribal, and MAFMC authorities and interests. For a more complete listing of authorities that address ocean activities and interests, please refer to the NOC's publication, *Legal Authorities Relating to the Implementation of Coastal and Marine Spatial Planning*.²⁴

“To me the sea is a continual miracle;
The fishes that swim—the rocks—the motion
of the waves—the ships, with men in them,
What stranger miracles are there?”

- WALT WHITMAN



Actions to Promote Interjurisdictional Coordination in Support of Regional Ocean Planning Goals

Best practices and collaborative actions span across levels of government, authorities, jurisdictions, and sectors to help achieve the region's ocean planning goals.

Interjurisdictional coordination, a key purpose of Mid-Atlantic regional ocean planning, is the process of collaboratively developing and implementing tools, information, and processes that enhance the capacity of Federal, State, and Tribal entities and MAFMC to carry out their missions, work together more effectively, and serve the needs of stakeholders in the region. This chapter describes best practices and collaborative actions that are complementary and span across levels of government, authorities, jurisdictions, and sectors to help achieve the region's ocean planning goals and objectives:

SECTION 2.1 describes best practices that inform coordination and the use of data and information under existing authorities. The best practices are intended to result in improvements to the use of data and information, participation in agency coordination, coordination with stakeholders, Federal-State coordination, and Federal-Tribal coordination. They are a cornerstone of the Plan and directly supportive of specific interjurisdictional coordination actions addressed in the subsequent sections of this chapter. All RPB entities are strongly encouraged to use best practices, but

they are voluntary for States and Tribes. Federal agencies will, to the extent appropriate and practicable, implement best practices subject to each agency's implementation of its statutory and regulatory mandates.

SECTION 2.2 describes commitments to continue to build on the regional collaboration fostered through the regional ocean planning process by continuing the RPB to support implementation of the Plan and address emerging opportunities.

PHOTO: A shipping freighter and a recreational boater share waters near Norfolk, Virginia.

© JASON HOUSTON

SECTION 2.3 describes interjurisdictional coordination actions that are specifically intended to address the Healthy Ocean Ecosystem goal of the RPB’s Framework. Six actions address three objectives.

SECTION 2.4 describes interjurisdictional coordination actions that address the Sustainable Ocean Uses goal of the RPB’s Framework. Thirty-three actions address nine objectives.²⁵

This chapter reflects the commitment of Federal, State, and Tribal governments to work together in specific ways, informed by stakeholder input and perspectives, to address regional ocean management opportunities and challenges described by the goals and objectives in the Framework.

The Plan addresses management issues that involve multiple authorities, agencies, programs, and affected parties, and there are direct or indirect linkages among the actions. Many of the collaborative actions detailed below have multiple, iterative components and implementation schedules designed to engage scientists, Traditional Knowledge holders, and stakeholders. As called for in the Approach, these should be considered as an initial set of region-wide actions to be evaluated for effectiveness, and improved over time through Plan updates (see Chapter Four for further detail on Plan performance monitoring and Plan updates and amendments). Some actions have been identified, and some may be developed in the future, in coordination with adjacent regions in recognition of the fact that human activities, marine life, and other key components of the marine system cross regional boundaries.

The best practices and actions below fall into four categories of opportunities:

- Improving coordination among managing authorities and with stakeholders, including through early coordination, enhanced awareness of each other’s needs, interests, and resources, in order to foster better and more predictable decision making.
- Improving information on ocean resources and human uses, and using data and information that is described in the Plan and hosted on the Data Portal.
- Leveraging resources.
- Identifying research needs.

The actions do not change existing authorities or create new mandates at the Federal, State, and Tribal levels. Rather, they aim to improve the effectiveness of Federal, State, and Tribal implementation of their respective responsibilities in the ocean waters off of the Mid-Atlantic region.

The RPB has committed, as described in sections 2.2 and 4.1, to continue its collaborative work on behalf of the Mid-Atlantic region and to implement the series of actions described in this chapter. In a number of cases, implementation will require resources. As part of implementing the actions, RPB members will consider and identify resources that may be needed. Section 4.1 includes further discussion of resources for Plan implementation.

The actions in sections 2.3 and 2.4 are presented in the context of the Plan goals and objectives they seek to achieve. Each action is described first in summary form with a description of the anticipated action and the expected product or outcome. Descriptions include sub-action steps, as well as lead RPB entities. Descriptions of sub-action steps include information about the timing of implementation:

- **Underway** = has already commenced
- **Short-term** = to be completed within two years of finalization of the Plan
- **Long-term** = to be completed within five years of finalization of the Plan
- **Ongoing** = involves periodic maintenance into the future

Sub-action steps identified as underway or ongoing are also marked as either short-term or long-term to provide sufficient clarity about the timeframe for completion.

2.1 BEST PRACTICES FOR ENHANCED COORDINATION

This section describes best practices that RPB member agencies will implement, to the extent practicable, consistent with existing authorities, agency practice, and resources to inform agency coordination and the use of data and information.²⁶ Best practices are flexible but consistent guidance for the acquisition and use of data and information in intergovernmental coordination and decision making. Best practices are implemented through, and enhance the value of existing coordination mechanisms by supporting:

- Broad understanding across agencies of the early use of relevant information from the Data Portal, the Plan, stakeholders, and other sources.
- Clear and efficient direction for a lead agency or project applicant.
- An initial shared understanding of the proposed project among and between agencies, and an initial, broad cross-agency understanding of



BOEM is the lead agency for offshore wind energy and will typically initiate coordination among collaborating entities. This photo is from the Greater Gabbard wind farm in England. There is currently no full scale offshore wind deployed in the Mid-Atlantic. © UK DEPARTMENT OF ENERGY AND CLIMATE CHANGE

potential issues, impacts to marine life and habitats, and/or compatibility concerns with existing human activities.

- Informed stakeholder engagement.
- Coordinated Federal, State, and Tribal review, as appropriate.

Agency coordination is required or recommended in numerous forms under existing authorities and is an important element of existing agency practices. The nature and process of agency coordination will vary depending on the nature of the proposed activity, applicable authorities, available agency resources, the scope of information that the agencies or proponent need to address, and established agency practices. Coordination is typically initiated by the lead agency, such as the BOEM for wind energy,

All RPB member entities should use the Data Portal as an important, but non-exclusive, source of information to help identify potential conflicts, impacts, and potentially affected stakeholders.

U.S. Coast Guard (USCG) for offshore liquefied natural gas facilities, or U.S. Army Corps of Engineers (USACE) and BOEM for beach nourishment projects. For the National Environmental Policy Act (NEPA) and regulatory actions, agency coordination typically occurs through pre-application consultation initiated by the Federal agency with primary authority (the lead Federal agency), at the request of a project proponent, or when an agency recognizes that the proposed activity may have potentially significant impacts to marine resources or human uses and the environment. It may also be a part of initial components of formal review under existing authorities (such as the public scoping process under NEPA), and ongoing components of formal review through regulatory consultations under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), Endangered Species Act (ESA), Migratory Bird Treaty Act, Marine Mammal Protection Act (MMPA), National Historic Preservation Act (NHPA), and other Federal authorities.

Agency coordination can clarify applicable authorities and requisite information, including what data is available and what is missing. It can also help agencies identify potential adverse impacts to resources and human activities, as well as stakeholders that need to be consulted. Overall, this coordination provides an opportunity to inform the proposed project prior to the submission of permit applications, and to obtain a better understanding of existing conditions and regulatory and stakeholder concerns.

Best practices described below will be implemented by participating entities consistent with existing authorities. The best practices are organized to describe: use of data and information, participation in agency coordination, coordination with stake-

holders, Federal-State coordination, and Federal-Tribal coordination.

2.1.1 ENHANCE THE USE OF DATA AND INFORMATION IN AGENCY COORDINATION

RPB members should use the Data Portal to inform:

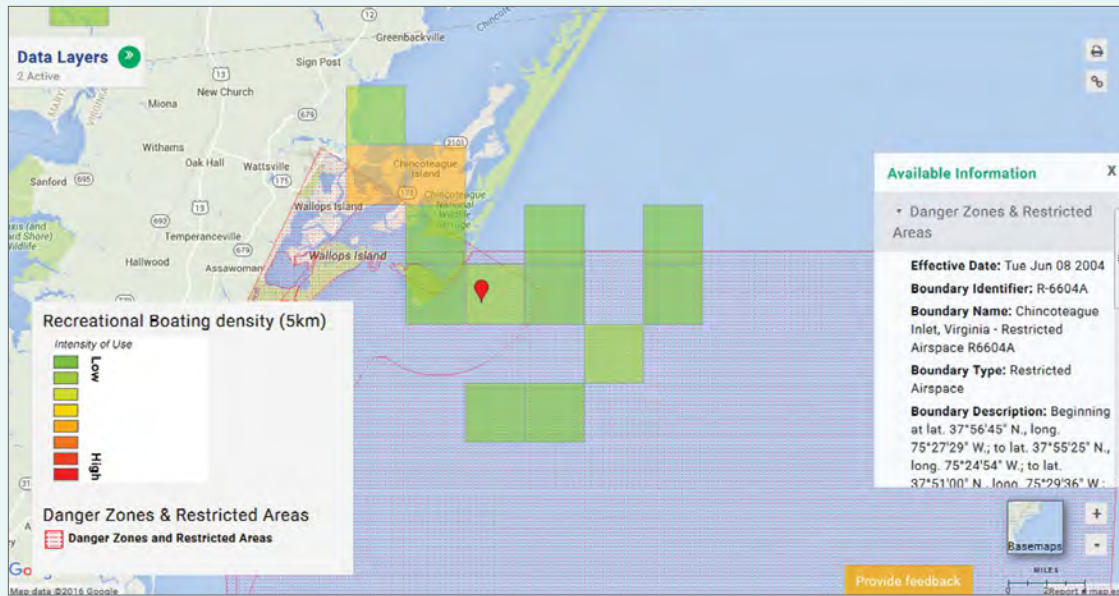
- The environmental and regulatory review processes under applicable statutes and regulations.
- Other management activities, including restoration, research, conservation, and other activities.

All RPB member entities should use the Data Portal as an important, but non-exclusive, source of information to help identify potential conflicts, impacts, and potentially affected stakeholders. Specifically, use of the Data Portal should:

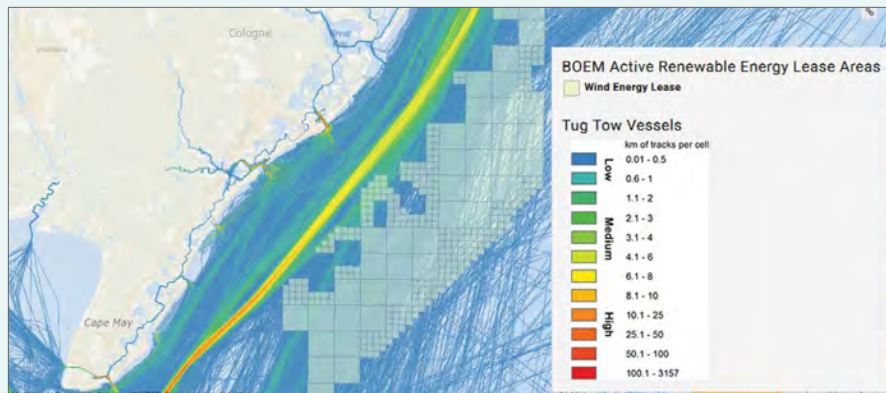
- Inform regulatory and environmental reviews of agency actions for their potential impacts.
- Identify potentially affected stakeholders.

Data and information from the Data Portal are not intended nor expected to be an exclusive or sole source of information; regulatory agencies will make their decisions on the need for further information based on the details of individual proposed activities. In almost all cases, site- and project-specific information will be required to support regulatory review and decision making. In such cases, data and information in the Data Portal can inform the identification of further study needs.

EXAMPLES OF MULTIPLE OCEAN USES DISPLAYED ON THE DATA PORTAL



DOD danger zones and restricted areas in relation to areas of recreational boating, near Assateague and Wallops Island, Virginia.



New Jersey Renewable Energy Lease Area and 2013 average annual tug and tow vessel traffic.



Mid-Atlantic submarine canyons with commercial fishing activity using pot and trap gear between 2011 and 2013.

2.1.2 ENHANCE PARTICIPATION IN AGENCY COORDINATION

Existing coordination mechanisms can be enhanced by ensuring that entities with responsibilities and/or interests under existing authorities have the opportunity to participate in agency coordination. Best practices to enhance such opportunities include:

- A. Implementation of best practices should be considered for all kinds of projects and activities, consistent with existing authorities, and is intended specifically for larger projects that require, for example, a detailed Environmental Assessment (EA) or an Environmental Impact Statement (EIS) under NEPA, or an individual permit from USACE.
- B. RPB members should engage in early coordination as a general practice, and should do so consistent with these best practices, as appropriate. This includes, but is not limited to, Federal agencies serving as a lead, participating, or cooperating agency in review of a private (non-government) project and Federal agencies serving as a project proponent for a government project.
- C. To help provide awareness and consistency of information across agencies at multiple levels of government, lead Federal and State agencies should seek to hold agency coordination meetings that include all agencies with jurisdiction or subject-matter interests that wish to attend.
- D. Lead agencies should ensure that all agencies²⁷ and federally recognized Tribes with potential interests in a proposed project receive notice of, and an opportunity to participate in, agency coordination meetings.
- E. Over the course of early coordination, a lead agency or project proponent should:

- Develop project materials that are informed by data and information from the Data Portal, this Plan, stakeholders, and other sources.
 - Provide information to allow agencies, Tribes, and the proponent to initially identify potential impacts of the proposed action and alternatives and identify data gaps.
 - Understand issues and/or requirements for additional information that agencies, Tribes, and/or stakeholders are likely to raise.
- F. Over the course of agency coordination, participating agencies and Tribes should:
- Provide measures to avoid and minimize adverse impacts to resources and uses, in accordance with existing authorities.
 - Identify and provide clear direction about the type, level, and potential sources of additional information that they require to formally review the project.
 - Articulate any other issues they are likely to address in review under NEPA and other relevant authorities, including regulatory consultations under MSA, ESA, MMPA, NHPA, and other authorities.

2.1.3 ENHANCE COORDINATION WITH STAKEHOLDERS

For a proposed project, the lead agency and/or project proponent should discuss with other agencies how stakeholder interests are addressed by applicable authorities, and agencies with subject-matter jurisdiction should describe provisions of their regulations that require characterization of stakeholder interests. As

appropriate, agencies should discuss with the project proponent the development of a systematic process to identify and engage stakeholders who may be affected by the proposed project. The lead agency for environmental review under NEPA should also address these considerations in any relevant scoping process.

Elements of that approach should include, but may not be limited to, the following components:

- A. Agencies should informally discuss, with the project proponent, known stakeholders that may be affected by the proposed project. The Data Portal's human use smart grid is one available tool to initiate this analysis. Such information does not relieve the lead agency or project applicant of their responsibility to identify potentially affected stakeholders to the extent required or anticipated under the core authorities.
- B. Project proponents should identify and seek to engage stakeholders whose activities may be affected, and incorporate their relevant data and information in project materials.
- C. To address the potential cumulative effects of a project on stakeholders when those effects may have a community-level impact, project proponents should identify and seek to engage coastal communities that have a particular relationship with a specific ocean area and incorporate relevant data and information in project materials.
- D. Project proponents should seek to identify, engage, and incorporate information from stakeholders before filing a permit application or otherwise formally initiating the environmental review and permitting process, to ensure that

stakeholder information helps inform both the project application and subsequent public, stakeholder, and agency review.

2.1.4 ENHANCE FEDERAL-STATE COORDINATION

Existing Federal law, such as NEPA, offers numerous opportunities for Federal and State coordination in such instances. For projects that may require an EA or an EIS under NEPA, lead Federal agencies should, to the extent practicable, discuss with the State(s) with jurisdiction over the proposed project the potential for a coordinated approach to NEPA and State review. Lead Federal agencies may invite a State to participate as a cooperating agency. Such discussion will be influenced by a range of existing statutory, regulatory, administrative, and/or practical measures. All States in the Mid-Atlantic have an interest in, and provide opportunities for, early coordination as a general practice. The following best practices support Federal-State coordination:

- A. Federal agencies engaged in any planning, management, or regulatory actions should engage in early coordination with appropriate Mid-Atlantic States as a general practice. This includes, but may not be limited to, lead Federal agencies for a government action and Federal agencies serving as a lead or participating and/or cooperating agency in review of a private (non-government) project.
- B. In cases where Federal agencies are not subject to State pre-application requirements, they should seek to address the States' substantive objectives for pre-application review through voluntary consultation, consistent with Federal supremacy, existing authorities and project-

specific considerations, to address the State’s substantive objectives for pre-application through voluntary consultation.

- C. As a primary vehicle for coordination, NEPA’s implementing regulations provide numerous mechanisms for coordination among Federal and State agencies throughout the review process. For actions that may require an EA or an EIS under NEPA, lead Federal agencies should discuss with the State(s) with jurisdiction over the proposed project, the potential for a coordinated approach to NEPA and regulatory review. Opportunities for coordination include, but may not be limited to:
- Pre-application consultation to determine what environmental studies could be required; what avoidance, minimization, and mitigation requirements may be considered; what Federal and State approvals will be necessary; and how the review requirements of those approvals may align.
 - Scoping to identify key stakeholders, issues, information needs, potential alternatives, and other consultations that need to occur.
 - Joint or coordinated planning processes, environmental research and studies, public hearings, and environmental analyses.
- D. To help support informed coordination over time, State and Federal agencies should keep each other informed of issues and actions that will affect their respective management decisions.

2.1.5 ENHANCE FEDERAL-TRIBAL COORDINATION

In addition to the pertinent best practices described above, the following best practices address Federal-Tribal coordination:

- A. As a general practice, Federal agencies engaged in planning, management, or regulatory actions should engage in early coordination with the Mid-Atlantic Tribes. This should include lead Federal agencies for a government action and Federal agencies serving as a lead, cooperating, or participating agency in review under NEPA of a private (non-government) project. For Tribes, early consultation enables concerns to be raised, questions to be answered, and the sharing of oral history (as appropriate) to help identify areas or sites with natural or cultural significance or other relevant topics
- B. As described in Tribal Uses Action 7 in section 2.4, Tribes and RPB partners will develop best practices specific to the appropriate use of Tribal information compiled during the ocean planning process. On completion, best practices relevant to Federal agencies will be incorporated into these best practices through provisions described in Chapter Four: Plan Administration.

Note also that each State in the region has recognized individual Tribes and established terms that guide and inform State and Tribal government relations. Accordingly, at their discretion, Mid-Atlantic States and State recognized Tribes may also choose to develop best practices to enhance State-Tribal participation in State ocean management efforts.



Tribes such as the Shinnecock Indian Nation of New York have an ancestral relationship with ocean resources. © GORDON M. GRANT

2.2 CONTINUATION OF THE RPB

The RPB is a unique Mid-Atlantic regional forum for interjurisdictional collaboration that has successfully increased mutual understanding across multiple levels of government, and identified specific ways to work together to address regional challenges and opportunities, both through this Plan and through the planning process overall. In order to foster ongoing success of the process, and to ensure effective oversight of Plan implementation, it is essential to sustain coordination through the RPB.

CONTINUATION OF THE RPB **Action 1** – Continue regional collaboration through the Mid-Atlantic Regional Planning Body.

Through this action, the RPB will continue as the primary mechanism to oversee Plan implementation

and address future collaboration opportunities. Doing so will allow the Federal agencies, States, Tribes, and MAFMC to effectively monitor progress in implementing the commitments and actions identified in this Plan, share information and perspectives on emerging issues as they arise, identify new information and Plan updates and amendments as needed, and continue to improve collaboration.

This action includes continued engagement in the RPB process by signatories to the RPB Charter; appropriate Federal, State, and Tribal co-leadership; clear and effective administration and organization of the RPB’s work; regular convening of the RPB; opportunities to engage with stakeholders and experts; and a collaborative effort to pursue adequate support for implementation of actions in this Plan. See Section 4.1 for more information on the ongoing role of the RPB.

2.3 ACTIONS TO PROMOTE A HEALTHY OCEAN ECOSYSTEM

One of the RPB's two primary goals is: *Promote ocean ecosystem health, functionality, and integrity through conservation, protection, enhancement, and restoration.*

A healthy ocean ecosystem is fundamental to the health of our region's economies and communities. The diverse marine life of the Mid-Atlantic ocean ecosystem supports a robust commercial fishing industry, millions of recreational angling trips every year, and numerous opportunities to enjoy wildlife



Often multiple species of invertebrates are found co-occurring on rock ledges and canyon walls near the edge of the Mid-Atlantic's continental shelf. Here a brisingid sea star, an octopus, bivalves, and several individuals of the cup coral, *Desmophyllum*, are found in close proximity to one another. IMAGE COURTESY OF DEEPWATER CANYONS 2013 – PATHWAYS TO THE ABYSS, NOAA-OER/BOEM/USGS.

such as whales, turtles, and seabirds. The region features widely varying habitats, from shallow coastal bays with seagrasses, to offshore canyons with deep sea corals. Coastal and marine habitats provide fish, invertebrates, and marine mammals with food and shelter. Nearshore beach, dune, and coastal wetland habitats are critically important as spawning, nursery, and feeding areas. Beach and wetland areas also provide sources of subsistence food and recreation, as well as providing shoreline protection.

The region hosts an array of endangered and threatened species, including birds, bats, sea turtles, marine mammals, and fish. For example:

- Two species of sturgeon forage in the Mid-Atlantic and return to rivers in the region to spawn.
- Mid-Atlantic waters serve as important foraging and developmental areas for sea turtles.
- The endangered North Atlantic Right Whale is a winter resident in Mid-Atlantic waters, and mothers with calves migrate through the region from the breeding area off of Florida to summer feeding grounds in the north.
- Four threatened and endangered bird and bat species regularly use the Mid-Atlantic: 1) Piping Plovers feed and nest on beaches, use them as stopover areas during migration, and fly over the ocean during migration between southern wintering areas and northern breeding areas; 2) Roseate Terns likewise nest on beaches and fly over the ocean during migration, but forage in the ocean; 3) Rufa Red Knots use the region's beaches and estuaries as a much needed rest stop on their migrations from South America to the Arctic; 4) Black-capped Petrels use offshore

Mid-Atlantic waters for foraging and resting. 5) There is also information indicating that the northern long-eared bat, and possibly other listed bats, migrate and/or forage over the ocean.

Mid-Atlantic ocean and coastal waters also provide sustenance, spirituality, and solace to millions of Mid-Atlantic residents and visitors. The connection ties together our cultures, our stories, and our consciousness. Connections among natural and human components of the regional ecosystem are exemplified by Traditional Knowledge held by Tribal members, fishermen, and other generational users of the ocean, as well as other cultural resources and values.

This diverse marine ecosystem is experiencing large-scale changes in conditions. The temperature of coastal and ocean waters is increasing, and climate projections indicate that the region will experience some of the highest absolute levels of change in water temperatures along the eastern seaboard. In response, a number of marine species have moved northward and/or to deeper water. There is growing concern in the Mid-Atlantic that the ocean is becoming more acidic; additional information about the oceanographic properties as well as the impacts of ocean acidification on the marine environment are needed to address this concern. Finally, plastics and other marine debris are also accumulating in our ocean waters, raising concerns about entanglement, suffocation, and toxins entering the food chain.

The Healthy Ocean Ecosystem goal focuses on protecting and conserving these natural, social, and cultural ocean and coastal resources, through efforts that improve our understanding of ocean resources and habitats, account for ecosystem

changes, consider traditional values and scientific data, and foster collaboration across jurisdictions around ocean conservation efforts.

The three objectives that support the Healthy Ocean Ecosystem goal are:

Objective 1 - Discovering, understanding, protecting, and restoring the ocean ecosystem

Enhance understanding of ecosystem functionality and the key roles of Mid-Atlantic ocean habitats and physical, geological, chemical, and biological ocean resources through improved scientific understanding and assessments of naturally occurring processes and changes and the effects of ocean uses. Foster collaboration and coordination for protection and restoration of ocean and coastal habitats that are important for improving ecosystem functioning and maintaining biodiversity.

Objective 2 - Accounting for ocean ecosystem changes and increased risks

Facilitate enhanced understanding of current and anticipated ocean ecosystem changes in the Mid-Atlantic. These include ocean-related risks and vulnerabilities associated with ocean warming (including sea level rise, coastal flooding/inundation), ocean acidification (including effects on living marine resources), and changes in ocean wildlife migration and habitat use.

Objective 3 - Valuing Traditional Knowledge

Pursue greater understanding and acknowledgment of Traditional Knowledge, along with other cultural resources and values, and incorporate such knowledge and values in the ocean planning process.

The six RPB actions described in this section are intended to address these three objectives.



TOP: The great shearwater (*Ardenna gravis*) is common off our Atlantic Coast, but seldom comes close to shore except during storms. © BILL THOMPSON; **BOTTOM:** Rehabilitated Kemp's ridley sea turtle released at Virginia Beach with acoustic and satellite tags to collect needed scientific data on sea turtle behavior. The acoustic tags are part of a project in conjunction with naval biologists that uses an array of receivers in the Chesapeake Bay and coastal ocean to monitor the fine scale movements of sea turtles. © CRAIG MCCLURE, CITY OF VIRGINIA BEACH

➤ HEALTHY OCEAN ECOSYSTEM

Action 1 – Identify ecologically rich areas of the Mid-Atlantic ocean and increase understanding of those areas to foster more informed decision making.

This action is intended to deepen our understanding of key areas of the Mid-Atlantic ocean ecosystem in order to help inform decision making under existing authorities. The RPB will use marine resources data and information synthesis products, in coordination with a similar effort in the Northeast, as well as the expertise of Mid-Atlantic scientists, Traditional Knowledge holders, and ocean stakeholders to identify and assess the marine ecology, human uses, and current management practices associated with areas of the Mid-Atlantic. Enhanced baseline data on single species and human use sectors and communities can be an important improvement in science-based decision making. Ultimately, synthesis of data on multiple species and habitats can potentially identify areas that are ecologically rich. The products of this action are characterizations of these areas that are vetted by scientists, Traditional Knowledge holders, and stakeholders, as well as summaries of current management practices within these areas. This effort will result in area-based reports made publicly available to managers and stakeholders, which are intended to improve over time.

RPB lead entities: Virginia and Federal agency to be determined

Steps to accomplish this action include:

A. Define, evaluate, and refine the marine life data synthesis approach. This includes developing a

general framework for identification of ecologically rich areas (ERAs) that contains terms, references, and general components of ERAs. This approach will identify data to satisfy ERA component requirements, as well as thresholds for application of these data to define ERAs. These steps will be undertaken in coordination with Mid-Atlantic scientific experts, Traditional Knowledge holders, stakeholders, the public, and the Northeast Regional Planning Body (NE RPB). A draft framework for identification of ERAs can be found in Appendix 4. **(short-term and underway)**

- B. Identify potential ERAs for consideration and develop criteria for choosing a pilot area for assessment, in collaboration with stakeholders, Traditional Knowledge holders, and scientists. Identify and recommend to the RPB at least one pilot ERA for more in-depth assessment. **(short-term)**
- C. Assess the pilot area in greater detail by:
 - (1) identifying human uses in that pilot area through consultation with stakeholders, applying sufficient existing human use data as appropriate, and including the human use grid tool;²⁸
 - (2) characterizing the marine ecology and ecological functions of the pilot area, including observed changes or trends of key species; and
 - (3) summarizing key authorities and current management practices related to that pilot area. **(short-term)**
- D. Compile all information collected for the pilot area into a comprehensive factual report to inform management authorities in decision making, particularly regarding decisions that may affect those areas. **(short-term)**
- E. Evaluate use of the pilot report in informing decision making, and make any necessary



Dolphins patrol ocean waters off of New Jersey.
© ISTOCKPHOTO

improvements to the process of identifying and assessing ERAs. (**long-term**)

- F. Select subsequent ERAs, conduct assessments, and develop reports incorporating relevant new information and engaging scientific experts, resource managers, commercial fishermen and other stakeholders. (**long-term** and **ongoing**)

HEALTHY OCEAN ECOSYSTEM

Action 2 – Map shifts in ocean species and habitats.

The impacts of climate change on ocean species and habitats are a substantial concern. One potential impact is that warming ocean temperatures may be causing the ranges and extents of marine life to change. For example, fishermen report changes in the location of fishing grounds, Traditional Knowledge holders have begun mapping shifts in **first foods**,²⁹ and corresponding changes in seabird distributions related to forage fish resources are being noted. Scientists are beginning to examine long term data sets to identify the nature and patterns of change. Scientists have also conducted a climate vulnerability assessment for 82 fish and invertebrate species from the Northeast U.S. shelf, including Mid-Atlantic species.^{30, 31, 32} This action would support the continued exploration of these changes in the Mid-Atlantic by mapping and disseminating information about spatial shifts in habitats and living marine species.^{33, 34, 35}

RPB lead entities: Virginia and National Oceanic and Atmospheric Administration (NOAA)

Steps to accomplish this action include:

- A. Identify information sources. (**short-term**)
- B. Recommend ways to make current information more accessible to RPB members and the general public. (**short-term**)
- C. Convene resource managers, scientists, Traditional Knowledge holders, and commercial fishermen and other stakeholders to review and discuss: (1) data and methodologies that can be used to create draft maps that illustrate existing, historic, expected, or potential shifts in the distribution of marine species and habitats; (2) potential management applications of the maps; (3) additional data or information needed to enhance utility of draft maps; and (4) caveats for their use. (**underway, short-term, and ongoing**)
- D. Coordinate among RPB partners and stakeholders on necessary mapping data acquisition, using existing tools available for integrated ocean and coastal mapping collaboration, and leveraging resources where feasible. (**short-term** and **ongoing**)
- E. Develop an approach to the production, peer review, metadata, and publication of maps that illustrate regional climate change-related biological and ecological changes. (**underway** and **short-term**)
- F. Facilitate the publication of maps on the Data Portal, after they have been vetted and finalized. (**short-term**)
- G. Identify resource needs and recommend methods to use new information to support initial and periodic updates of Data Portal mapping products, in order to maintain their utility for management agencies and stakeholders and ensure that updates occur regularly, as appropriate. (**short-term** and **ongoing**)

➔ HEALTHY OCEAN ECOSYSTEM

Action 3 – Develop a Mid-Atlantic Ocean Acidification Monitoring Network.

Changes in ocean chemistry have the potential to create economic, environmental, social, and cultural impacts in the Mid-Atlantic region. To begin to understand ocean acidification and its potential impacts, a more comprehensive Mid-Atlantic Ocean Acidification Monitoring Network (Monitoring Network) that includes both coastal and ocean sampling sites is needed. This action will improve capacities to detect and understand ecosystem impacts of ocean acidification and enhance awareness within management agencies and stakeholders of select chemical and ecological changes in the ocean ecosystem. Partnerships with organizations like the [Mid-Atlantic Regional Association Coastal Ocean Observing System \(MARACOOS\)](#)³⁶ will help to ensure a coordinated regional approach to addressing ocean acidification in the Mid-Atlantic, as will drawing from experience in other parts of the Nation.

RPB lead entities: Virginia and Environmental Protection Agency (EPA)

Steps to accomplish this action include:

- A. Identify and compile a list of current regional ocean acidification monitoring efforts and technologies, research, and data gaps, as well as opportunities for partnerships and funding.³⁷ (**underway** and **short-term**)
- B. Identify and prioritize questions the Monitoring Network should address, potentially including location and number of offshore monitoring sites, appropriate time intervals for measuring ocean

acidification, and the relationship between estuarine eutrophication and carbon dioxide absorption as drivers of ocean acidification. (**underway** and **short-term**)

- C. Convene scientists, stakeholders, Traditional Knowledge holders, and the public to develop and vet options for establishing and supporting the Monitoring Network. (**short-term**)
- D. Facilitate the development and launch of the Monitoring Network and publicly post results. (**short-term**)
- E. Review progress, challenges, and opportunities and adjust the program as needed. (**short-term** and **ongoing**)

➔ HEALTHY OCEAN ECOSYSTEM

Action 4 – Develop a regionally appropriate strategy for marine debris reduction.

Marine debris is a problem that threatens the health of Mid-Atlantic ocean ecosystems, and its resolution requires collaboration across levels of government and with the public and partners. The purpose of this action is to build on efforts of [NOAA's Marine Debris Program](#),³⁸ EPA's Trash-free Waters Program, and other existing programs and partnerships in the region to develop regionally appropriate and feasible marine debris reduction strategies that address key issues such as: debris from storms, derelict fishing gear, plastic food containers, microplastics, plastic bottles and bags, balloons, and cigarette butts. Strategies may include source reduction, coordinated cleanups, regionally applicable public outreach, education, and social marketing campaigns aimed at behavior change.



Ocean waters off the Mid-Atlantic support a diverse array of marine mammal and bird species. In this photo, a sooty shearwater (*Ardenna griseus*), a great shearwater (*Ardenna gravis*) and a herring gull (*Larus argentatus smithsonianus*) can be seen alongside a humpback whale (*Megaptera novaeangliae*). © BILL THOMPSON

RPB lead entities: Virginia and EPA

Steps to accomplish this action include:

- A. Identify existing efforts and prioritize options for regional strategies for marine debris reduction, which may include: (1) prioritizing sources and problem areas; and (2) identifying stakeholders and developing a regional marine debris shoreline monitoring program that meets national standards, using criteria such as political and social feasibility, benefits to wildlife and human safety, and cost. Include outreach for improved source controls and link to efforts underway by estuary programs. Consider a regional cost-benefit analysis on full lifecycle costs of plastics (e.g., bags, balloons, microplastics) on ocean health. (**underway** and **short-term**)
- B. Present options for regional and/or RPB member entity-specific strategies and implementation mechanisms to the public and RPB. (**short-term**)
- C. Implement selected strategies with the engagement of responsible parties, as identified in the strategies themselves. (**short-term** and **ongoing**)

➔ HEALTHY OCEAN ECOSYSTEM
Action 5 – Develop indicators of the health of the Mid-Atlantic regional ocean ecosystem.

Monitoring and assessing the health of the Mid-Atlantic ocean ecosystem over time is an important way for decision makers to better understand ecosystem changes as they occur, and how those changes impact and are impacted by human activity. This action will identify measures of ocean ecosystem health, and develop a program for



The shortfin mako (*Isurus oxyrinchus*) is the fastest shark in the world and an important top predator of the Mid-Atlantic offshore. © ISTOCKPHOTO

monitoring those indicators over time and displaying them in one easily accessible location. Ocean health indicators will focus on the Mid-Atlantic region and, to the extent feasible, be derived from existing data collection and monitoring efforts (as opposed to requiring new data collection or monitoring efforts).

RPB lead entities: New York and Federal agency to be determined.

Steps to accomplish this action include:

- A. Summarize existing indicators currently available.³⁹ Analyze the potential for available indicators to gauge the overall health of the Mid-Atlantic ecosystem, understand what the indicators may show us, and identify needed indicators not currently available. Vet the list of available and needed indicators with scientists, Traditional Knowledge holders, and stakeholders in the region. (**short-term** and **ongoing**)

- B. Submit refined indicators to the RPB for consideration and endorsement. **(short-term)**
- C. Develop final indicators and details of the monitoring and assessment program. **(short-term)**
- D. Display ocean health indicators at a web location to be determined. **(short-term)**
- E. Identify responsible parties that will continue to collect and post baseline data for indicators to the Data Portal, as appropriate. **(short-term and ongoing)**
- F. Facilitate the evaluation and updating of ocean health data and indicators at appropriate intervals. **(short-term and ongoing)**
- G. Review progress, challenges, and opportunities and adjust the program as needed. **(long-term and ongoing)**

 **HEALTHY OCEAN ECOSYSTEM**
Action 6 – Incorporate Traditional Knowledge of Tribes regarding ocean health in regional ocean planning in the Mid-Atlantic.

Traditional Knowledge is a vital source of information that can help ocean resource managers, users, and other stakeholders better understand the ocean ecosystem and make more informed decisions to better protect the health of the ocean. This action will develop best practices for incorporating Traditional Knowledge of Tribes in Mid-Atlantic regional ocean planning. Best practices will contribute to a fair and balanced ocean planning process, encourage Tribal participation in the RPB, promote the inclusion of Traditional Knowledge to improve ocean health, and respect and value the

benefit that Traditional Knowledge offers in support of effective ocean planning. Additional actions related to Tribal interests and uses are described in section 2.4.8, some of which closely link and mutually reinforce the steps described below. Note that other forms of Traditional Knowledge are accounted for in other actions. For example, the traditional local knowledge of fishermen is acknowledged in section 3.2.2.

RPB lead entities: Shinnecock Indian Nation and Pamunkey Indian Tribe

Steps to accomplish this action include:

- A. Document current processes for including Traditional Knowledge in decision making, determine where information should be included, and identify barriers to greater inclusion. **(short-term)**
- B. Identify measures to increase the inclusion of Traditional Knowledge in decision making, while providing protections for sensitive information. **(short-term)**
- C. Determine Traditional Knowledge documentation needs. **(short-term)**
- D. Inform Tribes and Indigenous communities about the general nature and scope of proposed ocean research and development projects prior to the application/permitting process, to enable Traditional Knowledge holders to provide input on: (1) establishing baseline information and impact predictions; (2) assessing if project design changes are necessary based on the above information, as appropriate; and (3) determining outstanding public concerns prior to entering the application/permitting process. Utilize Tribal directories as a resource for notification. **(short-term and ongoing)**

- E. Develop educational online training for best practices on integration of Traditional Knowledge of Tribes into regional ocean planning. (**short-term** and **ongoing**)
- F. Identify mechanisms to support the engagement of Tribes and Indigenous Peoples in Federal ocean-related science investments, including the capacity to access and benefit from the services provided by the NOAA Coastal Services Center, Landscape Conservation Cooperatives, U.S. Geologic Survey (USGS) National Climate Change and Wildlife Science Center, and other sources. (**short-term** and **ongoing**)
- G. Identify sources of training for agency staff about working with Tribes and Indigenous Peoples on ocean initiatives involving Traditional Knowledge. (**short-term** and **ongoing**)



The Mid-Atlantic is one of the most important areas in the world for U.S. Navy training and operations. An E2-C Hawkeye assigned to the Screwtops of Airborne Warning Squadron (VAW) 123 takes off from the flight deck of the aircraft carrier USS Dwight D. Eisenhower (CVN 69), the flagship of the Eisenhower Carrier Strike Group. Ike is underway preparing for an upcoming scheduled deployment. © U.S. NAVY PHOTO BY MASS COMMUNICATION SPECIALIST 3RD CLASS ANDERSON W. BRANCH/RELEASED

2.4 ACTIONS TO FOSTER SUSTAINABLE OCEAN USES

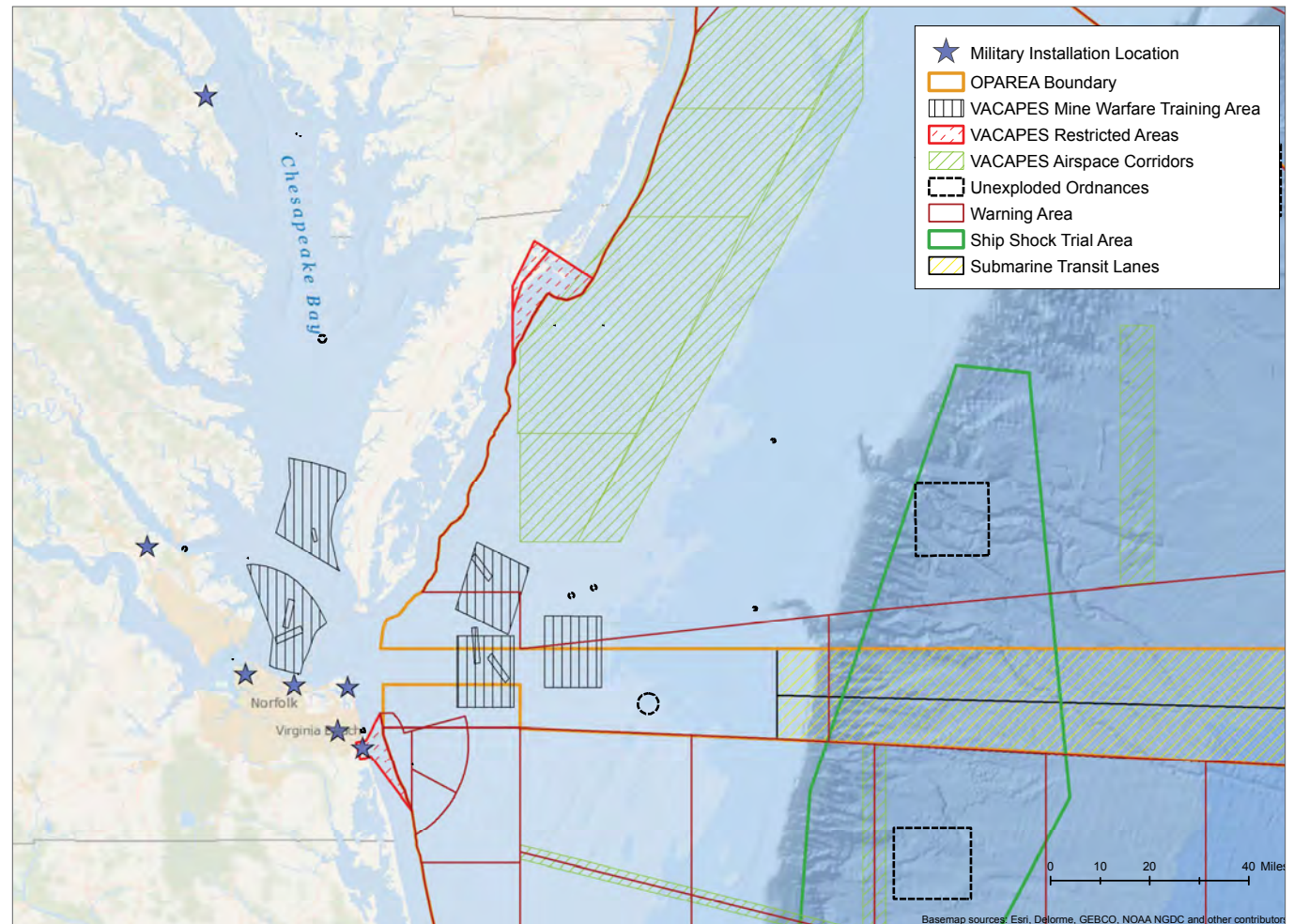
One of the RPB’s two primary goals is: *Plan and provide for existing and emerging ocean uses in a sustainable manner that minimizes conflict, improves effectiveness and regulatory predictability, and supports economic growth.*

The Sustainable Ocean Uses goal focuses on fostering coordination, transparency, and use of quality information to support accommodation of existing, new, and future ocean uses in a manner that minimizes conflict, enhances compatibility, improves effectiveness, enables regulatory predictability, and supports economic growth. The nine objectives under this goal and associated actions include the following:

2.4.1 NATIONAL SECURITY

Objective 1 – *Account for national security interests in the Mid-Atlantic through enhanced coordination, increased transparency, and sharing of information across RPB member entities.*

Multiple branches of the Department of Defense (DOD, i.e., the U.S. Navy, Army, Marine Corps, and Air Force) and the Department of Homeland Security (i.e., USCG) are responsible for our Nation’s security. The Navy is the primary DOD branch that carries out training and testing activities at sea, and is the primary focus for military activities related to domestic ocean and coastal planning programs. Operational requirements for deployment of Navy forces worldwide drive and shape training doctrine and procedures. The nature of modern warfare and security operations has become increasingly



Department of Defense military installations, operation areas, and unexploded ordnance in the vicinity of Norfolk U.S. Naval Base, the largest naval base in the world.

complex. Naval forces carry out operations on and below the ocean surface, on land, and in the air simultaneously. To stay prepared to effectively counter the array of threats, naval forces bring together thousands of sailors and marines, their equipment, vehicles, ships, and aircraft. Navy units must operate in an environment of continuous readiness and training certification. Therefore,

military readiness training must be as realistic as possible, to provide the experiences that are vital to success and survival. While simulators and synthetic training are critical elements of training—to provide early skill repetition and enhance teamwork—there is no substitute for live training in a realistic environment. In addition, military equipment, vehicles, ships, and aircraft require

testing in a realistic environment to ensure that they operate as designed for deploying Naval forces.

DOD historically uses areas along the eastern coast of the United States and in the Gulf of Mexico for training and testing. These areas, “range complexes,” were designated by the Navy into geographic regions. The Boston, Narragansett, Atlantic City, and Virginia Capes range complexes are located along the Mid-Atlantic and Northeastern seaboard of the United States. Combined, these areas are the principal locations for portions of the Navy’s major training, testing events, and infrastructure, including activities originating out of nearby Navy installations.

The series of range complexes along the East Coast provides a critical controlled environment for all branches of DOD, particularly the Navy, that accommodate training and testing operations in realistic combat conditions. Maintaining access to and usage of offshore training and testing areas is of utmost importance. Through a variety of internal and public documents, the Navy attempts to quantify potential impacts to offshore ranges in order to minimize incompatibilities and maximize range sustainment. There are numerous factors that can potentially impact training and testing, and therefore adversely impact the Navy’s overall readiness. Examples of these types of factors include urban development, airborne noise, competition for airspace and sea space, competition for scarce resources, threatened and endangered species, maritime regulatory or permit requirements, available frequency spectrum, water quality, interpretation of environmental regulations, interagency coordination, alternative energy systems, and legislative initiatives that restrict operations. When range access is reduced, the limitations imposed upon military units may degrade the realism and value of the training. If

areas within training or testing space are permanently or temporarily unavailable for operations, avoidance areas may inadvertently be created. As a result, the number of training days may be reduced, or certain types of operations, training, and testing may be prohibited when operations are restricted for a period of time and/or in certain geographic areas. In these cases, the testing or training must be conducted at other locations, if available, or a work-around must be developed, which can reduce realism and the value of the testing or training experiences.



NATIONAL SECURITY

Action 1 – Use the Plan and Data Portal to guide and inform Department of Defense programs, initiatives, and planning documents.

Communication between the military and non-military governmental agencies is improved when DOD continues to share pertinent information with other agencies, which helps to address a variety of impacts to training and testing activities. DOD intends to use this Plan and the Data Portal as mechanisms to guide and inform DOD programs, initiatives, and planning documents, when involved in the multiple coordination task forces and other planning groups that DOD currently participates in. DOD regularly participates in a wide variety of existing Federal, State, and local agency coordination groups, forums, and advisory panels across the nation, and will work to identify additional outlets in which it would be beneficial to participate.

RPB lead entity: DOD

Steps to accomplish this action include:

- A. Identify the Plan and the Data Portal as important sources of information in decision making. **(ongoing)**
- B. Consult the Plan and the Data Portal, along with other sources of information, in the preparation of internal agency guidance, existing procedures, and environmental planning. **(ongoing)**
- C. Leverage the Plan and the Data Portal to obtain supplemental regional information related to proposed actions and activities. **(ongoing)**

➔ NATIONAL SECURITY
Action 2 – Identify Department of Defense points of contact for the range of national security data layers in the Data Portal.

DOD has policies and processes that currently exist to manage military training and testing space, identify potential impacts to military testing and training, and facilitate coordination with other Federal and State agency directives and programs. DOD offshore operations are subject to regulatory compliance and management measures that can be time-consuming and costly efforts. Establishing and maintaining programs that build alliances between DOD, other Federal agencies, State regulators, and Tribes is essential for sustaining a proactive approach to meeting requirements for compliance. Routine coordination and consultation with other agencies provides information regarding future agency actions, and allows DOD the opportunity to advocate for the importance of training and



The guided-missile cruiser USS Monterey (CG 61), front, the aircraft carrier USS Dwight D. Eisenhower (CVN 69), the guided-missile destroyer USS Roosevelt (DDG 80) and the guided-missile cruiser USS San Jacinto (CG 56), assigned to the Dwight D. Eisenhower Carrier Strike Group (CSG), participate in a strait transit exercise.

© U.S. NAVY PHOTO BY MASS COMMUNICATION SPECIALIST SEAMAN CASEY J. HOPKINS/RELEASED

testing activities to sustain its mission. As future at-sea testing and training activities and required compliance efforts continue and expand, these relationships will prove invaluable.

RPB lead entity: DOD

Steps to accomplish this action include:

- A. DOD will, to the extent practicable, update the national security data on the Data Portal periodically as needed, such as when applicable permits are renewed or operations significantly change. **(ongoing)**

B. Identify appropriate points of contact for the national security data layers provided for inclusion into the Data Portal. Ensuring that agencies have appropriate points of contact improves interagency coordination and will enable decision makers to understand the implications of proposed regulations and development plans on DOD security, training, testing, and a variety of other mission-specific needs. **(completed)**

2.4.2 OCEAN ENERGY

Objective 2 – Facilitate greater collaboration around ocean energy issues in the Mid-Atlantic.

Ocean energy is a broad term describing offshore wind energy, marine hydrokinetic technologies such as wave and tidal current and oil and gas development. Existing energy infrastructure was built to serve nuclear and fossil energy sources, but the future of the Mid-Atlantic currently focuses on renewable technologies. Therefore, while the Framework includes ocean energy in a general sense, the RPB has chosen to focus actions under this objective on offshore wind energy at this time. Offshore wind is a significant and abundant energy resource on the Atlantic coast, poised for considerable development in the Mid-Atlantic region. Offshore wind energy represents a significant renewable energy opportunity in the near term, due to advancing technology and its potential siting near critical load centers with high electricity rates.

In Federal waters, BOEM has the authority to issue leases, easements, and rights-of-way on the Outer Continental Shelf (OCS) for the purpose of offshore wind energy development. In waters where State

COLLABORATION IN ACTION

For activities in the offshore environment, it is critical to engage early and often with other ocean users. This is particularly true with future offshore renewable energy development and fishing. An example of effective planning and communication between a Mid-Atlantic State and Federal agency on this topic is the **cooperative agreement** between BOEM, the Commonwealth of Virginia’s Department of Mines, Minerals and Energy and its CZM Program about Virginia’s offshore Wind Energy Area. Through this effort, potentially affected fisheries and potential best management practices and mitigation measures were identified to reduce conflicts. This is the kind of collaborative effort that Mid-Atlantic regional ocean planning aims to foster more of and establish as common practice for major decisions about our shared ocean.



Members of the Mid-Atlantic Regional Planning Body discuss interagency coordination. © JASON HOUSTON

and Federal jurisdiction overlap, while States have authority over the seabed and other State specific regulations, USACE is the lead for Federal permitting activities related to offshore wind energy facilities. The Federal Energy Regulatory Commission is the Federal lead for licensing marine and hydrokinetic energy facilities, while BOEM has authority to issue leases on the OCS. The Department of Energy (DOE) provides Federal support for renewable energy research, development, and demonstration activities to lower the cost of offshore wind energy and remove barriers to its deployment. The agency funds targeted, applied research to characterize offshore renewable energy resources, support

demonstration projects, and to better understand and develop appropriate mitigation measures for environmental impacts of marine renewable energy technologies. Other Federal, State, and Tribal agencies also have relevant regulatory authorities or consulting party status.

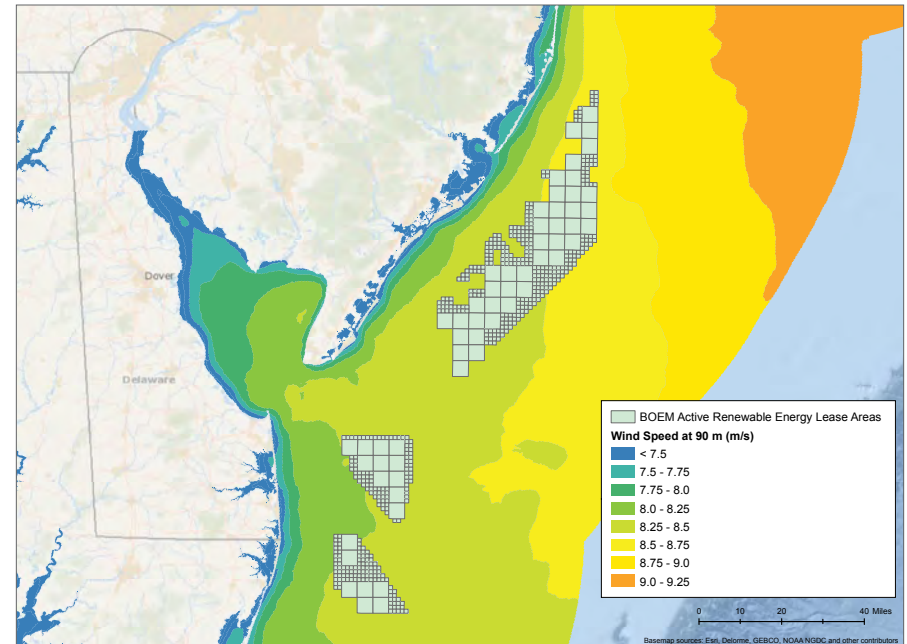
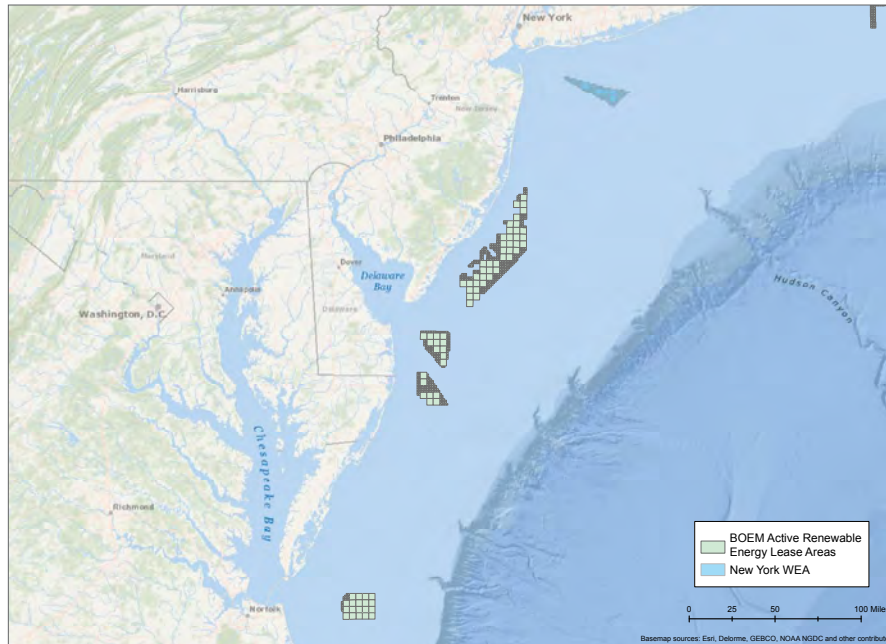
With no commercial scale wind energy developments currently installed offshore of the U.S. (although there are several pilot-scale projects in development, such as Deepwater Wind off Block Island, Rhode Island), little real-time observation data are available on the U.S.-specific environmental and siting effects of turbines, and on the installation, operations, and maintenance of turbines. BOEM's Environmental Studies Program develops, conducts, and oversees scientific research to inform policy decisions regarding development of OCS energy

and mineral resources. For example, BOEM is funding a study to collect real-time measurements of the construction and operation activities from the first facilities to be built. This will allow for more accurate assessments of the actual environmental effects and inform development of appropriate mitigation measures, beginning with the construction of the Block Island Wind Farm in 2015. DOE also funds significant work in this area. For example, DOE's [Tethys database](#)⁴⁰ serves to actively aggregate and disseminate information from across the United States and around the world, in partnership with more than a dozen other nations, on the environmental effects of offshore marine and hydrokinetic and wind energy development. This effort includes issuing innovative white papers and providing public outreach opportunities on these topics.



Sheringham Shoal Offshore Wind Farm, along the coast of Norfolk, England. © CHARLES HODGE PHOTOGRAPHY

BOEM has established Intergovernmental Renewable Energy Task Forces with all of the coastal Mid-Atlantic States and federally recognized Tribes to identify areas suitable for offshore wind energy development and to inform the process from planning through development. The Task Forces provide a forum to share data and information used by BOEM in the decision making process. Membership includes Federal agencies with interests off the particular State's coast, State agencies, and federally recognized Tribes. To better understand and meet potential challenges to continued development of the offshore renewable energy industry, BOEM periodically requests responses from industry and other stakeholders via sources such as workshops, public meetings, and Federal Register notices. Information gained through these sources informs BOEM's strategic planning efforts, existing regulations, and renewable energy administrative processes.



LEFT: BOEM Wind Energy Areas and Lease Areas in the Mid-Atlantic. RIGHT: BOEM Wind Energy Lease Areas off New Jersey, Delaware, and Maryland, with wind speed overlay.

↗ OCEAN ENERGY

Action 1 – Identify key intersections of relevant Federal programs and authorities that affect wind energy development.

Identifying key intersections of relevant Federal programs and authorities will inform site assessment and construction and operation plans for offshore wind projects. It will ensure that activities are mutually reinforcing, while providing easily accessible information for stakeholders, governmental decision makers, and the public.

RPB lead entity: BOEM

Steps to accomplish this action include:

- A. Develop materials to describe leasing, environmental review, and regulatory entities, including where and when relevant authorities play roles in decisions related to offshore wind energy. **(short-term)**
- B. Develop materials that identify intersections of key Federal programs and statutes related to offshore wind energy. **(short-term)**
- C. Post information and diagrams developed in Steps A and B above to the Data Portal and BOEM websites. **(short-term)**

OCEAN ENERGY

Action 2 – Develop internal Bureau of Ocean Energy Management guidance on integrating the Plan-developed best practices for using the Data Portal in management, environmental, and regulatory reviews.

The Plan and Data Portal provide data and information that inform the identification and assessment of locations for offshore renewable energy development, including supporting cumulative analyses in

NEPA documents. Best practices, which are described in section 2.1 above, in concert with existing agency guidance described in Ocean Energy Action 6, below, will support the effective use of data and information in the Plan and Data Portal. In addition, developers may use the information to inform the siting of their structures within a lease area. Likewise, developers may provide data and information that they gain from offshore activities in developing wind energy. The Plan and Data Portal are tools to assist in identifying the relevant species or locations that may require further information. [BOEM guidelines for developers](#)⁴¹ include the recommendation to use the most recent data available to inform any proposed survey work. The Plan and Data Portal are important sources for the data, and will be specifically called out in the guidelines. Post-leasing, the process is also useful to identify data gaps.

RPB lead entity: BOEM

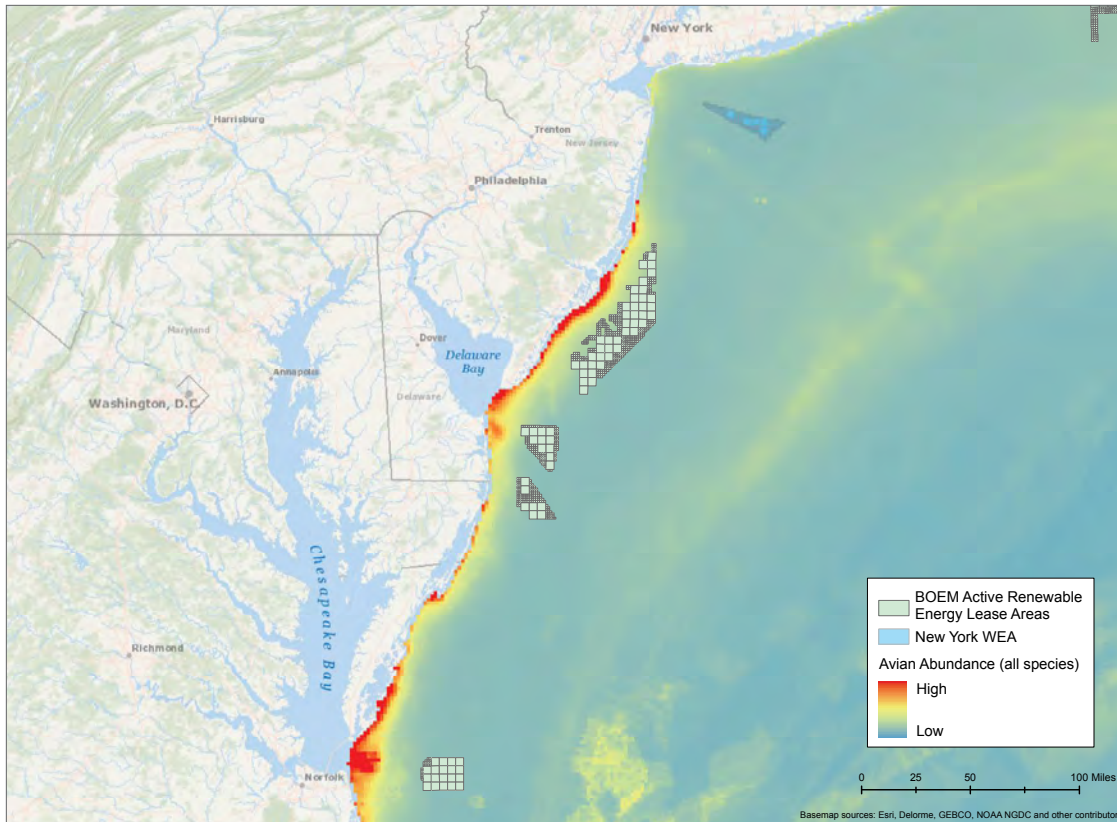
Steps to accomplish this action include:

- A. Using best practices described in section 2.1 and Healthy Ocean Ecosystem Action 6, BOEM will increase use of the Data Portal in management, environmental, and regulatory reviews. **(underway and short-term)**

OCEAN ENERGY

Action 3 – Partner in on-going and planned studies, identify knowledge gaps, and increase access to research planning cycles related to ocean energy.

Funding of research and development initiatives is the result of strategic planning and understanding of the state of the science. Regional planning data



Avian Abundance and BOEM Renewable Energy Lease Areas and Wind Energy Areas.

products and improved coordination will help improve Federal strategic investments by highlighting data gaps, such as marine life distribution, trends, habitat conditions, and resource characterization.

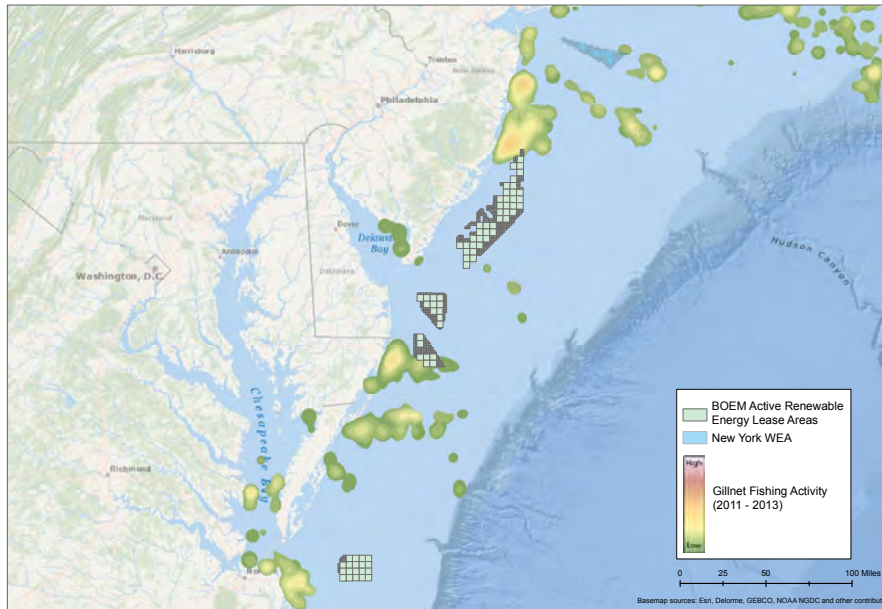
BOEM's Environmental Studies Program provides information about the human, coastal, and marine environments to support leasing decisions regarding offshore energy development. The program provides funding to academic, private sector, and government researchers to acquire data and information on topics including physical oceanography, atmospheric sciences, biology, protected species, social sciences and economics, submerged cultural resources, and environmental fates and effects so that BOEM can make science-informed decisions. BOEM's annual National Studies List describes Environmental Studies Program projects eligible for funding in a given fiscal year.

Most recently, BOEM has partnered with the National Academies of Sciences, Engineering, and Medicine (the National Academies), which is considering strategic approaches for environmental monitoring to assess ecosystem health and mitigation effectiveness; stakeholder discussions on controversial issues; reviews of proposed BOEM studies; high level reviews and expert advice on gaps and priorities for research; technical input related to BOEM's environmental programs; enhancing understanding of innovation in science and technology; and if warranted, National Research Council studies on specific topics. Additional bureaus within the U.S. Department of the Interior (DOI) actively contribute to research, including U.S. Fish and Wildlife Service (FWS), USGS, and National Park Service (NPS). BOEM also partners with other members of the RPB for research, such as NOAA and EPA.

RPB lead entity: BOEM

Steps to accomplish this action include:

- A. Increase awareness of research planning cycles to facilitate early involvement of RPB entities. Solicit and consider regional input from RPB members as well as from State, Tribal, and public interests, to the BOEM annual National Studies List, through outreach, webinars, announcements on the Data Portal, websites, and other means. **(short-term and ongoing)**
- B. Maintain up-to-date maps, data, and information that represent leasing areas on the OCS, including authoritative data on administrative boundaries and results of completed environmental studies, and ensure that data are provided to the appropriate repository specific to the data set type (e.g., marine mammal data provided to [OBIS SEAMAP](#)).⁴² **(short-term and ongoing)**
- C. Continue to partner in ongoing and planned studies, and commit to increasing awareness of research planning cycles to facilitate early involvement of RPB entities. BOEM will continue to solicit and consider State, Tribal, and public input to the annual National Studies List through outreach, webinars, announcements on the Data Portal, and websites. **(short-term and ongoing)**
- D. Work with the RPB member entities to develop a Mid-Atlantic regional studies list in support of new offshore wind issues, areas, and projects in this region. **(short-term)**
- E. Identify opportunities for collaboration with the [National Oceanographic Partnership Program \(NOPP\)](#),⁴³ to assess interest among Federal agencies on common topics for possible joint funding. **(short-term and ongoing)**



Commercial gillnet fishing and BOEM Wind Energy Areas and Lease Areas in the Mid-Atlantic.

➔ OCEAN ENERGY

Action 4 – Use the Data Portal to enhance access to data, environmental reports, and proposed offshore wind development activities.

BOEM has developed a geo-referenced studies system, [Environmental Studies Program Information System \(ESPIS\)](#),⁴⁴ that allows for quick access to numerous environmental reports and provides the ability to readily discover relevant scientific information and data analyses to support informed decision making. Linking that system with the Data Portal enhances access to such information. In addition, enhancing timely access to agency announcements regarding proposed offshore development activities through the Data Portal

can help commercial shipping, fishing, national security, and other sectors more quickly identify announcements of interest to them.

RPB lead entity: BOEM

Steps to accomplish this action include:

- A. Link the Data Portal with the BOEM ESPIS. **(short-term)**
- B. Place and maintain links to agency announcements about proposed offshore development activities on the Data Portal. **(short-term and ongoing)**

➔ OCEAN ENERGY

Action 5 – Improve consultations and communication with Tribes in the region.

BOEM recognizes that Tribes have special expertise with respect to potential environmental, cultural, and historic impacts, and that the Tribes are in the best position to present this information in their own words. BOEM has an internal policy of inviting Tribal partners to be cooperating agencies in the preparation of NEPA documents when Tribes express an interest in a BOEM action. This special status affords the Tribes the opportunity to review and/or prepare sections, provide data, help develop alternatives, provide input to estimate the effects of alternatives, and provide input in advance of public comment periods. In addition to consultation with Tribes during reviews carried out under Section 106 of the NHPA, BOEM has executed five Atlantic (and one Pacific) Section 106 Programmatic Agreements including Tribal partners and other consulting parties for each stage of BOEM’s renewable energy

process. BOEM also has inserted Post-Review Discoveries Clauses in each of its leases, right-of-way grants, and plan approvals that require lessees and grantees to stop work and notify BOEM of any unanticipated discovery that occurs post-review.

RPB lead entity: BOEM

Steps to accomplish this action include:

- A. Continue to implement BOEM’s internal renewable energy policies inviting federally recognized Tribal partners to be cooperating agencies in the preparation of NEPA documents, requiring lessees to invite federally recognized Tribes to pre-survey meetings, and including Post-Review Discoveries Clauses with Tribal partners for each stage of BOEM’s renewable energy process. (**short-term** and **ongoing**)
- B. Coordinate closely with Tribal partners to protect sites from impact and resolve any impact in consultation with the Tribes, pursuant to the agreements. (**short-term** and **ongoing**)
- C. Work to effectively communicate BOEM’s science strategy on Tribal studies in the Mid-Atlantic region, including developing science communication plans. (**short-term** and **ongoing**)

OCEAN ENERGY
Action 6 – Enhance BOEM engagement of fishing industries through improved data and specific interactions.

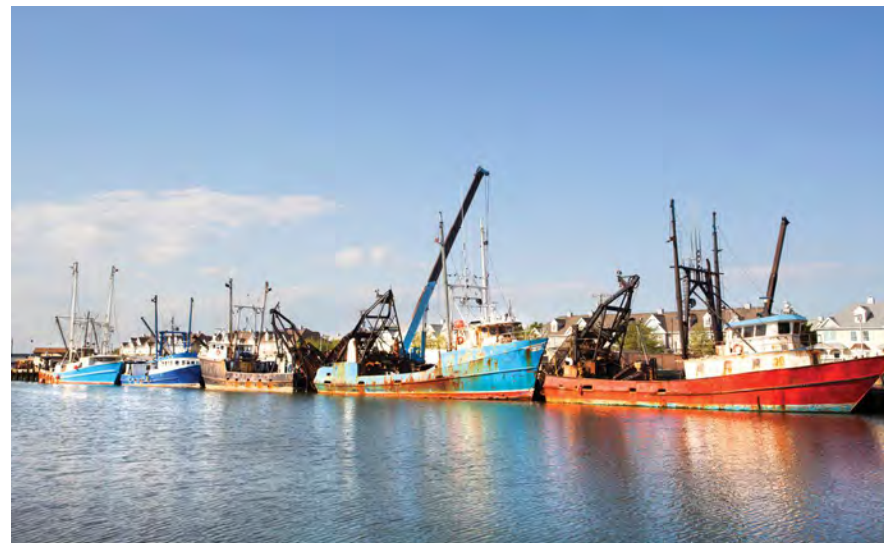
BOEM works with fishermen and Atlantic lease holders to implement BOEM [guidelines](#)⁴⁵ to lessees regarding fisheries communication, including fishery liaison and fishery representatives, as well

as methodologies for collecting pre-construction information on fisheries resources. BOEM also informs and solicits feedback on processes and projects from NOAA’s National Marine Fisheries Service (NMFS), the Regional Fishery Management Councils, and the Atlantic States Marine Fisheries Commission. As referenced above in Ocean Energy Action 3, BOEM has partnered with the National Academies in a number of ways that can contribute to these actions.

RPB lead entity: BOEM

Steps to accomplish this action include:

- A. Enhance existing public engagement strategies, especially those associated with fishing activities and resources and offshore wind plans and projects. Strategies include convening scoping meetings, open houses, environmental studies meetings, and forums; accepting public comment

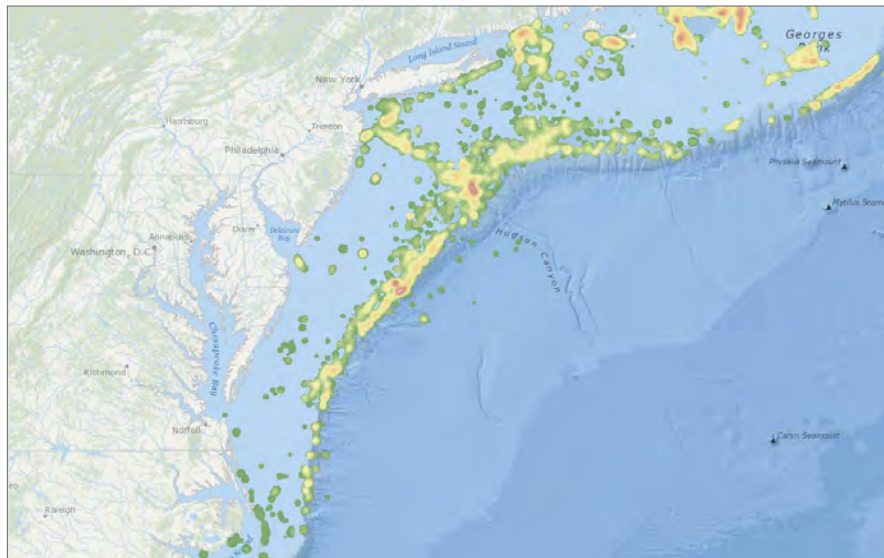


Fishing boats line the pier at Historic Gardner’s Basin in Atlantic City, New Jersey. Commercial fishing is important to coastal economies throughout the Mid-Atlantic. © JODI JACOBSON

- online; and consulting with stakeholders and partners in State, Tribal, and local governments, as well as Regional Fishery Management Councils. **(short-term and ongoing)**
- B. Continue to work with fishermen and Atlantic offshore wind lease holders in the implementation of BOEM guidance to lessees. **(short-term and ongoing)**
- C. More effectively communicate BOEM’s science strategy for fisheries studies in its annual Studies Development Plan.⁴⁶ **(short-term and ongoing)**

2.4.3 COMMERCIAL AND RECREATIONAL FISHING

Objective 3 – Foster greater understanding of the needs of Mid-Atlantic fishers and fishing communities in the context of the full range of ocean uses and conservation efforts.



Trawl fishing activity in the Mid-Atlantic 2011–2013.

Commercial and recreational fishing are important economic activities in the Mid-Atlantic region, and both are part of the region’s culture and sense of place. The Federal Government, Tribes, and the Mid-Atlantic States all have roles in the management of fishing activities.

From three to 200 nautical miles offshore, fishing is regulated by NMFS, based on recommendations from the MAFMC. The Council’s purview extends from New York to Cape Hatteras, North Carolina, but manages its resource throughout their range. The Atlantic States Marine Fisheries Commission coordinates regulations with the Federal Government and among the States for species that are primarily caught within State waters. The Atlantic Coastal Cooperative Statistics Program serves as a forum for collaboration between the Federal Government and States on the collection and sharing of data needed for fisheries management. Highly migratory fish species (e.g., tunas, large sharks, billfish) are managed directly by NMFS with advice from a public Advisory Panel. All fisheries management decisions are made during meetings open to the public, and there are substantial opportunities for public input prior to decision making. Ocean planning also includes the consideration of protected wildlife species that may interact with fisheries and fishing communities. Neither the Plan nor the RPB change the existing authorities or management regimes for fishing.⁴⁷

The following actions are intended to improve collaboration between the Federal Government, Mid-Atlantic States, and Tribes in relation to regional fisheries management. Most of the steps can be accomplished through regular convening of the relevant parties. In addition, the Data Portal is a source of information that can be used to identify

areas that particular fisheries are utilizing. This can help resource managers and project proponents gain a sense of the value of ocean space to different communities when considering decisions about the use of ocean space.

➤ COMMERCIAL AND RECREATIONAL FISHING

Action 1 – Improve the sharing of information and ideas between States, Tribes, Federal agencies, and Fishery Management Councils on fisheries science and management.

The following steps are intended to strengthen working relationships and improve collaboration between governmental entities that are responsible for fisheries management. Informal face-to-face meetings build mutual understanding and allow the exploration of ideas in ways that are difficult to achieve through conference calls, electronic communications, or in formal meeting settings.

RPB lead entities: NOAA and MAFMC

Steps to accomplish this action include:

- A. Convene annual meetings between regional NOAA and FWS leadership, MAFMC leadership, and State marine fisheries directors to identify shared interests and build collaboration. (**short-term** and **ongoing**)
- B. Offer to meet with Tribes to discuss fisheries management, and invite State officials to participate in meetings with Tribes. (**short-term** and **ongoing**)
- C. Explore with MAFMC the possibility of RPB members participating as technical advisors to



Fishing is an important part of the Mid-Atlantic region's culture, sense of place, and economy. © JASON HOUSTON

the Council's Ecosystem and Ocean Planning Committee for the purpose of identifying and monitoring fishing and non-fishing impacts on the environment and the impacts of other human activities on fishing. (**short-term** and **ongoing**)

➤ COMMERCIAL AND RECREATIONAL FISHING

Action 2 – Continue to actively engage stakeholders in fisheries science and management, and seek ways to make fishermen's knowledge available for planning.

The steps below are intended to improve understanding between stakeholders and government agencies on matters relating to fishing. They aim to help stakeholders understand the Federal regulatory process and help government agencies understand fishing and the information that fishermen have in order to improve management decisions.

RPB lead entities: NOAA and MAFMC

Steps to accomplish this action include:

- A. Convene fisheries and marine wildlife managers and recreational fishing leaders to discuss

concerns, provide information, and identify engagement opportunities. (**short-term** and **ongoing**)

- B. Work toward creation and funding of ongoing surveys and/or interview projects on Tribal and fishermen’s ecological and fisheries knowledge. (**short-term** and **ongoing**)
- C. Capture and reflect fishing community knowledge, including Tribal knowledge, in ocean management and data products and in the Data Portal, as appropriate. (**short-term** and **ongoing**)



Deepsea sportfishing is an important recreational activity and economic driver in the Mid-Atlantic. © ALEX GRICHENKO

➤ COMMERCIAL AND RECREATIONAL FISHING

Action 3 – Improve collaboration for the conservation of essential fish habitat.

This action is intended to improve collaboration among Federal agencies and MAFMC with regard to an important topic affecting fisheries management—the conservation of essential fish habitat. NOAA has already begun to work with its Federal partners and the Council to achieve this action.

RPB lead entities: NOAA and MAFMC

Steps to accomplish this action include:

- A. NOAA will provide additional training for Federal agencies in the identification and conservation of essential fish habitat. (**short-term** and **ongoing**)

2.4.4 OCEAN AQUACULTURE

***Objective 4** – Inform ocean aquaculture siting and permitting in the Mid-Atlantic through greater coordination among stakeholders and management authorities to address compatibility issues.*

Ocean aquaculture is the raising and harvesting of finfish, shellfish, or seaweed in a controlled setting, such as a netted pen or raft in the ocean. No aquaculture is conducted in exclusively Federal waters in the Mid-Atlantic at this time. Because Mid-Atlantic ocean aquaculture currently occurs only in nearshore waters, databases on aquaculture locations are maintained by the States.^{48, 49, 50}

➤ OCEAN AQUACULTURE

Action 1 – Use data and information in the Data Portal and other information sources advanced as a result of this Plan to support aquaculture siting and permitting.

To prepare for the potential emergence of aquaculture in Federal waters and to support more informed siting and permitting in State and Tribal waters, authorities charged with such siting and permitting can inform their decision making through review of ecosystem and human use information provided through the Data Portal and other information sources advanced as a result of this Plan, for example, the Ocean Acidification Monitoring Network when it is established (see Healthy Ocean Ecosystem Action 3).

RPB lead entity: NOAA

Steps to accomplish this action include:

- A. Refer potential applicants for aquaculture permits to the Data Portal as a source of information about factors affecting siting decisions. (**short-term** and **ongoing**)
- B. Seek to include adequate information on the Data Portal so that resource managers can identify potential intersections between aquaculture and other uses and marine wildlife. (**short-term** and **ongoing**)



An example of a marine cage aquaculture operation. This photo is from an aquaculture site in Maine, as there is currently no offshore aquaculture deployed in Mid-Atlantic waters. © NOAA

➤ OCEAN AQUACULTURE

Action 2 – Improve collaboration on ocean aquaculture.

Collaboration is a fundamental component of successful ocean planning, particularly for potential future uses such as ocean aquaculture. Therefore, this action fosters increased collaboration between NOAA and State and Tribal parties interested in ocean aquaculture.

RPB lead entity: NOAA

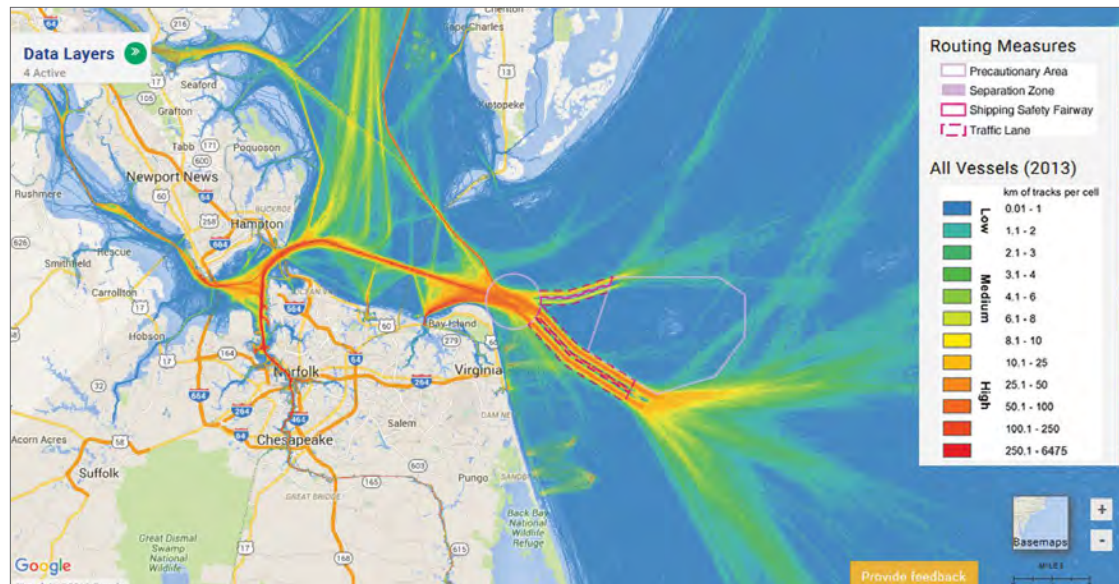
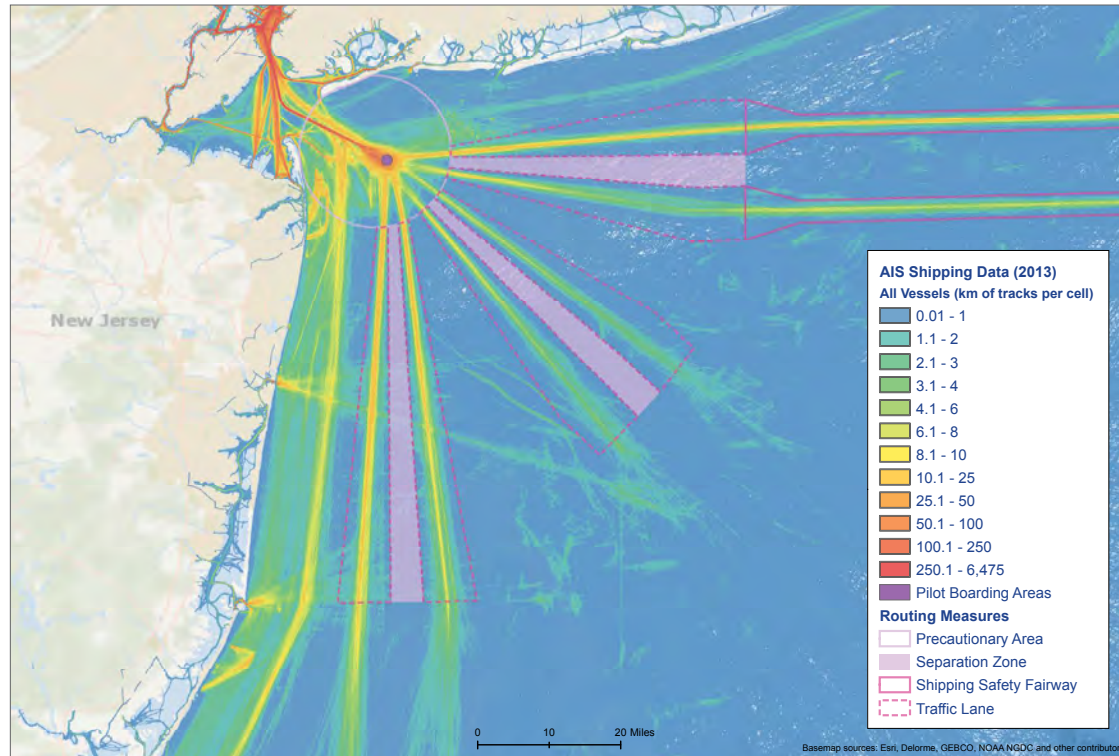
Steps to accomplish this action include:

- A. NOAA's regional aquaculture coordinator will coordinate with State aquaculture programs, Tribes, and Federal partners to identify and develop improved communication channels. (**short-term** and **ongoing**)

2.4.5 MARITIME COMMERCE AND NAVIGATION

Objective 5 – Enhance institutional awareness of the impact that maritime commerce exerts on the national and Mid-Atlantic economies and ensure that new and updated maritime commerce and navigational information is available at the local and regional levels, for integration into regional ocean planning.

The U.S. Marine Transportation System is a prominent use of ocean and coastal waters, providing jobs and economic security. Marine commerce in the Mid-Atlantic region is vibrant and economically vital to the region’s economy. Traffic is sufficiently heavy and complex to require internationally recognized **traffic separation schemes**,⁵¹ which help maintain safe and efficient shipping at the approaches to ports, including the Ports of New York-New Jersey, Delaware Bay, and Hampton Roads, Virginia. As land-based intermodal transportation systems become more congested, maritime commerce and marine highways⁵² are regularly evaluated as efficient, cost-effective means of surface shipping. This means that not only are marine commerce and navigation linked to other ocean uses, they are also linked to land-based transportation needs. As other existing and potential ocean uses like wind energy, aquaculture, and sand management require increasingly more ocean space, regional ocean planning and thorough navigation safety risk assessment will help optimize the efficiency of addressing competing ocean uses—including increased marine commerce—while mitigating risks to safety and the environment.



TOP: AIS shipping data representing vessel traffic at the approach to New York Harbor in 2013. **BOTTOM:** AIS shipping data representing vessel traffic at the approach to Hampton Roads/Norfolk, Virginia in 2013.

➤ MARITIME COMMERCE AND NAVIGATION

Action 1 – Monitor marine commerce trends and traffic patterns to identify and address emerging commerce and navigation needs.

This action will analyze vessel tracking data to identify when, where, and what types of shipping occur in the Mid-Atlantic. Providing planners and decision makers with the locations of traditional primary shipping lanes increases their understanding of the safety, environmental, and economic risks that involve shipping when evaluating the locations of proposed wind energy, aquaculture, sand borrow, and other permanent ocean activity sites. Regularly updated, detailed analyses of vessel traffic data over discrete time periods should demonstrate whether certain types of shipping are affected seasonally and/or on a long-term basis. This will allow decision makers to better time planned restrictions on, or potential disruptions to, shipping lanes when coordinating competing ocean uses.

RPB lead entities: USCG and U.S. Department of Transportation (DOT)

Steps to accomplish this action include:

- A. Annually review type-of-vessel categories to ensure that available data layers depict primary marine commerce vessel types, develop a process to review density layers of vessel types to identify changes in marine commerce trends and needs, and provide the findings to RPB member entities with authorities that influence marine commerce. **(underway and short-term)**



The Coast Guard works to minimize loss of life, personal injury, property damage, and environmental harm along our coasts. Here Coast Guard oversees the annual Chincoteague pony swim. © U.S. COAST GUARD

- B. Develop a data management process that provides timely, useful, and relevant vessel traffic data products for the Mid-Atlantic. **(underway and short-term)**
- C. Determine whether enhanced data analysis, like determining seasonal shifts in traffic patterns, is sustainable. **(underway and short-term)**

➤ MARITIME COMMERCE AND NAVIGATION

Action 2 – Maintain reliable ocean use data sets relevant to navigation.

The USCG and DOT will annually review data layers available on the Portal against known Mid-Atlantic human use activity layers. This ensures that emerging ocean uses, like aquaculture, or changing uses can be adequately considered when addressing their impacts to navigation. Existing data layers should also be evaluated for accuracy and relevance, providing data assurance to Data Portal users.



The Coast Guard provides a security zone for a shipment of liquefied natural gas. © USCG PHOTO BY PA3 DONNIE BRZUSKA

RPB lead entities: USCG and DOT

Steps to accomplish this action include:

- A. Develop processes to: (1) review available data layers that represent ocean use activities that influence or are influenced by navigation and marine commerce; and (2) review density layers of vessel types to identify changes in marine commerce trends and needs. (**short-term** and **ongoing**)
- B. Review the data layers identified in Step A annually, and provide information regarding needed data updates to RPB member entities with authorities that influence marine commerce. (**short-term** and **ongoing**)
- C. Develop a data management process that provides timely, useful, and relevant vessel traffic data products for the Mid-Atlantic. (**short-term**)

MARITIME COMMERCE AND NAVIGATION

ACTION 3 – Catalogue intersections between entities whose authorities influence marine commerce and navigation and identify opportunities for improved coordination.

NOAA, BOEM, DOT’s Maritime Administration (MARAD), USCG, USACE, and other Federal agencies have memoranda of understanding or agreement (and other implementing instruments) among themselves that guide coordination for siting, permitting, and overseeing various ocean activities. Similar agreements exist between Federal agencies, States, and Tribes, in part through Coastal Zone Management Act (CZMA) regulations and

agency outreach guidance. Additionally, the OCS Lands Act, Deepwater Ports Act, and other laws pose complex, intersecting authorities requiring careful coordination between Federal and State entities, and the public. By charter, the [U.S. Committee on the Marine Transportation System](#),⁵³ a Federal cabinet-level committee, serves as an effective policy coordination point across more than 30 Federal agencies and White House offices, including those listed above.

This action will catalogue coordinating agreements where ocean sectors/activities influence or are influenced by navigation, identify ocean uses that impact navigation for which coordination is absent or insufficient, assess whether implementation of formal coordinating instruments would improve interagency coordination and stakeholder involvement, and provide information, via the RPB, to relevant sectors.

RPB lead entities: USCG and DOT

Steps to accomplish this action include:

- A. Catalogue interagency coordination agreements that influence or are influenced by navigation. (**short-term**)
- B. Provide to the RPB a list of coordination gaps and other information for review and further distribution to appropriate entities. (**short-term** and **ongoing**)
- C. Develop a process to annually review RPB member entity coordination practices pertinent to ocean uses that influence navigation to identify opportunities to improve efficiency and stakeholder engagement. The results of this review should be sent to the RPB membership for review and consideration. (**short-term** and **ongoing**)

➤ MARITIME COMMERCE AND NAVIGATION

ACTION 4 – Identify impacts to navigation and port infrastructure stemming from the Panama Canal expansion.

The Panama Canal expansion project is creating ripple effects in the Mid-Atlantic, from the size of vessels to shifting trade flows. Deepening ports to accommodate larger vessels requires investments in dredging projects⁵⁴ and may require changes in ports, including realigning channels and modifying anchorages and turning basins. Providing planners and decision makers with anticipated shifts in vessel trends leads to better characterization of navigation needs of and risks posed by marine commerce. This action will identify impacts to navigation and port infrastructure stemming from the expansion of the Panama Canal by monitoring trends and marine traffic patterns, assessing impacts to marine commerce disruption or rerouting measures, and assessing coastal approaches against proposed port depths.

RPB lead entities: USCG and DOT

Steps to accomplish this action include:

- A. Monitor marine commerce trends and traffic patterns to identify and address emerging commerce and navigation needs, including changes to port infrastructure, primary cargoes, or cargo management practices. (**short-term** and **ongoing**)
- B. Identify and track Mid-Atlantic ports conducting navigation channel improvements and deepening or widening projects to assess impacts to marine commerce disruption or rerouting measures. (**short-term** and **ongoing**)



Crewmembers aboard Coast Guard cutter Sledge use the ship's crane to lower a new transformer down to Craighill Entrance front range light Aug. 25, 2014. Crew members from Aids to Navigation Team Baltimore help guide the transformer onto the structure by use of the tag line.

© U.S. COAST GUARD PHOTO BY PETTY OFFICER 3RD CLASS JASMINE MIESZALA

- C. Assess coastal approaches against proposed port depths to predict whether offshore transit routes will change. (**short-term** and **ongoing**)

2.4.6 SAND MANAGEMENT

Objective 6 – Facilitate enhanced coordination among coastal jurisdictions, Federal and State regulatory agencies, and Tribal entities on the use of sand and gravel resources in the Mid-Atlantic in the context of coastal adaptation and resilience planning and implementation.

Loss of sand from beaches, dunes, barrier islands, and diminishing coastal wetland habitat affects the coastal environment, public infrastructure, and tourism. Erosion from sea level rise and increasingly intense coastal storms could cause more rapid losses

of coastal sand. Beach nourishment and coastal restoration techniques that involve dredging off-shore sediment and placing the material within degraded systems continue to be the preferred long-term strategy identified for many Mid-Atlantic coastal communities to reduce storm damage to coastal infrastructure and restore ecosystem structure, function, and dynamic processes. Significant quantities of compatible sediment are needed to support these programs. However, these resources are finite and nearshore sediment off the coast of some States is limited. Also, extracting underwater sand resources can affect the benthic marine organisms through habitat change, changes in species interactions, and mortality of living marine resources from mining operations. The Federal OCS off the Mid-Atlantic region is characterized by a series of sand ridge and trough complexes, and other geomorphic features which may contain significant sand resources to support short- and longer-term needs.

There is a shared responsibility with respect to sand management in State and Federal waters in the Mid-Atlantic region between USACE and BOEM, particularly with respect to coastal storm risk management, ecosystem restoration, regional sand management, and research and development. BOEM has authority for managing the extraction of minerals on the OCS. USACE is the lead for Federal permitting activities related to mineral extraction in State waters, while States have authority over the seabed and other State-specific regulations.

This section focuses on sand management in the OCS for which BOEM has a sole management responsibility. BOEM will work to accomplish the above objective recognizing that the success of each action item cannot be fully realized absent USACE collaboration and partnership.

SAND MANAGEMENT

Action 1 – Promote strategic stakeholder engagement and regional partnering initiatives.

A number of Federal agencies perform and authorize activities associated with coastal sand management, including BOEM and USACE. USACE is involved with the planning, designing, and construction of Federal projects that promote healthy and resilient coasts through their Coastal Storm Risk Management and Ecosystem Restoration mission areas.⁵⁵ In addition, USACE regulates dredging in all navigable waters, including coastal state waters. BOEM has authority for managing the extraction of minerals on the OCS and is receiving an increasing number of requests for use of OCS sand resources as State waters are becoming depleted. Working together, Federal agencies, including BOEM and USACE, recognizes the importance of the resiliency needs of coastal communities while serving as stewards of our nation’s limited sand resources.

RPB lead entity: BOEM

Steps to accomplish this action include:

- A. Promote strategic stakeholder engagement with Federal, State, Tribal, and local partners to improve coastal planning and information sharing, implement effective and sustainable resource management strategies for OCS sand, and facilitate efficient processes to best serve the public’s short- and long-term coastal resilience needs. (**short-term** and **ongoing**)
- B. Serve as a liaison among Federal agencies, States, Tribes, and other stakeholders (e.g., through regional sand management working groups) to

facilitate communication, share information, and leverage resources to provide access to OCS sand resources in an environmentally sustainable manner. (**short-term** and **ongoing**)

➔ SAND MANAGEMENT

Action 2 – Develop a comprehensive inventory of sand resources to support planned and future restoration and resilience projects, provide availability for emergency use, and manage competing use challenges.

This action will further national-level stewardship of marine sand resources and help resource managers, scientists, Traditional Knowledge holders, and policy makers to: (1) identify potential sand resources in order to reduce potential conflicts with other uses of the OCS; (2) improve understanding of the shelf geomorphic systems that control sand distribution and character; and (3) make informed borrow site optimization decisions.

RPB lead entity: BOEM

Steps to accomplish this action include:

- A. Leverage BOEM’s Marine Minerals Program geodatabase to serve as a central repository for OCS sand resource data that it has collected, and continues to collect, through State cooperative agreements and environmental studies, to better facilitate offshore sand management. Make information on borrow site and potential sand resource locations available for use in the Data Portal. (**underway** and **short-term**)
- B. Use USGS sediment transport studies to advise on short- and long-term regional cumulative



The dramatic impacts from Hurricane Sandy in 2012 illuminated the need to more closely coordinate the management of sand resources across jurisdictions in our region. A property in the Rockaways, New York that was damaged as a result of that storm captures the sense of urgency. © NY DEPARTMENT OF STATE

impacts of offshore sand and aggregate resource extraction on stability of barrier islands and other coastal features. (**short-** and **long-term**)

- C. Develop strategic approaches to optimize OCS sand resource management by considering geological, engineering, economic, environmental, and dredge operation variables for multiple uses of borrow sites. (**long-term**)

➔ SAND MANAGEMENT

Action 3 – Conduct studies to support sustainable management of offshore sand resources.

A comprehensive understanding of the offshore geology and associated physical and biological processes within identified and potential OCS sand, gravel, and shell borrow sites on a regional scale is critical to responsibly managing use of these finite resources. To inform specific policy decisions regarding development of OCS sand, gravel, and

shell resources, BOEM develops and conducts scientific research under its Environmental Studies Program. Information obtained through these research investments is used to inform environmental analysis and leasing decisions concerning the use of OCS sand resources. The comprehensive inventory of sand resources, as described in Action 2, will also support the identification of geologic, environmental, and ecological research needs, and provide: (1) a regional baseline for benthic habitat assessment and monitoring; (2) a basis to eliminate environmentally sensitive or resource poor sites from consideration, including sites where sediment dredging could upset food resources of protected species; (3) information regarding previously unknown potential cultural resources requiring further

study; and (4) regional bathymetry for physical oceanographic modeling and impact assessment.

RPB lead entity: BOEM

Steps to accomplish this action include:

- A. Routinely collaborate through the BOEM Environmental Studies Program with other Federal agencies (e.g. USACE, USGS, NOAA, and FWS) and State and Tribal RPB entities with mutual study interests to leverage funds and maximize research project investments. Study investments will help fill data gaps and support the development, in collaboration with relevant resource agencies, of best management practices that minimize impacts to the marine ecosystem. **(short-term and ongoing)**
- B. Enhance access to a range of data and studies by linking the Data Portal to BOEM’s ESPIS. **(short-term and ongoing)**
- C. Use Data Portal information to inform both ecologically sustainable offshore sand extraction and placement, including information on non-consumptive recreation and other uses, when considering beach nourishment projects. **(short-term and ongoing)**



Aerial photograph of a beach nourishment project on Long Beach Island, New Jersey. © BOEM

➔ SAND MANAGEMENT

Action 4 – Identify and improve existing Federal-State interactions and cooperative agreements in the Mid-Atlantic.

This action will facilitate a regional sand resource management perspective through collaborative efforts to identify OCS sand resources through BOEM’s existing State Cooperative Agreements and

the Atlantic Sand Assessment Project, coupled with past and ongoing broad scale resource evaluation and environmental monitoring studies.^{56, 57, 58}

RPB lead entity: BOEM

Steps to accomplish this action include:

- A. Identify new and improve existing stakeholder relationships regarding coordination around beach nourishment and coastal restoration projects that utilize OCS sand resources. This effort is intended to improve efficiencies during project planning and analysis, including NEPA and associated regulatory consultations. (**short-term** and **ongoing**)
- B. Continue to collaborate with the USACE North Atlantic Division and relevant districts regarding coastal resiliency needs in the Mid-Atlantic region and to identify priority investments that best support both programs, including OCS sand resource assessment and evaluation, data gaps and science needs, environmental coordination and consultation, and other elements. (**short-term** and **ongoing**)
- C. Pursue future budget initiatives for State Cooperative Agreements to continue building the comprehensive inventory of OCS sand resources. (**short-term** and **ongoing**)

SAND MANAGEMENT

Action 5 – Engage fishing communities in planning and environmental review of proposed activities.

BOEM recognizes that commercial and recreational fishery interests and concerns related to OCS



Discharge pipe with screen, construction equipment, and hopper dredge. © BOEM

sand resource management are priority issues in the Mid-Atlantic region. BOEM engages with Mid-Atlantic stakeholder communities, such as commercial and recreational fishermen, on projects and topics related to OCS sand, gravel, and shell resources, both directly through project specific public involvement efforts and outreach initiatives (e.g., sand management working group meetings, stakeholder emails, and website updates) and indirectly through participation in multi-agency regional coordination efforts. Dredging sediment offshore may impact benthic habitat, and BOEM conducts essential fish habitat assessments and coordinates with NOAA to evaluate impacts to federally managed fish species and their habitats.



Sand is often taken from offshore to replenish eroding beaches of the Mid-Atlantic. Newly-planted dune grass helps to hold sand resources together. © ANDY KAZIE

RPB lead entity: BOEM

Steps to accomplish this action include:

- A. Communicate BOEM’s sand resource management strategy and prioritization of OCS sand resources to avoid use conflicts with fishing grounds. **(underway and ongoing)**
- B. Communicate BOEM’s science strategy for fisheries studies in its annual studies planning process and solicit feedback from fishery stakeholders on priority research gaps warranting study investments. **(short-term and ongoing)**
- C. Continue to inform and solicit feedback on processes and projects from NMFS and the Regional Fishery Management Councils and work together to develop best management practices to avoid and/or minimize fishery impacts associated with dredging of offshore sand resources. **(underway and ongoing)**

- D. Use data and information from the Data Portal and Plan to support enhanced engagement with commercial and recreational fishermen in planning and environmental review of proposed activities. **(short-term)**
- E. Identify potential conflicts or concerns through review of data used for scoping and environmental analyses, and work with fishermen to identify high use areas early on to avoid use conflicts. **(short-term)**

➔ SAND MANAGEMENT
Action 6 – Engage Tribes in planning and environmental review of proposed activities.

Tribal interests and concerns related to OCS sand resource management is an important issue in the Mid-Atlantic region. BOEM staff engages with federally recognized Tribes on projects and topics related to OCS sand, gravel, and shell resources, both directly through project specific Tribal consultations and outreach initiatives (e.g., sand management working group meetings, stakeholder emails, and website updates) and indirectly through participation in multi-agency regional coordination efforts. This action enhances engagement of Tribes in planning and environmental review of proposed sand activities (e.g., through identification of submerged cultural resources).

RPB lead entity: BOEM

Steps to accomplish this action include:

- A. Continue Tribal consultations for enhancing understanding of submerged cultural resources potentially impacted by OCS sand management. **(underway and ongoing)**

- B. Communicate sand resource management strategies to avoid use conflicts with Tribal uses and submerged cultural resources. (**underway** and **ongoing**)
- C. Communicate BOEM’s science strategy, and seek partnerships with other Federal and State agencies, for submerged cultural resource studies in its annual studies planning process and solicit feedback from Tribes on priority research gaps warranting study investments. (**short-term** and **ongoing**)
- D. Use data and information from the Data Portal and from Tribes to enhance planning and environmental review. (**short-term** and **ongoing**)
- E. Federal and State agencies should work with Tribes when possible early in the project planning process to identify submerged cultural resource areas of high significance and avoid use conflicts. (**short-term** and **ongoing**)

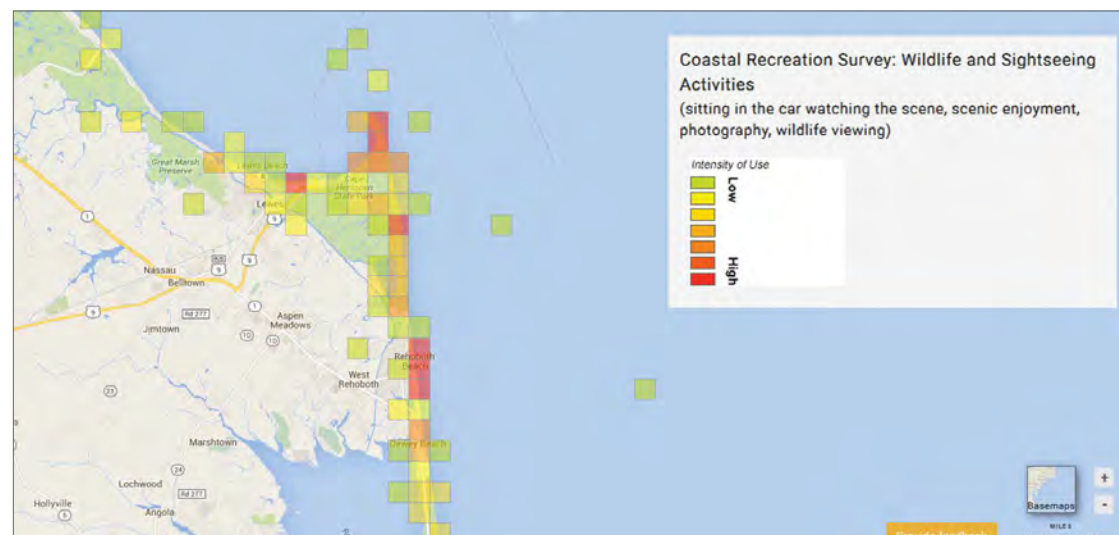
and whale watching, surfing, and scuba diving. Coastal tourism and recreational economies are dependent on the natural setting and resources, on public perception of the area and, ultimately, on the value people place on the use of these resources. The cultural and social values that people hold for coastal areas are not often accounted for in economic analyses. For example, one of the reasons tourists are drawn to coastal communities is a sense of well-being that can be gained when listening to waves or watching a beautiful sunrise. It would be helpful to gain an understanding of place-based values (i.e., what the existence of a coastal area means to people from a social or cultural perspective).

It should also be noted that extensive human coastal recreation without the use of best practices may have unintended adverse impacts on wildlife breeding, feeding, and resting. It is important to ensure recreational users are made aware of best practices to protect potentially affected species.

2.4.7 NON-CONSUMPTIVE RECREATION

Objective 7 - Account for the importance of nearshore and offshore non-consumptive recreational uses, and their local and regional economic contributions in the Mid-Atlantic; and in the management of other ocean uses and resources, consider impacts on non-consumptive recreational activities (e.g., surfing, boating, whale watching, birding, diving).

Non-consumptive recreation is any non-hunting or non-extractive recreational use that provides an experience rather than a product. Popular coastal non-consumptive activities include beach going, sightseeing, biking and hiking, photography, bird



Intensity of wildlife viewing activity in coastal Delaware.



TOP: Surfing on eastern Long Island, New York. © JOHN BEIL; AT RIGHT: Lewes, Delaware and other Mid-Atlantic beaches host family fun. © PEDRO LLAURO



➤ NON-CONSUMPTIVE RECREATION

Action 1 – Identify, characterize, and share information about measures to maintain the recreational value of important non-consumptive recreational areas and the activities they sustain.

The purpose of this action is to increase consideration of nearshore and offshore non-consumptive recreational uses and their local and regional economic contributions to the Mid-Atlantic in planning, management, and environmental and regulatory review actions.

RPB lead entities: New Jersey and USCG

Steps to accomplish this action include:

- A. Define, in collaboration with stakeholders, what it would mean for uses and areas to be considered high-value for non-consumptive recreation. A variety of factors may be considered (e.g., intensity of use, contributions to local economies, maintaining dark skies and natural sounds). Complete identification and mapping of such uses and areas. (**short-term** and **ongoing**)
- B. Identify and assess potential impacts and use conflicts to high-value recreational use areas and potential conflicts between recreational activities and marine and coastal wildlife. (**short-term** and **ongoing**)
- C. Work with USFWS to develop and disseminate guidance for recreational users on best practices that reduce potential impacts between recreational activities and marine and coastal wildlife. (**short-term** and **ongoing**)

- D. Identify and catalogue current Federal, State, and Tribal authorities, standards, and processes for maintaining safe recreational uses, as well as potential improvements to practices and processes. **(short-term)**
- E. Convene stakeholders, the public, and RPB entities throughout the region to review findings and improve communication to increase understanding of recreational uses with and between agencies, stakeholders, and the public. **(short-term and ongoing)**
- F. Develop and publicly post report(s) for Federal agencies, States, Tribes, and the RPB on potential improvements to practices and processes as determined necessary, feasible, and appropriate. **(short-term and ongoing)**

2.4.8 TRIBAL INTERESTS AND USES

Objective 8 – *Recognize and respect the right of Tribal Nations to free, prior, and informed consent while taking into account important Tribal uses and submerged cultural resources in the planning process.*

The Framework calls for the RPB to “recognize and respect the right of Tribal Nations⁵⁹ to free, prior, and informed consent while taking into account important Tribal uses and submerged cultural resources in the planning process.”

As noted in the Announcement of U.S. Support for the United Nations Declaration on the Rights of Indigenous Peoples, “the United States understands “free, prior and informed consent” to call for a process of meaningful consultations with Tribal leaders, but not necessarily the agreement of those leaders, before the actions addressed in those consultations are taken.”⁶⁰ Tribal Nations take a

contrary view and understand “free, prior, and informed consent” to call for a process of implementation whereby Indigenous Peoples have agreed to the activity that is the subject of the relevant decision.

The RPB recognizes this disagreement and anticipates that implementation of the Plan will nonetheless improve coordination and mutual understanding among Tribal Nations and the Federal Government.

This Plan promotes a Mid-Atlantic regional ocean planning culture that:

- Honors the inherent sovereign status and reserved rights of Tribes.
- Supports Tribes in pursuing the vitality of their culture and economy as these relate to the ocean.
- Promotes collaborative ocean and cultural resource management.



Paddlers taking out mishoon during the 2012 Shinnecock canoe journey. © MICHAEL HELLER



Gerrod “Roddy” Smith, of the Shinnecock Indian Nation, addresses a meeting of the Mid-Atlantic RPB. © JOE MILMOE, USEFWS

- Supports the use of Traditional Knowledge.
- Respects Tribal connections to traditional lands and waters.
- Seeks to enhance and maintain important relationships with Federal and State agencies, Tribes, and MAFMC.

To accomplish this, Federal agencies and States will actively work to improve collaboration and coordination with Tribal governments.⁶¹ Actions 1 through 5 below aim to increase coordination among Federal agencies, States, and Tribes for integrated management efforts, while Actions 6 and 7 below aim to document and foster shared understanding of Mid-Atlantic ocean and coastal sites important to Tribal use, beliefs, and values.

➤ TRIBAL INTERESTS AND USES

Action 1 – Identify, review and, if appropriate, recommend updates to Tribal consultation policies as they pertain to ocean planning.

The purpose of this action is to develop comprehensive consultation policies that contribute to ensuring free, prior, and informed consent of Tribal entities in the ocean planning process.

RPB lead entities: Shinnecock Indian Nation and Pamunkey Indian Tribe

Steps to accomplish this action include:

- A. Compile and review Tribal consultation policies from Federal and State agencies. (**short-term**)
- B. Identify how agencies can improve existing

policies and provide outreach to Tribes about how to engage with agencies under existing/ improved policies for topics such as resilience planning, sustainable fisheries management, submerged cultural resources, energy independence, and application of Traditional Knowledge for planning, management, and decision making. (**short-term** and **ongoing**)

➤ TRIBAL INTERESTS AND USES

Action 2 – Develop Tribal and agency ocean planning contact directories.

It is currently difficult for Tribal entities to identify agencies and contacts involved in ocean planning, and it is equally difficult for Federal and State staff to contact Tribes. The purpose of this action is to develop a list of agencies and programs related to marine activities from the Federal agencies and/or States, and a corresponding list of Tribal contacts. Contacts should be able to serve as informational resources to help Tribes find the right persons in a Federal agency or State government to address questions or concerns.

RPB lead entities: Shinnecock Indian Nation and Pamunkey Indian Tribe

Steps to accomplish this action include:

- A. Develop a directory of Tribal contacts, including both environmental and historical preservation Tribal contacts, as well as a process for updating the current status of contact information for all federally recognized and State recognized Tribes in the Mid-Atlantic region that wish to participate. (**underway** and **short-term**)

- B. Develop a directory of contacts in Federal agencies and State governments to post on the RPB website, including State Historic Preservation Officers (SHPOs) and Tribal Historic Preservation Officers (THPOs), as well as a process for updating the current status of contact information. (underway and short-term)

➤ TRIBAL INTERESTS AND USES

Action 3 - Work with Tribes to develop a Tribal Ocean Planning Network to facilitate coordination between Mid-Atlantic and Northeast Tribes in the ocean planning process.

The purpose of this action is to increase Tribal participation in the regional ocean planning process and to enhance the capacity of Tribes to build relationships that will support development of Tribal regional ocean planning goals, research agendas, and long-term ocean and/or coastal management plans.

RPB lead entities: Shinnecock Indian Nation and Pamunkey Indian Tribe

Steps to accomplish this action include:

- A. Develop a Tribal Ocean Planning Network by coordinating with the RPB Tribal Co-Lead from the Mid-Atlantic (in consultation with Tribal Co-Leads in the Northeast) and explore opportunities for additional facilitation support. (short-term)
- B. Identify delegates and alternates to the Tribal Ocean Planning Network from all federally recognized and State recognized Tribes in the



The Shinnecock people fashion local quahog and whelk shells into beads to create wampum. Historically, these were used as a medium of currency among eastern native peoples and were even used as a medium of exchange by early European settlers. © SHINNECOCK INDIAN NATION, WORDSMITH.ORG

Mid-Atlantic and Northeast regions, to engage in Tribal Ocean Planning Network activities including operating a communication list-serve, hosting webinars, and holding sideline meetings at annual Tribal conferences such as the National Congress of American Indians, and the United South and Eastern Tribes. (short-term and ongoing)

➤ TRIBAL INTERESTS AND USES


Action 4 - Enhance understanding of Tribal rights.

Tribes will facilitate access for Federal agencies and States to information about reserved Tribal rights or Tribal rights that have been established through common law.

RPB lead entities: Shinnecock Indian Nation and Pamunkey Indian Tribe

Steps to accomplish this action include:

- A. Post historical, legal, and other documents detailing Tribal rights on the RPB website or similar media; documents will include a timeline of Treaties with Tribes in the region specific to marine uses. (**short-term**)

 **TRIBAL INTERESTS AND USES**
Action 5 – Federal and State governments meet with Tribes to discuss issues related to Tribal participation in regional ocean planning and management, including policy and technical matters and grant opportunities.

The purpose of these meetings is to share perspectives, discuss best practices for government-to-government consultation, and engage Tribal Traditional Knowledge holders. These meetings will enhance formal consultations by building relationships and mutual understanding.


RPB lead entities: Shinnecock Indian Nation and Pamunkey Indian Tribe

Steps to accomplish this action include:

- A. Federal agencies contact the Tribes in the Mid-Atlantic region to seek informal meetings. (**short-term** and **ongoing**)
- B. Convene Federal and State governments for an informal meeting with Tribal government officials at least annually for a minimum of five years. The meetings should take place at a mutually agreed

upon location that does not require excessive travel for Tribal participants and include a discussion of grant opportunities for Tribes, as well as training on use of the Federal grant portal to find Tribal funds. (**short-term** and **ongoing**)

- C. Share reports of meetings with the RPB. (**short-term** and **ongoing**)

 **TRIBAL INTERESTS AND USES**
Action 6 – Account for Tribal historic resources under the National Historic Preservation Act.

Improving the current practice of actively engaging Tribes through the NHPA process will help Federal agencies implement any best practices for government-to-government consultations that result from the Plan. This concept is also described in section 2.1.5, best practices to enhance Federal-Tribal coordination. During initial components of formal review under existing authorities (e.g., regulatory consultations under NHPA), agency coordination is a key tool that can result in more informed decision making. It is the process of early coordination that allows for participating agencies and Tribes to articulate any issues they are likely to address in formal review under NHPA. Sharing these issues early on can help to avoid and minimize adverse impacts to resources and uses, as well as identify and provide direction on additional information that may be required.⁶² A more specific example of this concept is illustrated in Ocean Energy Action 5 related to improving consultations and communication with Tribes in the region.

RPB lead entities: Shinnecock Indian Nation and Pamunkey Indian Tribe

Steps to accomplish this action include:

- A. Engage Tribal historic preservation offices in updates of the Plan and ongoing regional ocean planning, to ensure that historic and cultural resources are accounted for and to enhance any NHPA consultations that may be needed for future projects. **(long-term)**

TRIBAL INTERESTS AND USES
Action 7 – Identify and address data gaps pertaining to Tribal use of the ocean.

The purpose of this action is to place Tribal data on the Data Portal and other Federal, State, and regional planning portals as approved by Tribes. Any Tribal data on these portals will increase the visibility of Tribes in the planning process. Data contributed by Tribes is solely for the purpose of ocean planning, and may be subject to advance security protocol to protect Tribal interests.

RPB lead entities: Shinnecock Indian Nation and Pamunkey Indian Tribe

Steps to accomplish this action include:

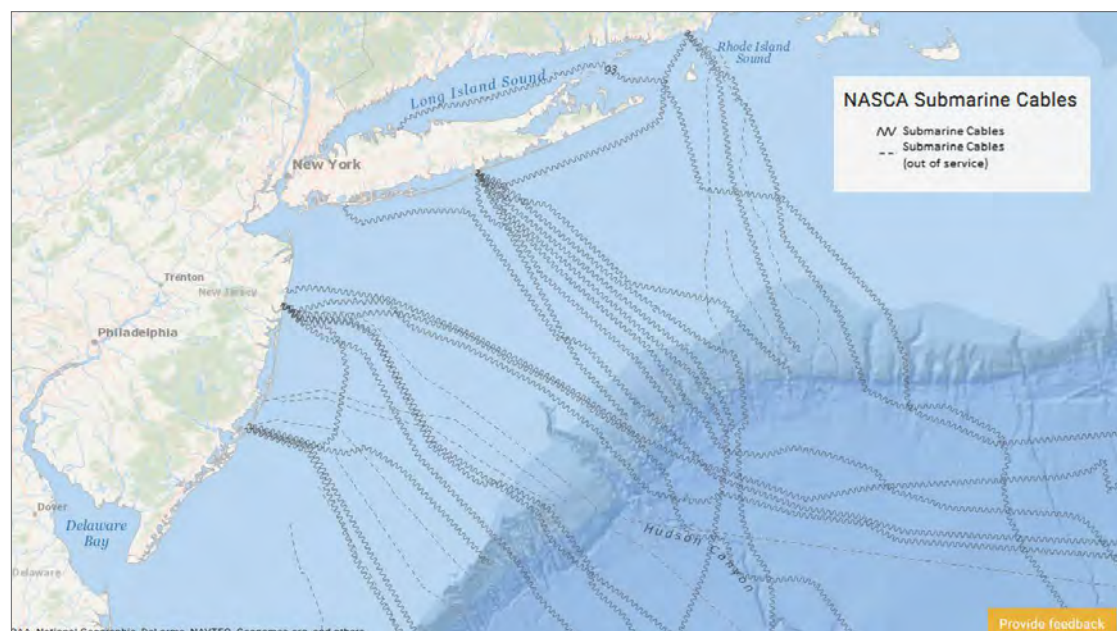
- A. Conduct PGIS workshops to engage Tribes in generating geospatial data mapping products. **(short-term and ongoing)**
- B. Develop a plan for future cultural and natural resource research to address Tribal interests including geospatial information on Tribal use, critical species and habitats, and submerged cultural resources. **(short-term and ongoing)**

- C. Develop best practices on the appropriate use of Tribal historical, archeological, and spiritual information compiled during the ocean planning process. **(long-term)**

2.4.9 CRITICAL UNDERSEA INFRASTRUCTURE

Objective 9 – Facilitate greater understanding of the current and potential future location of submerged infrastructure, such as submarine cables (e.g., for communication and electricity) and pipelines.

Undersea infrastructure refers to equipment and technology placed on the ocean floor. This infrastructure includes cables for telecommunication and power transmission and stationary equipment for



North American Submarine Cable Association submarine cable locations in the Mid-Atlantic.

scientific research. Submarine cables are extremely important for modern society; telecommunication cables transmit between 97–99 percent of international digital and voice communication. Most cables are buried three to six feet below the seabed. As cables are taken out of service, they are generally not removed; however, some States are now including removal requirements in installation and/or lease contracts. In the future, any development of off-shore wind energy farms would require multiple power cable systems to be laid.

In addition to submarine cables, many important pieces of scientific equipment are deployed on or anchored to the seafloor in the Mid-Atlantic. This infrastructure provides important information about real-time atmospheric and oceanographic conditions at sea and along the coast, such as tides, air temperature, water temperature, wave height, and wind speed. Instruments deployed for long periods of time provide time series data that help track changing conditions and aid in the study of climate change, natural environmental variability, and impacts from other human activities. Some of the data from at-sea equipment can be viewed real-time and downloaded online through MARACOOS.

 **CRITICAL UNDERSEA INFRASTRUCTURE**

Action 1 – Engage the submerged pipelines and submarine cables industries to understand their current and projected needs for ocean space, and conduct an inventory of obsolete structures.

The Portal Team, representatives of other regional ocean data portals, and MarineCadastre.gov

partnered with the North American Submarine Cable Association (NASCA) and published new data depicting the locations of submarine cables owned and operated by NASCA members (e.g., Sprint, Verizon, and AT&T). The majority of these are fiber optic telecommunications cables. The data were obtained via a highly restrictive data sharing agreement between NOAA and NASCA, allowing data to be viewed but not downloaded by Data Portal users. Since the exact locations of cables are proprietary for reasons of homeland security, cables within 100 meters of landfall were removed, as were portions of the cables outside the EEZ, and there is a maximum scale at which the cables may be viewed.

RPB lead entities: Full RPB⁶³

Steps to accomplish this action include:

- A. Obtain data to support regional ocean planning efforts, including the identification of in-service versus out-of-service pipelines, pipeline name, and owner information. (**short-term** and **ongoing**)
- B. Reflect that information through the Data Portal. (**short-term** and **ongoing**)
- C. Update NASCA cables data in the Data Portal as needed. (**long-term** and **ongoing**)

 **CRITICAL UNDERSEA INFRASTRUCTURE**

Action 2 – Ensure early consultation with relevant undersea infrastructure interests in the regulatory review of marine development projects.

Project proponents and regulatory agencies can use maps of human activities and infrastructure, such

as maps of cables, pipelines, and other undersea infrastructure to avoid conflicts with proposed development activities. Best practices outlined in section 2.1 describe how the early and coordinated use of data and information in the Plan and Data Portal by agencies, project proponents, and stakeholders can inform effective regulatory review.

RPB lead entities: Data and information in the Plan and Data Portal will be available to all RPB member entities to help inform planning and conducting environmental review of proposed new undersea infrastructure projects.

Steps to accomplish this action include:

- A. Use data and information from the Plan and Data Portal to inform regulatory review of marine development activities related to undersea infrastructure. (**short-term** and **ongoing**)

2.5 ENHANCING COASTAL ZONE MANAGEMENT

Under the CZMA, Federal actions outside a State's coastal zone, which have reasonably foreseeable effects on any coastal use (land or water), or on natural resources of the coastal zone, must be consistent with the enforceable policies of that State's federally approved coastal management program, in accordance with the applicable subpart of NOAA's CZMA regulations at 15 C.F.R. Part 930. The RPB is interested in addressing potential options to make CZMA decisions in a more efficient, streamlined, and coordinated manner. NOAA and the Mid-Atlantic States may choose to further develop these [options](#)⁶⁴ most likely in coordination with the NE RPB, which is also exploring these options.



Resource managers strive to balance the conservation and development of coastal resources using the Coastal Zone Management Act for the benefit of communities like Ocean City, Maryland, pictured here. © CHRIS PARYPA

In summary, the options include:

- **Earlier Federal Notice to States and Tribes.** The Federal agencies could develop mechanisms to provide earlier coordination and communication with States and Tribes for actions proposed by Federal agencies and actions proposed by non-Federal applicants for Federal authorizations, or actions having Federal funding. The overall objective is for Federal agencies to provide notice to States and Tribes as early as practicable, before the minimum timeframes set forth in the CZMA and NOAA's CZMA regulations.
- **Improve States' ability to execute CZMA Federal Consistency in the offshore space.** CZMA regulations contain provisions that may be used to facilitate Federal Consistency reviews. The CZMA regulations provide for early coordination between the Federal and State agencies and include requirements that States must meet to review federal license or permit activities in federal waters, including an analysis that supports the State agency's assertion that coastal effects are reasonably foreseeable.



“My soul is full of longing for the secret of the sea, and the heart of the great ocean sends a thrilling pulse through me.”

- HENRY WADSWORTH LONGFELLOW

[Chapter Three]

Science, Data, and Tools to Support Decision Making

Scientifically supported data and information are the foundation of the Plan. The region has developed and continues to enhance a significant body of spatial data and other information to inform the interjurisdictional coordination actions that the RPB has described in Chapter Two. At the same time, a number of actions identify additional science, research, and traditional and local knowledge that is needed to more effectively address regional ocean management priorities. The Plan also identifies additional baseline data and information needed to better characterize the region's marine environment and socioeconomic conditions, as described below.

This chapter describes the Data Portal, spatial data, and data tools developed with support from MARCO, and other partners that are accessible through the Data Portal. It also describes actions to identify and address regional data, science, and research needs. RPB members intend to use the tools described in this chapter to inform their activities under existing authorities as described in section 2.1 above.

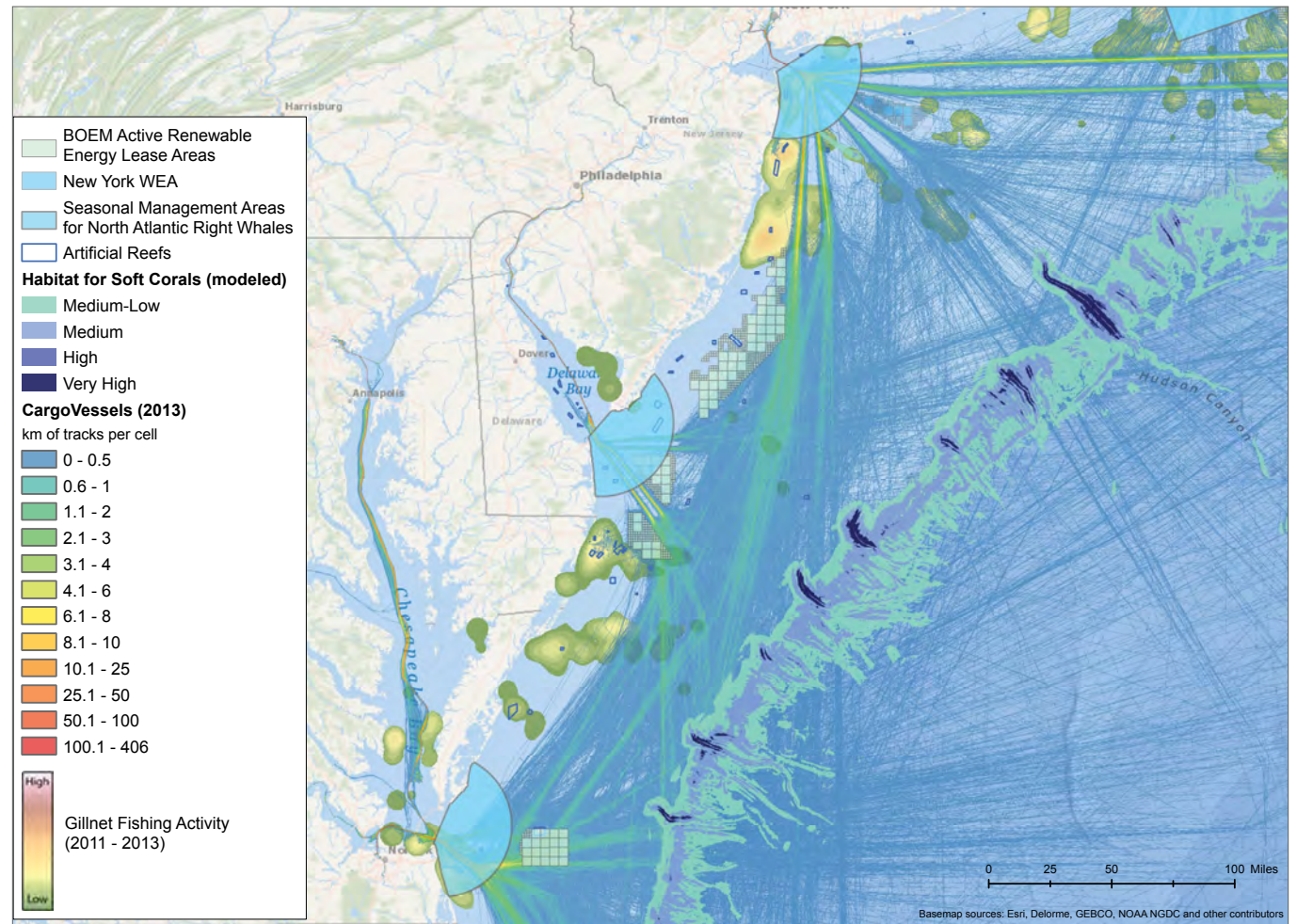
3.1 MID-ATLANTIC OCEAN DATA PORTAL

The [Data Portal](#)⁶⁵ is a key resource that informs ocean planning in the Mid-Atlantic. The Data Portal provides a centralized, public location for interactive

ocean mapping and information focused on the Mid-Atlantic region. It enables Federal, State, Tribal, and local decision makers, as well as the general public, to visualize and analyze ocean resources and human use information such as fishing grounds, recreational areas, shipping lanes, habitat areas, and energy sites. Maps created on the Data Portal can illustrate interactions among a wide range of natural features and human activities.

The Data Portal was initiated by MARCO with funding and support from NOAA and in collaboration with other Federal and regional partners. MARCO's Ocean Mapping & Data Team (OMDT) continues to provide input on its development. The Portal Team, which developed, launched, and maintains the Data Portal, works closely with NOAA

Maps created on the Data Portal can illustrate interactions among a wide range of natural features and human activities.



Wind energy, fishing, marine life, and transportation activity in the Mid-Atlantic.

and BOEM, partners that operate and maintain the [Marine Cadastre](#),⁶⁶ which is an authoritative national scale online data repository and viewer, called for in the Energy Policy Act of 2005. BOEM and NOAA have taken a leadership role in the effort to build and enable geographic information for a broad range of users in the energy and ocean community. By listening to the needs of these communities and

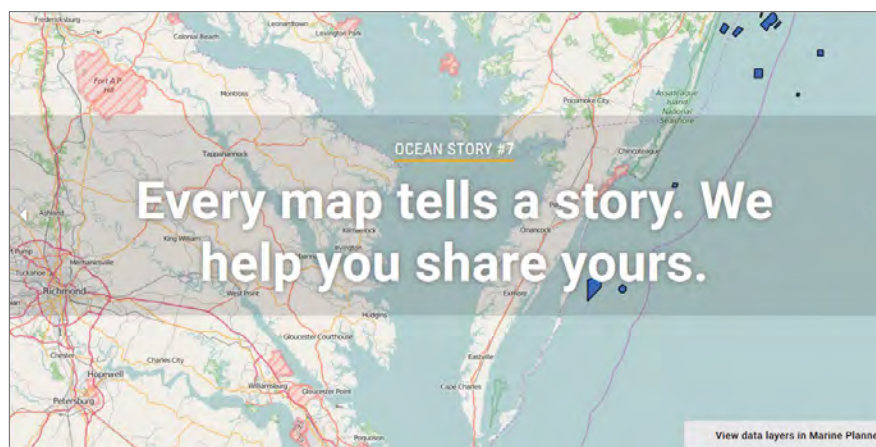
by employing the best information technology practices, the Marine Cadastre has evolved into a nimble resource that serves the nation's offshore geographic information needs, and provides authoritative data to regional ocean planning portals. Several of the layers on the Data Portal's data layers are served directly from this site, and intensive collaboration on data development reduces costs

and increases efficiency in meeting complementary national and regional goals. In addition, the Data Portal addresses the demand for regional scale data layers that would not be of great interest or relevance to the national scale users nor the mission of MarineCadastre.gov. Similarly, the Portal Team works with State-based ocean data portal staff to achieve appropriate alignment and efficiencies between regional and State scale data development work. Longer-term maintenance of the Data Portal is discussed further in section 3.2.1.

3.1.1 OVERVIEW AND SUMMARY OF DATA PORTAL CONTENT

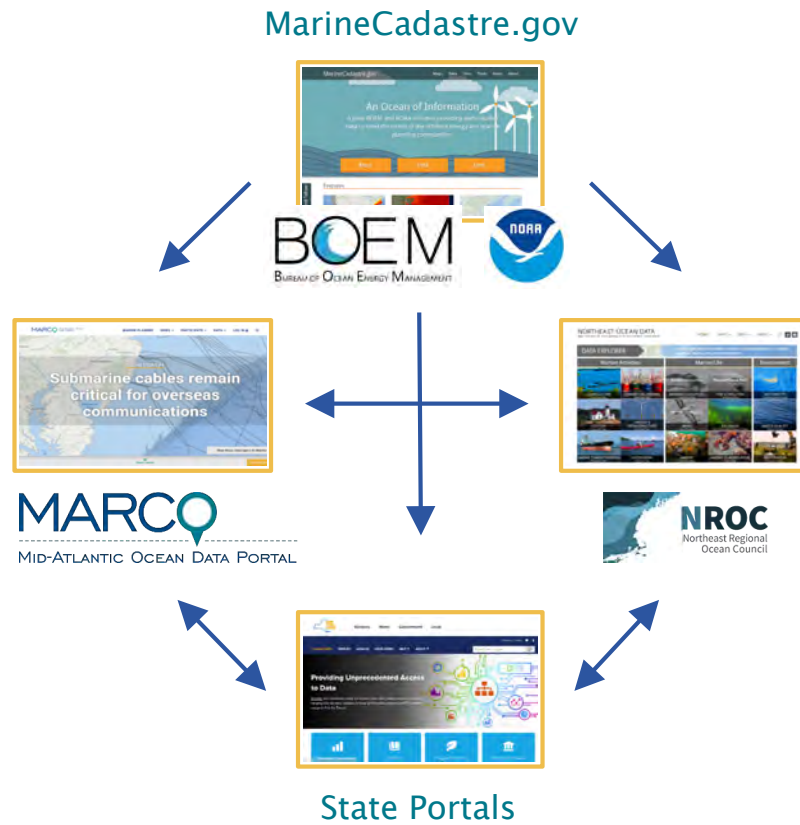
The Data Portal includes an online mapping tool called the Marine Planner and a data catalogue that offers access to over 150 spatial data layers. Since its launch in 2010, the Data Portal has served as a central location where data previously housed in separate places can be viewed together and combined in ways that can be tailored to the viewer's area and topics of interest. The Data Portal's layers have been carefully selected and enhanced to inform the dialogue and decision making needed to advance Framework goals and objectives, but not to provide an exhaustive catalogue of all the region's spatial data or duplicate other online mapping resources.

Many of the Data Portal's layers were created with existing data developed by Federal agencies and compiled by Federal agencies, States, Tribes, and universities, while some data were created specifically for the Data Portal with stakeholder participation and assistance. The data are grouped into themes that reflect regional priorities:



TOP: Many of the Data Portal's layers were created with existing data developed by Federal agencies such as NOAA, whose work in ocean exploration, as shown here, expands our understanding of the Mid-Atlantic's biologically important submarine canyons and other seafloor features. **BOTTOM:** The Data Portal includes an online mapping tool called the Marine Planner and a data catalog that offers access to over 150 spatial data layers.

- Administrative Boundaries
- Fishing
- Marine Life
- Maritime
- Recreation
- Renewable Energy
- Security
- Oceanography



Relationship among Federal, Regional, and State Portals.

A ninth theme contains map layers that integrate data from multiple regional themes, such as synthesis products on human uses, living marine resources, and habitats. Currently, the Data Portal includes headquarters for Tribes in the region, with future work anticipated to develop additional Tribal data layers (see Appendix 5 for more information on Tribal engagement for data development).

Expertise and guidance for development of the Data Portal is provided by MARCO’s OMDT, which is comprised of approximately 20 Federal, State,

Tribal, and academic partners who review candidate data layers proposed for addition to the Data Portal and provide recommendations to MARCO’s Management Board for approval (because MARCO currently manages the Portal). The OMDT established criteria that ensure data layers that are directly relevant are incorporated and keep the Data Portal accessible and easy to navigate for non-technical users. These criteria are:

- Relevance for regional planning
- Methodological rigor
- Acceptable metadata standards
- Geographic extent (generally should cover entire Mid-Atlantic region)
- Development using the best available information

Appendix 2, Mid-Atlantic Ocean Data Portal Sources and Supporting Information, includes these criteria and a list of layers organized by theme and the following data type categories:

- Jurisdictions and boundaries
- Data showing discrete locations of natural and built features (e.g., artificial reefs, and coral points)
- Derived data (e.g., maps showing overall ship traffic or fishing patterns)
- Model-based products (e.g., predictive models for marine wildlife)
- Participatory mapping projects sourced from ocean users

The data layer list in Appendix 2 also includes summary information about data sources and development and review processes for each layer.

All Data Portal data have been reviewed by a combination of Federal and State agency staff, stakeholders, industry, and academic experts. They are linked to metadata with details on data sources and processing methodologies to assure transparency and compliance with Federal standards.

The Data Portal provides easy access to summary information about each data layer, detailed metadata, and the ability to download most data layers in a variety of formats with just a few mouse clicks. The Data Portal also allows users to register and gain access to additional functionality, including a drawing tool for creating new map shapes and data, and the ability to bookmark and share customized map views. A new data import feature enables users to combine their own data with official Data Portal data to support specific planning and decision making processes. For example, the boundaries of an ocean development proposal can be imported and viewed in the context of existing human uses and ecosystem features for that area. Additional user friendly functions include the ability to create online communities for informal sharing of maps and shapes that are created by using the Data Portal's drawing tool. The site is also regularly updated with articles about Data Portal layers, educational stories featuring the region's ocean uses and stakeholders, and calendar listings for upcoming webinars and other relevant information.

The Portal Team works with MARCO and the RPB to engage the public in data review and training for use of the Data Portal through workshops, webinars, and other outreach activities. This engagement helps to set priorities for Data Portal enhancement and better reflect and support Mid-Atlantic ocean planning and identification of priority information

and data gaps. Descriptions of the marine life and human use data synthesis projects are presented below in section 3.1.2 as examples of how MARCO worked with contractors and partners to address some of the gaps identified during development of the Plan.

While data development efforts are ongoing, data gaps do remain and the RPB is aware that there are further data development needs for the Data Portal. For marine life, these include benthic macro-invertebrates like scallops, surf clams, ocean quahogs, and lobster, as well as large pelagic fishes like tunas, billfish, and sharks. Movement and migration data are also not yet incorporated into the Data Portal. For human uses, gaps include recreational fishing data and sand resource data. In some cases, efforts are underway to attain and integrate comprehensive data sets to fill these gaps. Stakeholders and managers in the region should be aware that the Data Portal is a continuously improving platform. In addition, the RPB and Portal Team welcome feedback about new and improved data sets.

3.1.2 MARINE LIFE DISTRIBUTION AND ABUNDANCE PRODUCTS

Building on work initiated as part of the Northeast regional ocean planning process, the Marine Life Data and Analysis Team (MDAT; composed of Duke University, NOAA, and Loyola University) developed base layer predictive model products for 29 marine mammal species or species guilds and 40 avian species, and distribution and abundance maps for 82 fish species for the Mid-Atlantic. The marine mammal and avian products are habitat-based density estimates that incorporate several physical

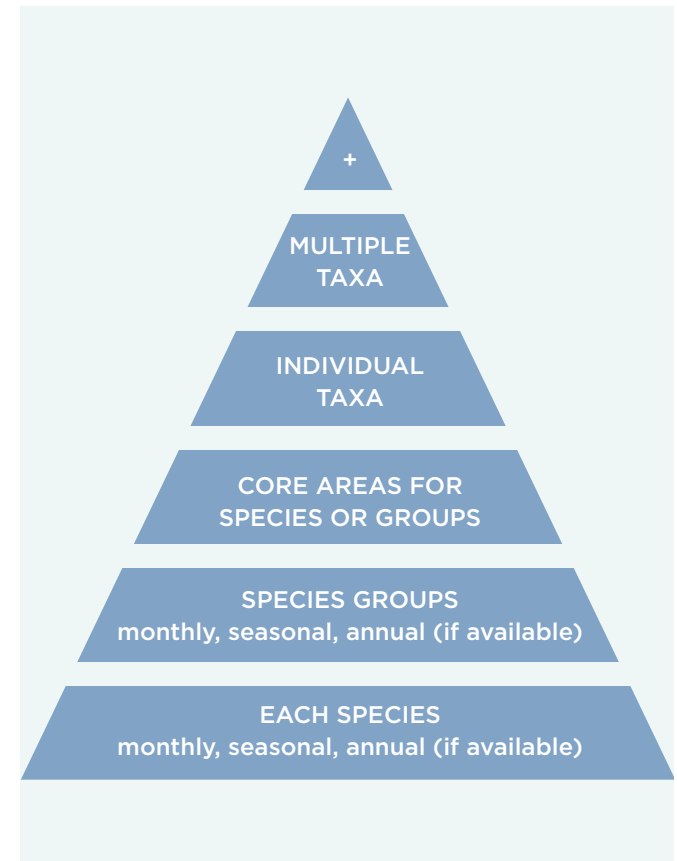
A new data import feature enables users to combine their own data with official Portal data to support specific planning and decision making processes.

and biological habitat parameters and were created for the whole East Coast. The fish species data products are derived from several fishery independent spring and fall trawl surveys, spanning from Cape Hatteras, North Carolina to the Gulf of Maine.

These new marine life data products fill critical gaps. They can be queried to help answer questions about the distribution and abundance of specific species in areas of interest to ocean planners and resource managers. The marine mammal and avian model outputs also predict abundance of individual species or groups during any specific season or month of interest. Careful consideration must be given to interpretation of all base layer products. Uncertainty products that show variance and statistical confidence of the model predictions are provided for each species and group, and section 2 of the [Mid-Atlantic Marine Life Data Analysis Team Report](#)⁶⁷ (see Appendix 5) describes the methods and review processes for these base layer products with caveats and considerations detailed for each taxa and product.

The MDAT project produced over 3,000 publically available spatial data layers. These layers can be thought of as a reference library, with species-specific products available to be viewed and queried when detailed research is required for agency decision making. Because base layers total in the thousands, efforts to develop a general understanding of the overall richness or diversity in a particular area are not well served by the base products. To address this gap, several types of “synthetic,” or summary aggregate map products were developed.

Summary aggregate products are comprised of more than one species, and were created to allow



The full suite of marine wildlife products can be thought of visually as a pyramid. At the base of the pyramid, there are species-specific products, which can be useful for management decisions involving a single species of interest. Higher up the pyramid there are species groups, followed by intra- and inter-taxa derived aggregate products at higher levels, which may be informative for larger scale planning purposes.

quick access to map summaries about potential biological, management, or sensitivity groups of interest. Species were grouped in these three categories, resulting in approximately 27 avian groups, 12 fish groups, and nine mammal groups. Maps representing abundance (number of animals), biomass (weight of animals), and richness (number of different species) were created. The concept

of core areas was developed to identify planning area subsets where these values were particularly concentrated. Core area maps were developed at an East Coast-wide scale, as well as separately at the Northeast and Mid-Atlantic scales, to highlight core areas for species and species groups using a 50 percent population threshold (i.e., the smallest area containing 50 percent of the species' total predicted abundance (or biomass for the fishes). Core area layers were then aggregated to identify core areas for species groups based on abundance, biomass, and species richness. It should be noted that core area maps, developed from surveys, may not detect important but ephemeral migratory pathways for organisms such as birds, bats, marine mammals, and fishes. The RPB recognizes this as an area for further work in the future.

Synthesis products provide a means to distill hundreds of data layer and time period combinations into more simplified maps that supplement the base-layer reference library. These summary products are useful tools for seeing broad patterns in the underlying data or model results. They also provide ocean resource managers and stakeholders with the ability to quickly identify the key ecological characteristics of a particular ocean location and the specific species layers that may require more attention, consideration, or study.

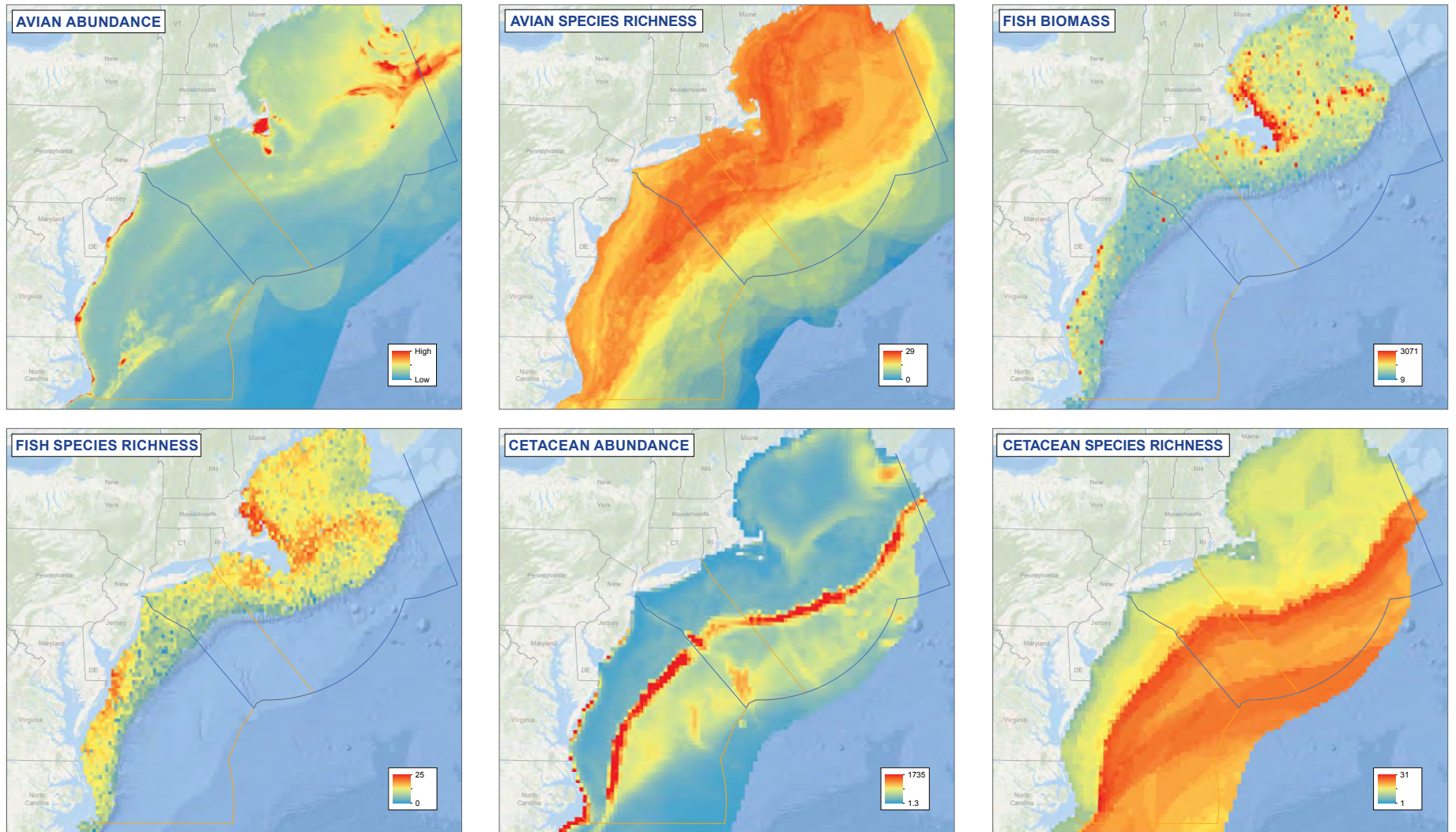
In addition to the individual species layers and summary products described above, multi-taxa products were developed to address broader ecosystem questions. These products were integrated with data from outside of the MDAT modeling work, such as data on benthic habitats, canyons, and deep-sea corals to facilitate development of methods to identify potential ERAs.⁶⁸ MDAT continues to work with MARCO and Mid-Atlantic RPB members



New marine life data products developed by MDAT depict abundance of individual species such as the Common Dolphin (*Delphinus delphis*), photographed here during the SEFSC Summer research cruise 55 nm offshore Virginia. © NOAA FISHERIES, 2011. PERMIT NUMBER 799-1633.

on further refinement of ERA components, methodological approaches, criteria, and additional data layers that might contribute to ERAs.

As with the base layers, careful consideration must be given when viewing and interpreting the single and multi-taxa synthesis products. Sections 3 and 4 of the MDAT Report describe the methods and review processes for these aggregate products, with caveats and considerations detailed for each. In addition, MDAT work on cetacean models was peer reviewed and published in [Scientific Reports](#) in 2016.⁶⁹ Expansion and continuation of mapping work by the MDAT is addressed in the Healthy Ocean Ecosystems actions in section 2.3.



Example summary products for avian, fish, and cetacean species. Orange and blue lines represent the data development boundaries for the Northeast and Mid-Atlantic, respectively. From top left to bottom right: Avian annual relative abundance for all species on a 2 km x 2 km grid. Avian species richness, with 0 to 29 species per 2 km x 2 km cell. Expected interpolated fish biomass in kilograms per tow (4.5 to 1536) for each 10 km x 10 km cell. Fish species richness, with 0 to 25 species per 10 km x 10 km cell. Cetacean abundance in number of individuals, (1.3 to 1735) per 10 km x 10 km cell. Cetacean species richness with 4 to 31 species per 10 km x 10 km cell.

SYNTHESIS PRODUCTS AND CAVEATS

New marine life and human use data products created through regional ocean planning represent an important step forward in advancing our knowledge of ocean resources and uses. These products seek to represent dynamic and complex concepts and processes in a user-friendly way, and the RPB recognizes that they should continue to improve over time as we learn more about our oceans and as our technologies and synthesis methods improve. For this reason, it is important to keep in mind important caveats when interpreting the current first iteration of these new products.

MDAT Products

Descriptions:

- Base layer predictive model products and associated uncertainty products
- Species groups by ecological, regulatory, and stressor-sensitive characteristics
- Core areas of abundance or biomass for individual species or species groups
- Aggregate synthetic products, including total abundance or biomass, richness, and diversity

Caveats for use of MDAT aggregate products for species groups or taxa:

- The species within these groups represent only those modeled or mapped by MDAT
- The groups are not exhaustive, and there are many potential additional groups
- Group level products (abundance, richness, diversity, and 50% core area richness) were created from the annual prediction models, and should be interpreted accordingly
- Groups may be dominated by one (or few) species of very high abundance, which are often not species of particular concern

HUDS Products

Descriptions:

- Master Grid with all 64 layers in a single data presence product
- Theme grids
- Data presence grids with all layers present for a given theme
- Use intensity grids that account for variation in data within and across cells

Caveats to consider when interpreting HUDS products:

- Limitations of individual human use data sets (e.g., completeness, positional accuracy, temporal resolution, etc.) are maintained in the synthesis products
- Lack of information in a location could be due either to absence of that activity or missing data
- Key gaps include State-permitted fisheries, recreational boating, non-Federal sand and gravel borrow sites, cultural and Tribal uses, unexploded ordnance data, and shipwrecks

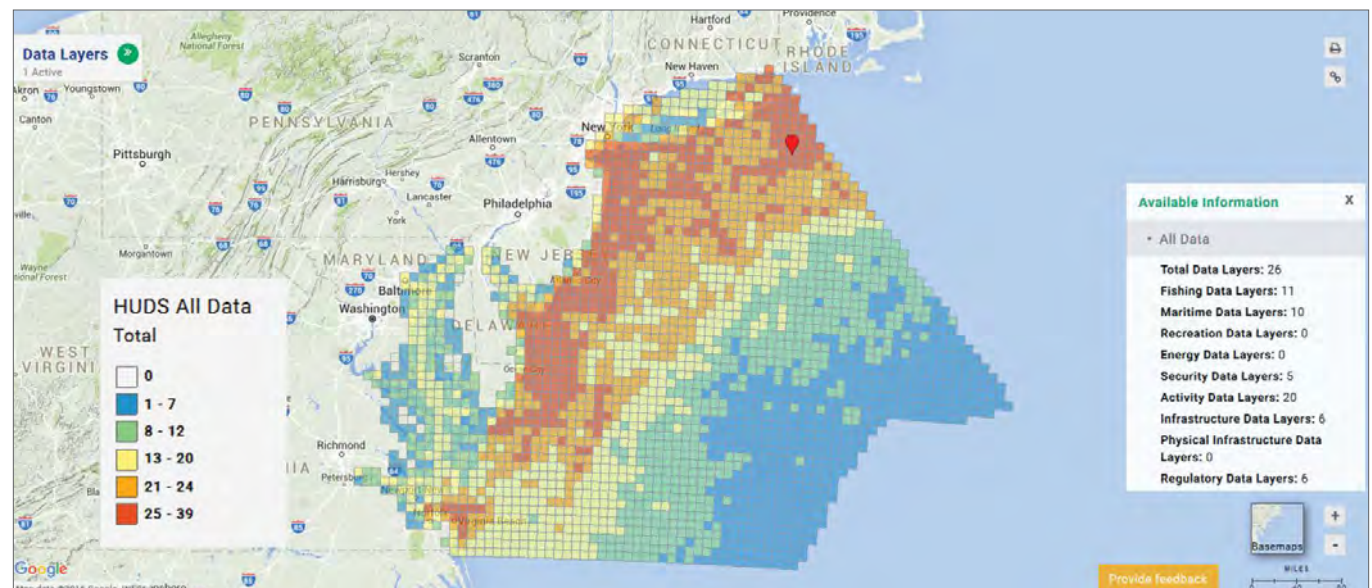
3.1.3 HUMAN USE DATA SYNTHESIS PRODUCTS

The Data Portal currently houses a range of information about human uses of the ocean, organized into five themes: fishing, maritime, recreation, renewable energy, and security. This information is presented in many different spatial data types (e.g., points representing shipwrecks, lines representing undersea cables, polygons representing military danger zones, and density grids representing vessel traffic). To help interpret these disparate types of data, **synthesized spatial products** characterizing human uses in the Mid-Atlantic region were developed.⁷⁰

These Human Use Data Synthesis (HUDS) **products**⁷¹ depict the number of uses in an area, based on available data, and allow users to spatially identify the intensity of human uses across the different activity types. The HUDS products depict different social and economic uses, highlight locations where

multiple uses occur, and provide a rough measure of use intensity for maritime transportation and commercial fishing.

Sixty-four available data layers describing either human activity or infrastructure were integrated in consultation with regional stakeholders and management authorities, and are available for viewing and use on the Data Portal. Two types of interactive maps that display the quantity of human use data available and estimates of the intensity of human use are presented. Data Portal users can click on areas of interest to reveal summary information regarding available data types and activity for that location. The products summarize the available data by breaking the region into a grid of 10x10 km cells. This is the same resolution that is used in the MDAT products (see section 3.1.2).

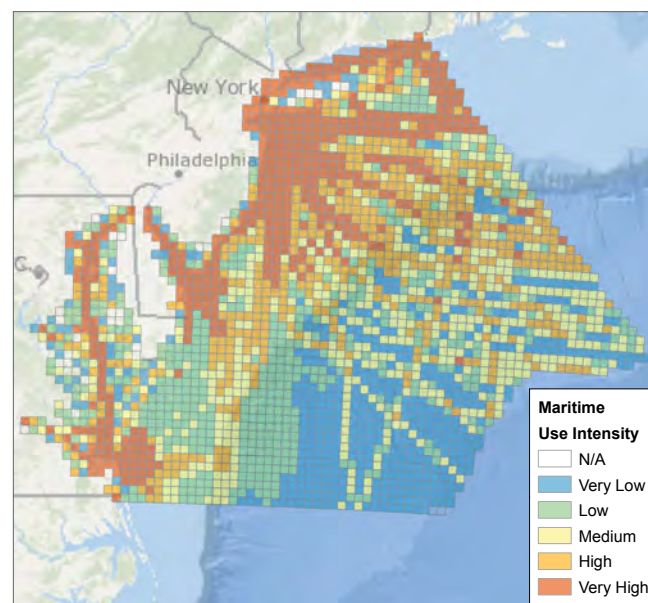
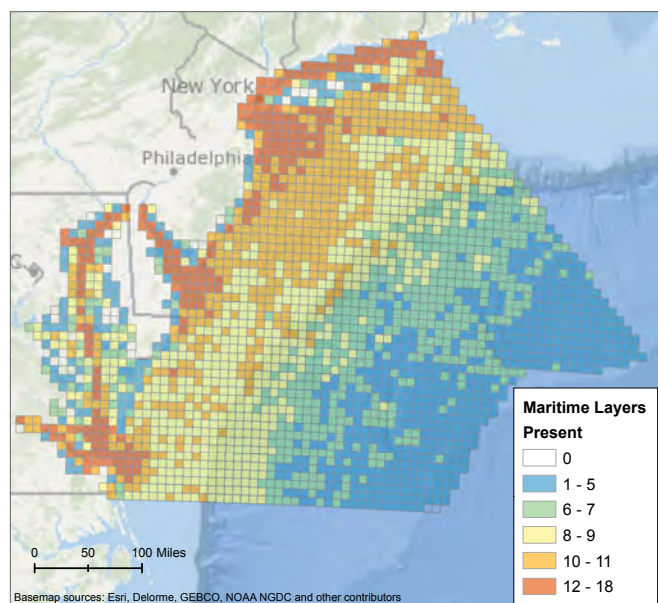


Human Use data synthesis, as depicted on the Mid-Atlantic Ocean Data Portal.

Careful consideration must be given to interpretation of these synthetic products because the foundational data sets have gaps, implicit biases, and limitations related to spatial accuracy and temporal resolution (see Appendix 5 for more information). Supplemental fact sheets provide further documentation of included data sets, including information on collection methods and limitations, and help users interpret the synthesized maps. Key data gaps (i.e., missing or incomplete data for the entire Mid-Atlantic region) that were identified by the HUDS analysis include State-permitted fisheries, recreational boating and fishing, non-Federal sand and gravel borrow sites, coastal activities such as inshore aquaculture, cultural and Tribal uses, and high confidence data for unexploded ordinances and shipwrecks. Tribal uses were not addressed, as there are concurrent efforts to address these needs (i.e., Tribal uses

Action 7 and MARCO efforts to improve the representation of Tribes and their interests in the regional planning process, through PGIS workshops and Tribal listening sessions—see section 1.2.4 above and Appendix 5).

HUDS products include data presence maps, which are interactive maps showing the quantity of data available in a given grid cell. One limitation of the data presence maps is that they eliminate any available information in the input data on the amount of use. Accordingly, where possible, use intensity maps were also developed that retain this underlying information. The use intensity map reveals highly trafficked areas within shipping lanes and at port entrances, in contrast to the Maritime data presence map. It also highlights cells with some infrastructure data, such as submarine cables.



Comparison of Maritime Data Presence and Use Intensity heat maps. Data Presence values represent the number of layers while Use Intensity values indicate amount of human use.

Overall, the HUDS products represent the first time such data have been synthesized in a comprehensive manner. They paint a clear picture of data availability in the Mid-Atlantic and reveal data collection biases and gaps that are important to recognize for ocean planning. They offer a first step toward human use data synthesis that can be built upon in the future.

3.2 ACTIONS RELATED TO THE MID-ATLANTIC OCEAN DATA PORTAL AND SCIENCE AND RESEARCH

The RPB has identified several actions that support ongoing development of the Data Portal and address emerging science and research needs. These actions will help the region ensure the Data Portal continues to support collaboration and implementation of the Plan. In addition, new ideas and data needs can be addressed as they arise.

3.2.1 ACTIONS RELATED TO THE DATA PORTAL

In the context of Mid-Atlantic regional ocean planning, the Data Portal plays a key role as a shared resource for regional data access and visualization, and to facilitate interagency collaboration, transparency, and efficient decision making. It also functions as a valuable tool for increasing public understanding, sharing and comparing data and information, and engaging stakeholders. Ultimately, by providing high priority data layers, mapping tools, and a resource center that consolidates available data from Federal, State, Tribal,

and regional sources, the Data Portal can inform implementation of interjurisdictional actions and ocean management proposals and decisions in the region. All RPB member entities share the responsibility of providing ongoing access to the best available regionally relevant ocean data for the Data Portal. The actions below concern the ongoing ability of the Data Portal to provide its vital functions into the future.

DATA PORTAL

Action 1 – Develop and implement a plan to sustain Data Portal operations and maintenance.

Through this action, the RPB will identify necessary tasks and a sustainable funding source to ensure the longevity of the Data Portal.

RPB lead entity: Full RPB

Steps to accomplish this action include:

- A. Develop a range of levels of Data Portal maintenance and updating options and associated costs. These can range from the simplest level of only updating existing data layers to more comprehensive options that could include the addition of new layers (to address existing and future data needs and gaps), features, and functions, as well as stakeholder engagement in layer development. (**underway** and **short-term**)
- B. Convene RPB entities with resources, expertise, or data relevant to the continued maintenance and updating of the Data Portal to prioritize operational needs, agree to appropriate roles,

and discuss funding options. (**underway** and **short-term**)

- C. Identify funding and collaboration commitments to meet ongoing needs. (**underway**, **short-term**, and **ongoing**)

DATA PORTAL

Action 2 – Maintain operational components including web services, data development, and integration.

Through this action the RPB will ensure that the technical capacity for the Data Portal is secured and that the Data Portal improves over time.

RPB lead entity: Full RPB

Steps to accomplish this action include:

- A. Continue to develop and integrate new data and updated layers from a variety of sources in consultation with RPB member entities and stakeholders. (**short-term** and **ongoing**)
- B. Continue and/or expand efforts to manage and publish authoritative Federal agency data in a timely and readily useable form such as web services, through mechanisms such as data sharing agreements among RPB member entities. (**short-term** and **ongoing**)
- C. Further explore opportunities to capture Tribal data on the Data Portal. (**short-term** and **ongoing**)

DATA PORTAL

Action 3 – Continue to engage in agency outreach and public engagement to enhance data and Data Portal functionality to effectively support decisions related to ocean management.

Through this action the RPB will encourage continued engagement to support advancement of the Data Portal.

RPB lead entity: Full RPB

Steps to accomplish this action include:

- A. Compile and post on the Data Portal user success stories of applications of the Data Portal to ocean planning decisions through engagement with RPB member entities and stakeholders, including but not limited to: ocean stories, news, calendar events, and other information that enhances stakeholder engagement. (**short-term** and **ongoing**)
- B. Expand Federal agency data managers' participation in relevant RPB working groups and the MARCO OMDT, and help leverage their agencies' data assets. (**short-term** and **ongoing**)

3.2.2 ACTIONS RELATED TO SCIENCE AND RESEARCH

A number of actions in Chapter Two identify applied science, research, and Traditional Knowledge that is needed to support achievement of, or more effectively address in the future, the Framework goals and objectives. These science and research needs that are identified in the Plan often overlap



Crew of the Okeanos Explorer during a survey of Norfolk Canyon. © ART HOWARD / NOAA

with existing regional research priorities developed by Federal agencies, States, Tribes, MAFMC, partners such as MARCO, and others that address a wide range of basic and applied science, and Traditional Knowledge related to ocean issues. The Plan focuses on identifying priority applied research and Traditional Knowledge needed to advance specific actions. However, the RPB recognizes that there are numerous additional opportunities to collaborate with a range of governmental, academic, non-governmental, and industry entities to develop knowledge that can advance multiple regional management interests.

➤ SCIENCE AND RESEARCH

Action 1 – Identify priority applied science and research needs for the Mid-Atlantic region.

Through this action the RPB will identify priority regional applied science and research needs based on criteria to be developed as described below. This action should address data collection, processing and analysis, and application. A list of priority applied research needs, developed in consultation

with scientists, Traditional Knowledge holders, and local stakeholders, will enable the RPB to:

- Focus attention on information that is needed to address the region's goals and objectives.
- Identify interconnections among, and opportunities to collaborate with, other research agendas.
- Identify programs and funding opportunities that support relevant applied research.
- Consider and incorporate, where possible, shared regional needs into Federal, State, and Tribal research spending plans.

Work under this action will be coordinated as appropriate with two related components of the Plan: the ongoing development of baseline data and information to be accessed through the Data Portal, as described in section 3.1.2 above, and the development of a strategy for enhancing research on cultural resources that addresses Tribal needs, as described in Tribal Interests and Uses Action 7.

RPB lead entity: Full RPB

Steps to accomplish this action include:

- A. Identify potential applied science and research needs, develop criteria for how to determine which needs should be deemed regional priorities, consult stakeholders to understand their perspectives on research needed to improve management, and review existing regional research agendas to identify areas of common interests, whether or how common research needs are being addressed, opportunities for collaboration, and other factors. **(short-term)**
- B. Convene scientists, resource managers, Traditional Knowledge holders, and stakeholders to review potential priority research needs identified in

step A. This will include discussion of current relevant research, criteria for determining which needs are regional priorities, funding opportunities, and partnerships to share research costs. **(short-term)**

- C. Provide to the RPB for approval a compiled list of applied research needs targeted to address specific interjurisdictional coordination actions identified in this Plan and/or other actions that support the Framework goals and objectives. **(short-term)**
- D. Share the information with interested parties by making the list available for use by resource managers, scientists, and potential funders in grant applications and funding decisions. **(short-term)**
- E. With input from the RPB member entities, the RPB Federal agencies will collaborate to develop an integrated regional ocean science and research agenda, including identifying opportunities, as appropriate, for coordination and collaboration with the [Subcommittee on Ocean Science and Technology](#)⁷² on the overall agenda, and working with the NOPP to facilitate discussion and support of specific research projects. **(short-term and ongoing)**
- F. Address science and research needs important to Tribal entities, for example valuing Traditional Knowledge, and furthering our understanding of submerged cultural resources. **(short-term and ongoing)**

“To make the sea your own, to watch over it,
to brood your very soul into it, to accept it and
love it as though only it mattered and existed.”

~ JACK KEROUAC



Plan Implementation

Plan implementation means following through on actions and other commitments in the Plan. Doing so effectively requires clear roles and responsibilities, a process for Plan updates and amendments, interregional coordination, resources, and performance monitoring and evaluation.

4.1 ADMINISTRATION

This section describes responsibilities that will facilitate the achievement of the RPB's Framework goals and objectives, including specific actions and other commitments articulated in this Plan.

4.1.1 ROLES AND RESPONSIBILITIES OF THE MID-ATLANTIC RPB

To support efficient implementation of the Plan, the RPB will maintain coordination and administrative functions for Plan implementation and updates as described in this section. The RPB will continue to operate by consensus in carrying out these functions. It will work with partners and stakeholders to leverage existing programs, and build on the efforts of other regional entities wherever possible. RPB member entities will continue to participate in RPB discussions and work collaboratively to achieve the goals, objectives, and actions described in this Plan.

Specifically, the RPB is responsible for ensuring that:

- Progress is made in implementing the actions articulated in the Plan.
- Stakeholders are engaged in implementation of the Plan and any future updates or amendments to the Plan.
- Ongoing coordination continues among RPB entities, with partners, and with geographically adjacent regional ocean planning processes.
- Expertise and resources from within and outside of governmental entities are being leveraged.
- New information and changing circumstances are accounted for through future Plan updates and amendments.
- Detailed work plans for Plan implementation are developed and updated over time to reflect new information and evolving context.

The majority of ocean space in the Mid-Atlantic regional planning area is under Federal jurisdiction (including, exclusively, the EEZ from three to 200

nautical miles from shore), and much of the data for that area is collected and managed under Federal authority. Executive Order 13547 directs Federal agencies to participate in the regional planning process and to carry out their existing authorities in a manner that is consistent with the Plan, to the extent consistent with applicable law. For these reasons, and consistent with the Executive Order, Federal agencies have a significant role in collaborative actions described in the Plan, and future agency actions will be informed by data and information provided in the Plan and the Data Portal.

States, Tribes, and MAFMC, which are voluntarily participating in the planning process, have equal and significant roles that reflect their authorities, jurisdiction, and/or standing as governments. These participants play important roles by serving as Co-Leads of the RPB and, for many specific actions, bringing expertise and perspectives as managers of important ocean and coastal resources under their jurisdictions, enhancing regional coordination through the planning process, and ensuring that key stakeholders in the region and the general public are engaged.

4.1.1.1 RPB LEADERSHIP, WORKING GROUPS, AND PARTNERSHIPS

During Plan implementation, RPB membership will continue to be composed of those entities identified in the RPB Charter, in addition to any additional Federal agencies and federally recognized Tribes that have chosen to participate since that time, and which may choose to participate in the future. Member entities and the specific individuals who represent those entities will continue to be updated

as needed on the [RPB roster](#).⁷³ Member entities are expected to represent the interests of, and bring the expertise and capacity of, their full home institutions (e.g., their full Federal department, their State, their Tribal nation, and MAFMC, respectively).

Co-Leadership of the RPB

The Federal, State, and Tribal members of the RPB will continue to each identify a lead representative. The RPB will be jointly led by these Co-Leads. Co-Leads do not have decision making authority over regional planning work. Instead, their shared role is to facilitate and guide the regional planning process. In consultation with RPB members, Co-Leads may consider and decide how to fulfill the following general roles and responsibilities as needed:

- Periodically review and update the RPB Charter.
- Guide, facilitate, and provide dedicated capacity to support timely regional work.
- Perform executive secretariat functions for the RPB, such as calling meetings, developing meeting agendas, taking and distributing meeting minutes, communicating with the NOC, and performing other administrative duties required to sustain the RPB.
- Communicate and coordinate with existing regional bodies such as regional ocean observing systems, regional ocean partnerships, and others.
- Coordinate with the members of the RPB to establish working groups to carry out the collaborative efforts of the RPB going forward.
- Promote collaboration among RPB members and seek consensus as needed.



As the Plan is implemented, RPB member entities will continue to represent the interests of, and bring the expertise and capacity of, their full home institutions. © JASON HOUSTON

- Coordinate public outreach and stakeholder engagement as part of the regional planning process.
- Facilitate review and updates of the Plan.

Specifically, during implementation of the Plan, Federal, State, and Tribal Co-Lead responsibilities include:

- Call public meetings of the full RPB at least once per year and develop agendas for those meetings.
- Organize RPB teleconferences or executive sessions to discuss administrative topics as needed.
- Monitor, evaluate, and report to the RPB and the public on progress in implementing the Plan.
- Ensure adequate coordination across working groups.
- Ensure adequate coordination with the NE RPB and on efforts and actions related to the implementation of the Northeast Ocean Plan.
- Oversee development and maintenance of RPB work plans that describe how actions will be implemented through time, including lead entities that will shepherd the process forward (see below).
- Ensure public communication and identify public engagement opportunities as needed.
- Ensure adequate maintenance of an RPB public website.
- Identify resources, including in-kind efforts, necessary to ensure that administrative, oversight, and communications functions of the RPB can continue.



A member of the Portal Team describes its features during a public listening session in Virginia Beach, Virginia in the fall of 2014. The development of the Data Portal is an example of how regional collaboration across Federal, State, and Tribal governments, in close coordination with external scientific and technical experts, individuals with Traditional Knowledge, and members of the public can deliver tangible and beneficial outcomes for the Mid-Atlantic region. © JASON HOUSTON

- Provide dedicated capacity to support the work of the RPB.⁷⁴

The NOC recommends a two-year term of office for each Co-Lead, at which time the RPB may extend the term(s) or identify new Co-Leads. The RPB may decide whether to limit the number of successive terms a Co-Lead may serve.

Lead entities for specific actions

Throughout the actions described in this Plan, RPB members are identified as lead or co-lead entities. Lead entities for specific actions will:

- Be responsible for advancing that specific action and reporting on progress.

- Convene and lead working groups, if any, established related to the specific action.
- Communicate implementation progress back to the Co-Leads, the full RPB, and the public, as appropriate. This includes identification of any potential Plan updates or amendments.
- Support adequate public outreach and communication about the actions, in coordination with the RPB Co-Leads, including identifying others with relevant expertise that can support the action, and maintaining updated content about actions on the RPB public website.

RPB working groups

A number of actions committed to in this Plan involve the efforts of RPB working groups. During Plan implementation, RPB working groups will be composed of RPB member entity and other

governmental representatives. Working groups may seek input from external scientific and technical experts, individuals with Traditional Knowledge, and members of the public. External participants serve as technical advisors and do not participate in the decision making process.

Working groups can:

- Reach agreement on day-to-day decisions regarding implementation of actions.
- Submit recommendations on major substantive actions or decisions to the Co-Leads and/or the full RPB for consensus, as appropriate.
- Call meetings and set agendas for discussions with external scientific and technical experts, Traditional Knowledge holders, and members of the public.

Other RPB members

RPB member entities not specifically identified in this Plan as having leadership responsibilities nonetheless have obligations to participate in the collaborative process going forward. They are generally expected to:

- Participate in scheduled RPB discussions.
- Send representatives to RPB meetings at least once a year.
- Participate in working groups as they deem appropriate and helpful to advancing the actions and commitments in the Plan.
- Provide data, information, input, in-kind support, and other resources in a good faith effort to advance the actions and commitments in the Plan, consistent with regulations, data management requirements, and available resources.



A stakeholder provides public comment during an RPB meeting in Baltimore, Maryland in March 2016. © ARLO HEMPHILL / MARCO

RPB meetings

During implementation, it is important that the full RPB meet periodically in a public setting to address major substantive issues, provide updates to and receive input from the public, and make decisions, as appropriate. For this reason, the RPB intends to convene at least annually in a public setting in order to:

- Continue general coordination across RPB member entities about ocean planning related topics.
- Review progress toward achieving the Framework goals and objectives, and specific commitments that are articulated in this Plan.
- Address as appropriate the need for Plan updates and amendments.
- Provide updates to and receive input from the public.

Partnerships, stakeholders, and public input

Partnerships with MARCO, the Portal Team, and others are an important part of the planning process. Partners can provide the RPB with additional scientific and technical expertise, and enhance the RPB's capacity to convene stakeholders and the public, provide information, and receive input. In many cases, regional partners will also be essential to the implementation of Plan actions by providing resources, staffing assistance, and other capacity.

Stakeholders, scientific and technical experts, Traditional Knowledge holders, and the general public will continue to play an important role informing the planning process going forward. This includes Plan implementation and any updates or amendments. Outreach will be as robust and

frequent as is allowed by available resources, and the RPB recognizes that partnerships and leveraging existing communication channels will be important to maximizing opportunities for meaningful engagement. Most Plan actions, and the process of developing Plan updates and/or amendments, will engage stakeholders and the public in the development and/or review of draft materials and provide opportunities to comment.

4.1.1.2 PLAN UPDATES

As articulated in the overarching planning principles described in the Framework, the RPB is committed to an adaptive approach that accounts for changing information, ecological and socioeconomic context, and other dynamics. For this reason, the RPB will routinely review implementation progress, assess the need for Plan updates or amendments, and make updates or amendments as needed.

Plan updates include minor Plan changes to reflect incremental changes in Plan administration, to correct errata, or to otherwise provide for minor content updates that do not substantively alter the Plan's actions. Updates will involve public notice and will occur following consensus by the RPB. Plan updates will generally support improvements to the Plan's effectiveness or efficiency in achieving Framework goals and objectives, but will not include alterations to the goals and objectives (which would be addressed through Plan amendments).

Plan amendments are changes to the Plan that would result in substantial changes to Plan administration, to the actions described in the Plan, or to Framework goals and objectives.



The RPB is committed to an adaptive approach that accounts for changing information, ecological and socioeconomic context, and other dynamics. For this reason, the Plan will be updated and amended periodically as needed.

The Plan will be reviewed comprehensively at least once every five years to assess whether amendments are needed. Plan amendments will include a public engagement process with public notice and public discussion. Plan amendments will also provide an opportunity to review and incorporate the results of Plan performance (see section 4.2, Performance Monitoring and Evaluation Action 1) and ocean ecosystem health monitoring (see section 2.3, Healthy Ocean Ecosystem Action 5).

4.1.2 INTERREGIONAL COORDINATION AND CONSISTENCY

As called for by the NOC, it is necessary to consider how the Plan intersects and is compatible with geographically adjacent regions regarding issues that cross regional boundaries. The RPB Co-Leads help facilitate this cross-regional coordination. To assist with coordination and consistency, the RPB



A public listening session in Ocean City, Maryland in 2014 is one of many examples of participation by stakeholders in the regional ocean planning process. © JASON HOUSTON

also has an ex officio member from Connecticut, and the NE RPB has an ex officio member from New York. This allows both regions to maintain direct lines of communication via their membership. Should the South Atlantic establish a regional planning body, the RPB will extend the same considerations to them. The RPB expects that as regions continue to engage in the development and management of data and other materials that cross boundaries, they will continue to coordinate across regions. In addition, some actions have been identified, or may be developed in the future, in coordination with adjacent regions in recognition of the fact that human activities, marine life, and other key components of the marine system cross regional boundaries.

4.1.3 RESOURCES

The RPB recognizes that resources are necessary for Plan implementation and to effectively administer the RPB's oversight role.⁷⁵ Resources for implementation include RPB member entity staff time, leveraging of existing programs and partnerships, support for technical contractors as needed, costs related to the convening of in-person meetings and public outreach, and many forms of in-kind support. A key role of the RPB Co-Leads, as part of facilitating and guiding the regional planning process, is to identify resource requirements. In consultation with RPB members, the Federal, State, and Tribal Co-leads will encourage dedication of in-kind resources from RPB member entities to support Plan implementation.

Certain actions and commitments in this Plan require the securing of specific resources to be effective. For example, the development of new

websites, products developed by contractors, communications and outreach tools, and support for enhanced participation by stakeholders and others would require resources to ensure successful implementation. Leveraging of existing and partner resources will be a primary focus of RPB efforts. If necessary, the RPB may update implementation commitments to reflect available resources and capacity.

4.2 PERFORMANCE MONITORING AND EVALUATION

The Framework establishes the region’s planning goals and objectives, and an iterative and adaptive approach to achieving them, noting that the RPB will “update planning initiatives to reflect new scientific and human use data, and to address new challenges that may arise.” The Framework identifies adaptability as one of the overarching principles that will guide the planning process and by which the RPB will track progress towards meeting Framework objectives and use the information gained to modify and adapt RPB actions.

To do so, the RPB will develop a performance monitoring and evaluation plan (PME plan) to provide the RPB, stakeholders, and the public with the tools to determine whether and how effectively the planning actions implemented by the RPB are achieving the specific objectives they are intended to advance. Key components of this PME plan will be the Framework goals and objectives, interjurisdictional coordination actions presented in this Plan, and a series of indicators, to be developed under the following action, that will be used to measure the effectiveness of specific actions. See Appendix 6 for additional discussion of the PME plan.

PERFORMANCE MONITORING AND EVALUATION

Action 1 – Develop Plan performance monitoring and evaluation plan.

Through this action, the RPB will develop and implement a PME plan by which the RPB, stakeholders, and the public can determine whether and how effectively the Plan actions implemented by the RPB are achieving the Framework goals and objectives. The PME plan would identify:

- Actions and objectives to be addressed.
- Applicable performance indicators and associated baseline conditions.
- Entities responsible for monitoring progress.
- A schedule and process for reporting monitoring results.
- A process for assessing results and making recommendations to the RPB.
- Other features as appropriate.

RPB lead entity: RPB Co-Leads

Steps to accomplish this action include:

- A. Develop, in consultation with experts and stakeholders, the components of a PME plan, as described above. **(short-term)**
- B. Review draft PME plan with experts, stakeholders, and the public. **(short-term)**
- C. Develop and implement a final PME plan. **(short-term and ongoing)**

[Endnotes]

- 1 Mid-Atlantic Regional Planning Body, "A Brief Overview of the Mid-Atlantic Ocean: Characteristics, Trends, and Challenges." <http://www.boem.gov/Mid-Atlantic-ROA-summary-white-paper/>
- 2 U.S. Commission on Ocean Policy, "An Ocean Blueprint for the 21st Century." http://govinfo.library.unt.edu/oceancommission/documents/full_color_rpt/000_ocean_full_report.pdf
- 3 White House Council on Environmental Quality, "Final Recommendations of the Interagency Ocean Policy Task Force," 2010. https://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf
- 4 Exec. Order No. 13547, 75 Fed. Reg. 43023 (July 22,2010), <https://www.whitehouse.gov/the-press-office/executive-order-stewardship-ocean-our-coasts-and-great-lakes>
- 5 National Ocean Council, "National Ocean Policy Implementation Plan," April 2013. https://www.whitehouse.gov/sites/default/files/national_ocean_policy_implementation_plan.pdf
- 6 National Ocean Council, "Marine Planning Handbook," July 2013. https://www.whitehouse.gov/sites/default/files/final_marine_planning_handbook.pdf
- 7 Mid-Atlantic Regional Council on the Ocean. <http://midatlanticocean.org/>
- 8 In 2009 the Governors of New York, New Jersey, Delaware, Maryland, and Virginia signed the Mid-Atlantic Governors' Agreement on Ocean Conservation: <http://midatlanticocean.org/wp-content/uploads/2013/11/MidAtlantic-Governors-Agreement.pdf>. The Agreement established the Mid-Atlantic Regional Council on the Ocean (MARCO) as a partnership to address shared regional priorities and provide a collective voice.
- 9 New York Department of State, "Offshore Atlantic Ocean Study," July 2013. http://docs.dos.ny.gov/communitieswaterfronts/ocean_docs/NYSDOS_Offshore_Atlantic_Ocean_Study.pdf
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- 11 New York Ocean Action Plan. <http://www.dec.ny.gov/lands/84428.html>
- 12 New Jersey Department of Environmental Protection, "Ocean Wind Power Ecological Baseline Study Final Report," July 2010. <http://www.nj.gov/dep/dsr/ocean-wind/report.htm>
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- 14 Virginia Coastal Zone Management Program. "Collaborative Fisheries Planning for Virginia's Offshore Wind Energy Area." March 2016. <http://www.deq.virginia.gov/Portals/0/DEQ/CoastalZoneManagement/Collaborative-Fisheries-Planning-for-Virginias-Offshore-Wind-Energy-Area-Report-DRAFT.pdf>
- 15 Biodiversity Research Institute, "Baseline Wildlife Studies Offshore of Maryland," 2015. <http://www.briloon.org/mabs/maryland>
- 16 Bureau of Ocean Energy Management Environmental Studies Program, "Determining Offshore Use by Marine Mammals and Ambient Noise Levels Using Passive Acoustic Monitoring." <http://www.boem.gov/Determining-Offshore-Use-by-Marine-Mammals-Maryland-PAM/>
- 17 This document does not create any right or benefit, substantive or procedural, enforceable by law or equity against any signatory or any of its officers, employees, or other representatives or any person. The statutes and regulations referenced herein contain legally binding requirements, and this document does not substitute for those statutes and regulations, nor is this document itself a regulation.
- 18 National Ocean Council, "National Ocean Policy Implementation Plan," April 2013. https://www.whitehouse.gov/sites/default/files/national_ocean_policy_implementation_plan.pdf
- 19 The Portal Team is a collaboration between Monmouth University's Urban Coast Institute, Rutgers University's Edward J. Bloustein School of Planning and Public Policy and Center for Remote Sensing and Spatial Analysis, The Nature Conservancy, The University of Delaware's Gerard J. Mangone Center for Marine Policy, and Ecotrust.
- 20 Mid-Atlantic Ocean Data Portal. <http://portal.midatlanticocean.org/ocean-stories/every-map-tells-a-story/>
- 21 Mid-Atlantic Ocean Data Portal, "Explore Commercial Fishing in the Mid-Atlantic with New Interactive Maps." <http://portal.midatlanticocean.org/news/commercial-fishing-maps/>
- 22 Mid-Atlantic Regional Ocean Assessment. <http://roa.midatlanticocean.org/>
- 23 For purposes of regional ocean planning, this document distinguishes between the zero to three nautical mile zone, where States have authorities and the three to 200 nautical mile zone where there may be Federal authorities, but no State authorities, under the Submerged Lands Act as amended (43 U.S.C. 1301 et seq.). With regard to some specific Federal statutes, for example the Clean Water Act, the zero to three nautical mile zone also includes "Federal" waters.
- 24 National Ocean Council, "Legal Authorities Relating to the Implementation of Coastal and Marine Spatial Planning." https://www.whitehouse.gov/sites/default/files/microsites/ceq/cmstp_legal_compendium_2-14-11.pdf
- 25 In addition to the actions described here in Chapter Two, there are five actions outlined in Chapters Three and Four, for a grand total of 44 actions in the Plan.

- 26 For the purposes of this section, the term 'agency coordination' refers broadly to gathering, sharing, and using information associated with ocean management activities. The overall goal is to enhance Federal participation in intergovernmental coordination generally, to address the interests and participation of Federal and State agencies, Tribes, MAFMC, and stakeholders, and to enhance their participation in ocean management decisions. All RPB entities are strongly encouraged to use best practices, but they are voluntary for States and Tribes. Federal agencies will implement best practices, to the extent practicable, subject to each agency's implementation of its statutory and regulatory mandates.
- 27 Including MAFMC.
- 28 Note: At the time of publication, the Human Use Data Synthesis products that could be applied in this step do not include Tribal data. For more information on these products, please see Chapter Three.
- 29 More information on first foods can be found here: http://www7.nau.edu/itep/main/tcc/Tribes/tdk_ffoods
- 30 JA, Morrison WE, Nelson MW, Stachura MM, Teeters EJ, Griffis RB, et al., "A Vulnerability Assessment of Fish and Invertebrates to Climate Change on the Northeast U.S. Continental Shelf." PLoS ONE 11(2): e0146756. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0146756>
- 31 Northeast Fisheries Science Center, "Ecosystem Considerations, Climate Change." <http://nefsc.noaa.gov/ecosys/climate-change/historical.html>
- 32 Rutgers School of Environmental and Biological Sciences, "OceanAdapt." <http://oceanadapt.rutgers.edu>
- 33 Bell, RJ, DE Richardson, JA Hare, PD Lynch, and PS Fratantoni, "Disentangling the effects of climate, abundance, and size on the distribution of marine fish: an example based on four stocks from the Northeast US Shelf," ICES J. Mar. Sci. (May/June 2015)72 (5): 1311-1322. <http://icesjms.oxfordjournals.org/content/72/5/1311.abstract>
- 34 Nye, JA, JS Link, JA Hare, and WJ Overholtz, "Changing spatial distribution of fish stocks in relation to climate and population size on the Northeast United States Continental Shelf," MEPS (2009) 393:111-129. <http://www.int-res.com/abstracts/meps/v393/p111-129/>
- 35 Walsh HJ, Richardson DE, Marancik KE, Hare JA, "Long-Term Changes in the Distributions of Larval and Adult Fish in the Northeast U.S. Shelf Ecosystem," PLoS ONE (2015) 10(9): e0137382 <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0137382>
- 36 Mid-Atlantic Regional Association Coastal Ocean Observing System. <http://maracoos.org/>
- 37 For example, NOAA is developing a series of new climate vulnerability indicators through the National Marine Fisheries Service Community Social Vulnerability indicators. This effort could include additional climate indicators focused on ocean acidification.
- 38 NOAA Marine Debris Program. <https://marinedebris.noaa.gov/>
- 39 Until a Federal co-lead entity is identified for this action, New York will summarize the State's existing indicators.
- 40 Tethys. tethys.pnnl.gov/
- 41 BOEM National and regional Guidelines for Renewable Energy Activities. <http://www.boem.gov/National-and-Regional-Guidelines-for-Renewable-Energy-Activities/>
- 42 Ocean Biogeographic Information System Spatial Ecological Analysis of Megavertebrate Populations. <http://seamap.env.duke.edu/content/content/about>
- 43 National Oceanographic Partnership Program. <http://www.nopp.org/>
- 44 BOEM Environmental Studies Program Information System. <http://marinecadastre.gov/espis/#/>
- 45 BOEM "Guidelines for Providing Information on Fisheries Social and Economic Conditions for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585. <http://www.boem.gov/Social-and-Economic-Conditions-Fishery-Communication-Guidelines/>
- 46 BOEM's Studies Development Plans are updated annually and cover the forthcoming two fiscal years. The information is used to formulate annual National Studies Lists that describe Environmental Studies Program projects eligible for funding in a given fiscal year. For more information, see <http://www.boem.gov/BOEM-ESP-SDP-2016-2017/>
- 47 MAFMC has guidance documents summarizing the Council process, how to get involved, and how individuals can have more impact in the Council's work at: <http://bit.ly/1XFoOxi>
- 48 Suffolk County Department of Economic development and Planning Shellfish Aquaculture Lease Program. <http://gis3.suffolkcountyny.gov/shellfish/>
- 49 Maryland Department of Natural Resources Aquaculture Siting Tool. <http://gisapps.dnr.state.md.us/Aquaculture/>
- 50 Virginia Coastal Zone Management Program Coastal Gems. <http://www.coastalgems.org/>
- 51 33 CFR § 167 http://www.ecfr.gov/cgi-bin/text-idx?SID=f062b8a16e8fa12903f147661a9d402a&mc=true&tpl=/ecfrbrowse/Title33/33cfr167_main_02.tpl
- 52 Congress established the America's Marine Highway Program to designate waterways as alternative routes for the movement of goods and people to reduce landside congestion. Additional information on the program is available at <http://www.marad.dot.gov/ships-and-shipping/dot-maritime-administration-americas-marine-highway-program/>
- 53 Committee on the Marine Transportation System. <http://www.cmts.gov/>
- 54 USACE serves as the lead permitting agency for the majority of dredging projects throughout our coastal waters. Deepening of ports or making navigational improvements to accommodate larger vessels will require collaborative efforts by the USACE, private industries, port authorities, and/or States.

- 55 Additionally, more about USACE Regional Sediment Management programs can be found here: <http://rsm.usace.army.mil/>
- 56 BOEM fact sheet, "BOEM Response to Hurricane Sandy: Update on Recovery Assistance and Resilience Planning." <http://www.boem.gov/Fact-Sheet-Hurricane-Sandy/>
- 57 BOEM fact sheet, "BOEM Advances Atlantic Coastal Preparedness and Resilience with Identification of New Offshore Sand Resources." <http://www.boem.gov/Marine-Minerals-Program-offshore-sand-resources/>
- 58 BOEM Marine Minerals Program Research and Studies. <http://www.boem.gov/Marine-Minerals-Research-and-Studies/>
- 59 The terms "Tribal Nation" and "Tribe" are interchangeable in this document and refer to a Tribe, band, pueblo, nation, or other organized group or community of Indians, including an Alaska Native village (as defined in or established under the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.)), that is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians (42 U.S. Code § 13743; 25 U.S.C. § 479a-1). The term "Indigenous Peoples" as used in this document includes State recognized Tribes; indigenous and Tribal community-based organizations; individual members of federally recognized Tribes, including those living on a different reservation or living outside Indian country; individual members of State recognized Tribes; Native Hawaiians; Native Pacific Islanders; and individual Native Americans.
- 60 See Announcement of *U.S. Support for the United Nations Declaration on the Rights of Indigenous Peoples*, at <http://www.state.gov/documents/organization/184099.pdf>; see also *United Nations Declaration on the Rights of Indigenous Peoples*, at http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf.
- 61 The Federal government has a government-to-government relationship with Indian Tribes. This is expressed in Executive Order (E.O.) No. 13175, "Consultation and Coordination with Indian Tribal Governments" (November 6, 2000) and has been re-affirmed in President Obama's November 5, 2009, "Tribal Consultation" Memorandum.
- 62 In the Northeast, a draft of Tribal Consultation Best Practices Guidelines has been developed, which further illustrate best practices. These represent a possible starting point for conversations in the Mid-Atlantic. These are available here: <http://neoceanplanning.org/wp-content/uploads/2014/11/Nov2014RPBMeetingMaterials.pdf>
- 63 A number of U.S. agencies have authority to regulate the laying and maintenance of cable off of our nation's shores. Coastal States also exercise control over submarine cables that land on their shores. Therefore, at least for the time being, the full RPB will maintain the lead for coordinating on undersea infrastructure.
- 64 Kaiser, D., "The Coastal Zone Management Act and Regional Ocean Plans – A Discussion Paper, October 2015. <http://neoceanplanning.org/wp-content/uploads/2015/10/CZMA-Discussion-Paper.pdf>
- 65 Mid-Atlantic Ocean Data Portal. <http://portal.midatlanticocean.org>
- 66 Marine Cadastre. <http://marinecadastre.gov/>
- 67 MDAT Final Report. http://midatlanticocean.org/wp-content/uploads/2016/06/MDAT.MARCO_FinalReport.pdf
- 68 See Healthy Ocean Ecosystems Action 1 in section 2.3, and Appendix 4 for more information on ERAs.
- 69 Roberts, JJ., BD, Best, L Mannocei, E Fujioka, PN Halpin, DL Palka, LP Garrison, KD Mullin, TVN Cole, CB Khan, WA McLellan, DA Pabst, and GG Lockhart, Habitat-based cetacean density models for the U.S. Atlantic and Gulf of Mexico, Scientific Reports (2016) 6. <http://www.nature.com/articles/srep22615>
- 70 Zaykoski, P, R Shmookler, Z Singer-Leavitt, S Moura, and M Schroeder Gearon, "Mid-Atlantic Regional Human Use Data Synthesis (HUDS) Project," 2016. http://midatlanticocean.org/wp-content/uploads/2016/04/MARCO_HUDS_FinalReport.pdf
- 71 Mid-Atlantic Ocean Data Portal Human Use Data Synthesis Layers. <http://portal.midatlanticocean.org/visualize/#x=-73.24&y=38.93&z=7&logo=true&controls=true&dls%5B%5D=false&dls%5B%5D=0.6&dls%5B%5D=261&basemap=Ocean&themes%5Bids%5D%5B%5D=16&tab=data&legends=false&layers=true>
- 72 Subcommittee on Ocean Science and Technology. <https://www.whitehouse.gov/administration/eop/ostp/nstc/oceans>
- 73 Mid-Atlantic Regional Planning Body, Roster of Members and Alternates. <http://www.boem.gov/Mid-Atlantic-RPB-Roster/>
- 74 As noted in the RPB Charter, the Federal Co-Lead provides the staffing and resources necessary to administer its role, to the extent resources allow. While the State and Tribal Co-Leads have no financial obligation to support the operations of the RPB, they will work in good faith to support the work of the RPB.
- 75 As required by the Antideficiency Act, 31 U.S.C. 1341 and 1342, all commitments made by the Federal agencies herein are subject to the availability of appropriated funds and agency budget priorities. Nothing in this document in and of itself obligates the Federal agencies to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or incur other financial obligations. This document does not create any exemption from policies governing competition for assistance agreements. Any transaction involving reimbursement or contribution of funds between the parties to this document will be handled in accordance with applicable laws, regulations, and procedures under separate written agreements or any of its officers, employees or other representatives, or any other person.

[Appendix 1]

Foundational Documents of the Mid-Atlantic Regional Planning Body

This appendix describes foundational documents previously agreed upon by RPB consensus, as well as links to where those documents can be found in their entirety.

CHARTER FOR THE MID-ATLANTIC REGIONAL PLANNING BODY

Development of the RPB Charter was one of the first acts of the RPB. The Charter describes the purpose, membership, roles, and process under which the RPB operates. It was finalized in September 2014 and is signed by all RPB member entities.

The Charter is available here:

<http://www.boem.gov/MidA-RPB-Charter/>

MID-ATLANTIC REGIONAL OCEAN PLANNING FRAMEWORK

The Framework informs the RPB's regional ocean planning process by articulating a vision, principles, goals, objectives, example actions, and geographic focus. After receiving and considering both written and verbal public input on draft goals and objectives, the final Framework was approved by the RPB in May 2014.

The Framework is available here:

<http://www.boem.gov/Mid-Atlantic-Regional-Ocean-Planning-Framework/>

APPROACH TO THE MID-ATLANTIC OCEAN ACTION PLAN

Prior to developing the Plan, the RPB considered options for the type of plan that would be practical for the region, enhance current ocean management, and satisfy the diverse interests of Mid-Atlantic ocean stakeholders. Five plan types (referred to as Options A-E) that fell across a spectrum of approaches ranging from more process-oriented to more geographically-oriented types of plans were considered. After receiving and considering both written and verbal public input, the Approach to the Mid-Atlantic Ocean Action Plan was approved by the RPB in January 2015. It describes key elements, including the identification and implementation of actions to enhance coordination, increase information sharing, improve interagency coordination, and inform more holistic and coherent decision making on a regional basis going forward.

The Approach is available here:

<http://www.boem.gov/Approach-to-Mid-Atlantic-Regional-Ocean-Action-Plan/>

[Appendix 2]

Mid-Atlantic Ocean Data Portal Sources and Supporting Information

This Appendix contains a complete snapshot of all Portal data layers as of June 17, 2016 and will be updated online as needed to reflect frequent Portal data updates and additions.

PORTAL THEME	MAP LAYER NAME W/ METADATA LINK	CATEGORY	FEATURE TYPE	DATA PROVIDERS	DATA OVERVIEW	DATA DEVELOPMENT & REVIEW SUMMARY
Administrative	Federal OCS Administrative Boundaries	Government Boundaries	Polygon	BOEM	These boundaries were created for BOEM administrative purposes only, such as delineating BOEM planning areas or determining shared state revenue sharing within the 3 nautical mile zone seaward of the SLA boundary known as the Revenue Sharing Boundary.	Data was created using the equidistant principle used to divide offshore areas between countries as defined within the UNCLOS. They are not meant to depict areas offshore as pertaining to or controlled by any particular state.
Administrative	Marine Jurisdictions (5 layers)	Government Boundaries	Polygon	BOEM, NOAA Office of Cost Survey (OCS)	Includes five boundaries from 3 to 200 miles.	Federally and internationally recognized political, legal, and resource management boundaries.
Administrative	OCS Lease Blocks	Government Boundaries	Polygon	BOEM	Offshore energy lease blocks define geographic areas within an Official Protraction Diagram (OPD) for leasing and administrative purposes.	Established by BOEM.
Administrative	Tribal Headquarters	Location Positions	Point	The Whitener Group and MARCO portal team	Point file showing offices of state and federally recognized tribes.	Created by Portal Team using information provided by Shinnecock Tribe & Whitener Group.
Marine Life	Avian Model Data (12 layers)	Model based products	Polygon	NOAA/NOS National Centers for Coastal Ocean Science (NCCOS) (BOEM funded)	Occupancy and probability model output for several selected bird species.	Modeled by NOAA-NCCOS modeled occupancy and distribution of seabirds, using data from the another BOEM funded effort, Compendium of Avian Information database that was compiled by USGS Patuxent Wildlife Research Center and the U.S. Fish and Wildlife Service. Results peer reviewed by subject matter experts.

PORTAL THEME	MAP LAYER NAME W/ METADATA LINK	CATEGORY	FEATURE TYPE	DATA PROVIDERS	DATA OVERVIEW	DATA DEVELOPMENT & REVIEW SUMMARY
Marine Life	Benthic Habitats North/South (2 layers)	Model based products		USGS, NOAA; analysis by The Nature Conservancy (TNC).	Regional scale benthic habitat maps.	Synthetic model products with inputs from NOAA (benthic infauna, and bathymetry) and USGS (sediments). Methodology developed in consultation with external experts (benthic technical team). Process documented in Northwest Atlantic Marine Ecoregional Assessment report.
Marine Life	Coldwater Corals (Observed)	Model based products	Point	NOAA Deep Sea Coral Research and Technology Program	Point data from multiple sources spanning several decades	Compiled by NOAA's Deep Sea Coral Research and Technology Program
Marine Life	EFH Highly Migratory Species	Government boundary overlays	Polygon	National Marine Fisheries Service (NMFS); Northeast Regional Ocean Council	Dataset is an aggregation of numerous Essential Fish Habitat (EFH) spatial data products for Highly Migratory Species (HMS), which are fish such as tuna, sharks, and swordfish.	Simple co-occurrence map showing overlapping EFH shapes provided by NOAA HMS office. Data vetted with NMFS subject matter expert (SME).
Marine Life	Essential Fish Habitats	Interpolated map	Grid	NOAA; analysis by TNC	Layer represents an overlay of Essential Fish Habitat (EFH) polygons for all 39 species under Federal management in the Mid-Atlantic and Northeast.	Simple co-occurrence map showing overlapping EFH shapes provided by NOAA-NMFS, by 10-minute square. Data vetted with NMFS subject matter expert (SME).
Marine Life	Habitat for Soft Corals (Modeled)	Model based products	Point	NCCOS	Dataset depicts the predicted likelihood of suitable habitat for deep-sea corals in the order Alcyonacea in the U.S. Northeast Atlantic and Mid-Atlantic.	Point data from several sources.
Marine Life	Marine Mammals (21 layers)	Model based products	Grid	US Navy, NOAA; analysis by TNC	Coarse regional scale marine mammal distribution and abundance maps, to be replaced Summer 2016 with MDAT data.	Developed by TNC using data compiled by U.S. Navy, observations grouped in 10-minute squares and symbolized based on number of standard deviations from average for all cells. Methodology in consultation with sea turtle experts, process documented in Northwest Atlantic Marine Ecoregional Assessment report.
Marine Life	Sea Turtles	Interpolated map	Grid	NOAA; Analysis by TNC	Coarse regional scale sea turtle distribution and abundance maps, to be replaced Summer 2016 with MDAT data.	Created by TNC using data compiled by U.S. Ecoregional Assessment report.
Marine Life	Seabed Forms	Model based products	Tile	NOAA; Analysis by TNC	Seabed forms classify seafloor topography into discrete units represented by a terrain model.	Created by TNC using NOAA Coastal Relief Model bathymetry using methodology developed and refined in consultation with external benthic science technical team.

PORTAL THEME	MAP LAYER NAME W/ METADATA LINK	CATEGORY	FEATURE TYPE	DATA PROVIDERS	DATA OVERVIEW	DATA DEVELOPMENT & REVIEW SUMMARY
Marine Life	Sediment Grain Size	Interpolated map	Grid	USGS; analysis by TNC	Classification and interpolation of surficial sediment points from USGS Seabed database.	Developed by TNC with methods developed in consultation with USGS and external benthic science team, currently being updated with additional data inputs for NE and MidA Regions in partnership with NROC with methodology developed in consultation with benthic habitat working group.
Marine Life	Toothed Animals	Interpolated map	Grid	NOAA; analysis by TNC	Areas where sightings of sperm whale, bottlenose dolphin, or striped dolphin are common.	Areas where sightings per unit effort for sperm whale, bottlenose dolphin or striped dolphin were two or more standard deviations higher than the regional average. For these species, 'regional' includes the Mid-Atlantic, Southern New England and the Gulf of Maine.
Renewable Energy	AWC Routes & HUBS	Interpolated Map	Raster	National Renewable Energy Laboratory	Routes and hubs planned for the Atlantic Wind Connection (AWC), a proposed undersea transmission cable system.	Speed data was extrapolated to 50 nautical miles offshore by NREL. The 90 m wind speed was calculated by a linear interpolation between 70 m and 100 m wind speeds.
Renewable Energy	BOEM Active Renewable Energy Lease Areas	Government Boundaries	Grid Polygon	BOEM	Blocks which have been leased by a company with the intent to build a wind energy facility.	Developed and maintained by BOEM's Office of Renewable Energy Programs, the authoritative source.
Renewable Energy	BOEM Wind Planning Areas	Government Boundaries	Grid Polygon	BOEM	Wind Development Planning Areas in the Atlantic also includes MHK projects.	Developed and maintained by BOEM's Office of Renewable Energy Programs, the authoritative source.
Renewable Energy	Coastal Energy Facilities	Location Positions (points)	Point	EPA, Portal Team, Mapped by MarineCadastre.gov	Depicts the locations of facilities that generate electricity.	Developed by Portal Team using EPA data.
Renewable Energy	DOD Offshore Wind Compatibility Assessments	Location positions	Polygon	Department of Defense; Mapped by MarineCadastre.gov	DOD assessment of the compatibility of offshore wind development with military assets and activities.	Developed by DoD, the authoritative source.
Renewable Energy	Offshore Wind Energy Technology Zones	Bathymetric lines	Line	MarineCadastre.gov	Coastal bathymetric depth, measured in meters at depth values of: -30, -60, -900.	Developed by MarineCadastre.gov project in order to define an area suitable for shallow, transition and deepwater zones for different types of wind turbine technology. The description in MarineCadastre.gov explains the depth ranges.
Renewable Energy	Virginia Research Lease Areas	Government Boundaries	Polygon	Dominion	Offshore Wind Technology Advancement Project (VOWTAP).	A research and development project supporting offshore wind generation. These research lease areas show where this project is taking place.

PORTAL THEME	MAP LAYER NAME W/ METADATA LINK	CATEGORY	FEATURE TYPE	DATA PROVIDERS	DATA OVERVIEW	DATA DEVELOPMENT & REVIEW SUMMARY
Renewable Energy	Wind Speed	Model based products	Grid	National Renewable Energy Laboratory	Estimated average wind speed.	This layer represents an estimate of offshore annual average wind speeds and is based primarily on data extrapolated from onshore wind data.
Fishing	Artificial Reefs	Location positions (polygons)	Polygon	Compiled by TNC from various sources	Locations of Mid-Atlantic artificial reefs.	These data were compiled from various state sources. In Delaware, digital data were received directly from a state agency. The Nature Conservancy compiled reef data from numerous sources in Maryland, including state agencies. For the remaining states, GIS data was created from lat/long coordinates of reef corners found on public web sites (i.e., New York DEC, New Jersey DEP, Virginia MRC).
Fishing	Commercial-Communities at Sea (8 layers)	Interpolated maps	Raster	NOAA/NMFS and NortheastOceanData.org	Position information from VTR reports was integrated with NOAA permit database to link ocean fishing locations with fishing community demographics. Database provided to Rutgers University by NOAA after being aggregated and scrubbed to protect privacy of individuals.	These map products were reviewed in consultation with commercial fishermen in several ports throughout the Mid-Atlantic Region conducted during 2015 and 2016. Review sessions included informal meetings, workshops and advertised public meetings. Input received was used to improve final products and is being used to shape the next phase of fishery data development for ocean planning. Caveats and data limitations noted by fishermen are included on the portal as guidance for appropriate interpretation and use of the maps.
Fishing	Commercial Fishing - VTS Data (19 layers)	Interpolated maps	Raster	NOAA/NMFS and NortheastOceanData.org	These data broadly characterize commercial fishing vessel activity in the Northeast and Mid-Atlantic based on Vessel Monitoring System (VMS) data from 2006 through 2014.	The National Marine Fisheries Service (NMFS) describes VMS as "a satellite surveillance system primarily used to monitor the location and movement of commercial fishing vessels in the U.S."
Fishing	Commercial Fishing - VTR Data (5 layers)	Interpolated maps	Raster	NOAA NMFS, Rutgers University	Data is developed by linking Federal Vessel Trip Report (VTR) data to vessel permit data.	Trip location point data as input to create density polygons representing visitation frequency.
Fishing	Fathom lines (depth contours)	Contour Lines	Line	NOAA; contours derived by TNC	Depth contours at 20, 50, and 100 fathoms.	Simple extraction from NOAA Coastal Relief Model (see metadata for detailed methods).
Fishing	Fishery Management Area Boundaries (3 layers)	Government Boundaries	Polygon	GARFO	Fishery management areas published by the National Marine Fisheries Service (NMFS) Greater Atlantic Regional Fishery Office (GARFO).	Displayed on Portal via web services from NOAA-NMFS.

APPENDIX 2 – Mid-Atlantic Ocean Data Portal Sources and Supporting Information

PORTAL THEME	MAP LAYER NAME W/ METADATA LINK	CATEGORY	FEATURE TYPE	DATA PROVIDERS	DATA OVERVIEW	DATA DEVELOPMENT & REVIEW SUMMARY
Fishing	Recreational Fishing	Interpolated maps	Grid	NMFS	Regional scale map layer showing party boat (also known as head boat) and charter boat fishing.	The number of trips information is based on vessel trip report records that have been aggregated by ten minute square and have been screened for confidentiality.
Security	Danger Zones & Restricted Areas		Grid	Various input data as determined by MARCO Portal project team, DoD, Mapped by MarineCadastre.gov	Product which shows the number of security data layers (15 in all) which have data that occurs within a given grid cell.	Source layers provided by authoritative federal source.
Security	Unexploded Ordnances	Location positions	Polygon/Point	NOAA OCS; Mapped by MarineCadastre.gov	Unexploded ordinances (UXOs) including bombs, bullets, shells, grenades, land mines, naval mines, etc. that did not explode when they were employed and still pose a risk of detonation.	This is not a complete collection of unexploded ordnances on the seafloor, nor are the locations to be considered exact.
Recreation	Coastal Recreation Survey (4 layers)	Online survey data	Grid	Various input data as determined by MARCO Portal project team	The primary goal of the Coastal Recreation Survey was to fill an important data gap and inform regional ocean planning efforts in the Mid-Atlantic by providing a spatial baseline of non-consumptive coastal and ocean recreation use patterns in the region.	Data were collected through an online survey where respondents placed a marker to indicate where they recreated on the coast for certain activities in the last 12 months. The data is displayed using a 1 kilometer by 1 kilometer grid and each cell indicates the number of activity points that fell within each cell.
Recreation	Northeast Recreational Boater Survey (2 Layers)	Online survey data	Point	SeaPlan, UMass Boston, Industrial Economics Inc., MA CZM	The goal of this study was to gather data on recreational boating routes and activities in ocean and coastal waters of the Northeast U.S.	Data were collected each month through an online survey deployed to registered boaters from May 1–Oct. 31, 2012. The resulting data layers display the density of boater routes and activity points.
Recreation	Recreational Boating Survey (4 layers)	Online survey data	Grid/Point	Monmouth University Urban Coast Institute, UMass Boston, Point 97, The Nature Conservancy	The goal of this study was to gather data on recreational boating routes and activities in ocean and coastal waters of the U.S. Mid-Atlantic region.	The data were collected each month through an online survey deployed to registered boaters from June 4, 2013 to December 1, 2013.
Recreation	Recreational Uses Workshop: DE	Participatory mapping	Grid	MARCO Data Portal Team, State Agencies, NOAA CSC	In each state, over 20 recreational uses were mapped—both general use footprints (areas in which a use is known to occur with some regularity, regardless of its frequency or intensity) and dominant use areas (areas routinely used by most users most of the time).	MARCO-collected information on how the public uses respective state coastal and ocean spaces through participatory GIS (PGIS) workshop.

PORTAL THEME	MAP LAYER NAME W/ METADATA LINK	CATEGORY	FEATURE TYPE	DATA PROVIDERS	DATA OVERVIEW	DATA DEVELOPMENT & REVIEW SUMMARY
Recreation	Recreational Uses Workshop: MD	Participatory mapping	Grid	MARCO Data Portal Team, State Agencies, NOAA CSC	In each state, over 20 recreational uses were mapped—both general use footprints (areas in which a use is known to occur with some regularity, regardless of its frequency or intensity) and dominant use areas (areas routinely used by most users most of the time).	MARCO-collected information on how the public uses respective state coastal and ocean spaces through participatory GIS (PGIS) workshops.
Recreation	Recreational Uses Workshop: NJ	Participatory mapping	Grid	MARCO Data Portal Team, State Agencies, NOAA CSC	In each state, over 20 recreational uses were mapped—both general use footprints (areas in which a use is known to occur with some regularity, regardless of its frequency or intensity) and dominant use areas (areas routinely used by most users most of the time).	MARCO-collected information on how the public uses respective state coastal and ocean spaces through participatory GIS (PGIS) workshops.
Recreation	Recreational Uses Workshop: NY	Participatory mapping	Grid	MARCO Data Portal Team, State Agencies, NOAA CSC	In each state, over 20 recreational uses were mapped—both general use footprints (areas in which a use is known to occur with some regularity, regardless of its frequency or intensity) and dominant use areas (areas routinely used by most users most of the time).	MARCO-collected information on how the public uses respective state coastal and ocean spaces through participatory GIS (PGIS) workshops.
Recreation	Recreational Uses Workshop: VA	Participatory mapping	Grid	MARCO Data Portal Team, State Agencies, NOAA CSC	In each state, over 20 recreational uses were mapped—both general use footprints (areas in which a use is known to occur with some regularity, regardless of its frequency or intensity) and dominant use areas (areas routinely used by most users most of the time).	MARCO-collected information on how the public uses respective state coastal and ocean spaces through participatory GIS (PGIS) workshops.
Recreation	NJDEP Sport Ocean Fishing Grounds	Participatory mapping	Polygon	New Jersey Department of Environmental Protection (NJDEP)	Charter boat, party boat and private boat captains were surveyed to identify the areas they consider recreationally significant fishing areas or prime fishing areas.	The NJDEP interview process entailed examining the accuracy of the already delineated prime fishing areas on a base map. Fishermen modified the base map by drawing their changes on the map, the maps were then digitized into the New Jersey Specific Sport Ocean Fishing Grounds Coverage.

PORTAL THEME	MAP LAYER NAME W/ METADATA LINK	CATEGORY	FEATURE TYPE	DATA PROVIDERS	DATA OVERVIEW	DATA DEVELOPMENT & REVIEW SUMMARY
Maritime	Aids to Navigation	Location positions	Point	USCG; mapped by MarineCadastr.gov	Structures intended to assist navigation.	Data provided by authoritative federal source. Dataset includes lights, signals, buoys, day beacons, and other aids to navigation.
Maritime	AIS Shipping Data (2011, 2012, 2013 5 layers)	Interpolated maps	Raster	USCG; Mapped by MarineCadastr.gov. 2011 and 2012 data were processed by TNC. 2013 data were processed by NROC	Density grid depicts the concentration of a majority of commercial shipping traffic within U.S. coastal and offshore waters.	Automatic Identification System (AIS) data are collected by the U.S. Coast Guard using automated two-way radio transmissions to track real-time vessel information such as ship identity, purpose, course, and speed, primarily in coastal U.S. waters. Describe numerous consultations with shipping interests which shaped data summary and display decisions. Originating data provided by BOEM/NOAA.
Maritime	Anchorage Grounds	Location positions	Polygon	USCG, Mapped by MarineCadastr.gov.	The areas described in subpart A (33 U.S.C. 100) are designated as special anchorage areas.	Data provided by authoritative federal source.
Maritime	Federal OCS Sand and Gravel Lease Areas	Government Boundaries	Polygon	BOEM	Federal outer Continental Shelf (OCS) Sand and Gravel Borrow Areas (Lease Areas).	This dataset is a collection of previous and current authorized lease areas under BOEM's purview. The intent is to update the dataset when leases are added or renewed. Provided by BOEM's Marine Minerals Program.
Maritime	Maintained Channels	Government Boundaries	Polygon	NOAA Electronic Navigational Charts	Navigable channels maintained by the US Army Corps of Engineers.	Data are displayed in three depth classes: 0-35', 35-45', and >45'. These data were derived from NOAA Electronic Navigation Charts.
Maritime	N. Atlantic Right Whale Special Mgmt Areas	Government Boundaries	Polygon	NOAA Fisheries	Seasonal Management Area locations where regulations implement speed restrictions.	Data provided by authoritative federal source.
Maritime	NASCA Submarine Cables	Location positions	Line	North American Submarine Cable Assoc (NASCA); Mapped by Marine Cadastre.gov	Locations of in service and out of service submarine cables Owned by members of NASCA.	The maximum scale range for viewing the cables is 36,112. Cables within 100 meters of landfall were removed from the data set. Other cables may exist in U.S. waters.
Maritime	Ocean Disposal Sites	Government Boundaries	Polygon	U.S. Governemnt Priority Office, NOAA OCS, USACE, NOAA OCS, US ACOE; Mapped by MarineCadastr.gov	Layer shows approved ocean disposal sites.	Areas within which dumping of wastes is permitted under permits issued under sections 102 and 103 of the Marine Protection, Research, and Sanctuaries Act.

PORTAL THEME	MAP LAYER NAME W/ METADATA LINK	CATEGORY	FEATURE TYPE	DATA PROVIDERS	DATA OVERVIEW	DATA DEVELOPMENT & REVIEW SUMMARY
Maritime	Offshore Discharge Flow	Location positions	Point	EPA	Locations and flow attribute of discharge of effluent from waste water treatment plants.	Only offshore locations are included; inland source facilities were excluded. EPA flow data marked by facility are attributed to the federal and state offshore point data.
Maritime	Pilot Boarding Areas	Government Boundaries	Polygon	United States Coast Pilot, Northeast Ocean Data Portal, NOAA Electronic Navigational Charts	Locations at sea where pilots familiar with local waters board incoming vessels to navigate their passage.	Data provided by authoritative federal source.
Maritime	Port Commodity (2 layers)	Government Boundaries	Polygon/ Point	USACE, The Nature Conservancy, Rutgers University	Tax parcels that overlap port facility points extracted from a database maintained by the U.S. Army Corps of Engineers Navigation Data Center.	Data provided by authoritative federal source.
Maritime	Port Facilities (2 layers)	Location positions	Point	USACE, The Nature Conservancy, Rutgers University	This is a subset of the Port Facility database.	Maintained by the US Army Corps of Engineers Navigation Data Center. This database contains all facility types that may be reported as the origin or destination of commercial waterborne vessel moves.
Maritime	Port Ownership	Location positions	Point	USACE, The Nature Conservancy, Rutgers University	This is a subset of the Port Facility database.	Maintained by the US Army Corps of Engineers Navigation Data Center. This database contains all facility types that may be reported as the origin or destination of commercial waterborne vessel moves.
Maritime	Routing Measures	Government Boundaries	Polygon	NOAA OCS	Various shipping zones delineating the activities of and regulations for marine vessel traffic.	Data provided by authoritative federal source.
Maritime	Shipwreck Density	Interpolated maps	Grid	BOEM	Density of reported shipwrecks compiled by BOEM.	This dataset does not represent a complete record of potential archaeological sites within a particular geographic area and is not intended for decision-making or planning purposes.
Oceanography	Bathymetry - Okeanos	Interpolated maps	Raster	NOAA National Geophysical Data Center, NOAA Ship Okeanos Explorer, Center for Coastal and Ocean Mapping/ Joint Hydrographic Center (CCOM/JHC)	High resolution bathymetry data.	Multibeam products are generated by the Okeanos Explorer's Mapping Data Team.
Oceanography	Bathymetry - CCOM-JHC	Interpolated maps	Raster	CCOM/JHC	Data displays seafloor bathymetry (depths in meters) with hillshade for the U.S. Atlantic Continental Margin.	The Center for Coastal and Ocean Mapping/ Joint Hydrographic Center is collecting multibeam bathymetry and acoustic backscatter data.

PORTAL THEME	MAP LAYER NAME W/ METADATA LINK	CATEGORY	FEATURE TYPE	DATA PROVIDERS	DATA OVERVIEW	DATA DEVELOPMENT & REVIEW SUMMARY
Oceanography	Bathymetry NOS Hydro-graphic Survey	Interpolated maps	Raster	NOAA National Geophysical Data Center	Color shaded relief visualizations of high-resolution quality-controlled seafloor elevation.	NOAA / National Ocean Service (NOS) Hydrographic Survey Bathymetric Attributed Grids (BAGs) in U.S. coastal waters.
Oceanography	Fronts Probability	Model based products	Raster	NOAA CoastWatch, NOAA NOS, NOAA National Weather Service (NWS), Monterey Regional Forecast Office; seasonal composites, Rutgers University	Seasonal model based estimates of strength and position of fronts.	Developed by Rutgers University (CRSSA), see metadata for detailed methodology.
Oceanography	Net Primary Productivity	Model based products	Raster	NOAA CoastWatch, NOAA NOS, NOAA NWS Monterey Regional Forecast Office; seasonal composites, Rutgers University	Seasonal model based estimates of amount and position of NPP.	Developed by Rutgers University (CRSSA), see metadata for detailed methodology.
Oceanography	Submarine Canyons	Hand drawn boundaries	Polygon	TNC	Data layer represents major canyons of the Mid-Atlantic Coast.	Approximate boundaries were digitized on-screen over a raster bathymetry layer.
Human Use Data	Theme – Energy	Interpolated Maps	Grid	BOEM Wind Energy Areas, BOEM Wind Planning Areas, Virginia Wind Energy Areas, and Coastal Energy Facilities	Data shows the number of energy data layers (4 in all) which have data that occurs within a given grid cell, along with pertinent descriptive and spatial information which characterize what type of data are present in a cell.	Various input data as determined by MARCO Data Portal project team organization and partners. Layers include renewable energy wind lease areas and energy.
Human Use Data	Theme – Fishing Data	Interpolated Maps	Grid	Source layers included in this theme are: VMS , Communities at Sea and Artificial Reefs	Fishing data layers (15 in all) which have data that occurs within a given grid cell.	Fishing layers include mostly gridded activity related data based on Vessel Trip Report (VTR) and Vessel Monitoring System (VMS) data, along with a layer showing artificial reef locations.
Human Use Data	Theme – Maritime Data	Interpolated Maps	Grid	Source layers included in this theme are Maritime data layers as above	This is a theme product which shows the number of maritime data layers (21 in all) which have data that occurs within a given grid cell.	Maritime layers include gridded activity data based on Automatic Identification System (AIS) vessel traffic from 2013 as well as non-activity information including anchorage areas, aids to navigation, maintained channels, and disposal sites.
Human Use Data	Theme – Security Data	Interpolated Maps	Grid	Source layers included in this theme are Security data layers as above	This theme product shows the number of recreational data layers (9 in all) which have data that occurs within a given grid cell.	Recreational layers include data on various activities such as swimming, fishing, and boating, based on user surveys and participatory mapping workshops.

PORTAL THEME	MAP LAYER NAME W/ METADATA LINK	CATEGORY	FEATURE TYPE	DATA PROVIDERS	DATA OVERVIEW	DATA DEVELOPMENT & REVIEW SUMMARY
Human Use Data	Theme – Recreation Data	Interpolated Maps	Grid	Source layers included in this theme are Recreational data layers as above	This is a theme product which shows the number of security data layers (15 in all) which have data that occurs within a given grid cell.	Security layers include regulatory zones used by the U.S. Navy such as submarine transit lanes and military complex ranges. It also includes danger zones and restricted areas to shipping as well as locations that are reported to contain unexploded ordnance.
Human Use Data	Theme – Activity Data	Interpolated Maps	Grid	Source layers included in this theme are: VMS (see above); Communities at Sea (see above); AIS Vessel Density 2013 (see above), Recreational Boater Activities, Recreational Boater Routes; Coastal Use Surveys (see above); and PGIS data (see above)	This is a theme product which shows the number of activity data layers (32 in all) which have data that occurs within a given grid cell.	Activity layers include data for vessel traffic (e.g. AIS), fishing (e.g. Communities at Sea based on VTR, VMS), and recreational activities.
Human Use Data	Theme – Infrastructure Data	Interpolated Maps	Grid	Many source layers included in this theme, please see metadata for full listing.	This is a theme product which shows the number of infrastructure data layers (32 in all) which have data that occurs within a given grid cell.	Infrastructure layers include data such as submarine cables and disposal sites, as well as regulated areas that do not portray actual human uses.
Human Use Data	Theme – Physical Infrastructure Data	Interpolated Maps	Grid	Source layers included in this theme are: Artificial Reefs, Aids to Navigation, Maintained Channels, Wrecks & Obstructions, Submarine Cables, Port Facilities, Offshore Discharge Locations, Coastal Energy Facilities, Unexploded Ordnances, and Military Installation Locations	This is a theme product which shows the number of physical infrastructure data layers (10 in all) which have data that occurs within a given grid cell.	Physical infrastructure layers show where equipment or materials are actually installed on the seafloor, at the surface, or in the water column, such as submarine cables and aids to navigation.
Human Use Data	Theme – Regulatory Data	Interpolated Maps	Grid	Many source layers included in this theme, please see metadata for full listing	This is a theme product which shows the number of regulatory data layers (22 in all) which have data that occurs within a given grid cell.	Regulatory infrastructure layers include areas which are zoned for various ocean uses but do not necessarily depict actual ongoing human activity, such as danger zones, wind planning areas, and shipping lanes.

Regulatory and Management Context

This appendix provides a summary of key Federal laws that regulate and manage marine resources and human activities that are most relevant to the implementation of the Plan, and generally describes the authorities of States, Tribes, and MAFMC.

INTRODUCTION

Geography and jurisdiction play a key role in the regulatory and management context for the Plan. State jurisdiction generally extends three nautical miles offshore. Under current law, Federal entities manage activities out to the boundary of the EEZ and State entities manage activities within their waters.¹ Federally recognized Tribes within the region also have laws that apply to Tribal citizens and may overlap with State and Federal laws.

The rights and interests of federally recognized Tribes in marine waters off of the Mid-Atlantic region are recognized and addressed under Federal authorities described below.² Federally recognized Tribes have a government-to-government relationship with the United States as a result of the U.S. Constitution, treaties, Federal statutes, legal decisions, and several Executive Orders. As a result, Tribes are recognized as possessing certain inherent rights of self-government (i.e., Tribal sovereignty) and, pursuant to Federal Indian trust responsibility, the Federal government has legally enforceable obligations to protect treaty rights, lands, assets, and resources.

As described below, through the Federal Coastal Zone Management Act, Federal actions outside a State coastal zone, that have reasonably foreseeable effects on any coastal use (land or water) or natural resources of the coastal zone, are required to be consistent to the maximum extent practicable with the enforceable policies of a State's federally approved coastal management program.

The following are informal descriptions of certain statutes and their implementing regulations for the convenience of the reader. These descriptions are not intended as a complete statement of and do not substitute for applicable law or to establish the actual requirements of any regulatory program. These descriptions also are not intended as legal advice. The reader should refer to the statutes, regulations, and Federal Register for official program requirements. Any decisions or actions undertaken by any Federal agency, State, or Tribe will be based on the applicable statutes, regulations, case-specific facts and circumstances, and case law.

FEDERAL AGENCIES

For the Federal agencies involved in regional ocean planning, there are a number of major statutes and regulatory programs that govern their activities in the ocean.³ Below is a summary of key authorities that address interests related to the Plan goals and objectives:

SELECT AUTHORITIES THAT GOVERN KEY INFRASTRUCTURE DEVELOPMENT ACTIVITIES ⁴	
Authorities	Activities governed
Outer Continental Shelf Lands Act	Sand and gravel extraction; minerals, offshore wind energy, and oil and gas planning, leasing, and development
Deepwater Port Act	Offshore LNG terminals
Marine Protection, Research, and Sanctuaries Act	Dredged material (and other material) disposal site designation; ocean disposal of dredged material and other material Designation of national marine sanctuaries

Activities subject to these authorities (and all others) must comply with regulatory authorities that address potential impacts to a range of environmental, social, and economic interests, which include but are not limited to the following:

ENVIRONMENTAL REVIEW AND REGULATORY AUTHORITIES	
Authorities	Potential interests
National Environmental Policy Act	Environmental, social, economic, public interest
Coastal Zone Management Act	State coastal policy
Clean Water Act	Marine ecosystem, water quality, public interest
Rivers and Harbors Act (Section 10)	Navigation, public interest
Marine Protection, Research, and Sanctuaries Act	Human health, welfare, amenities, the marine environment, ecological systems, economic potentialities

CONSULTING AUTHORITIES	
Authorities	Potential interests
Ports and Waterways Safety Act	Navigation safety, security
National Historic Preservation Act (Section 106)	Historic preservation, cultural significance
Magnuson-Stevens Act	Essential fish habitat
Marine Mammal Protection Act	Whales, turtles, dolphins and porpoises
Endangered Species Act	Endangered species, critical habitat
Migratory Bird Treaty Act	Migratory Birds

AUTHORITIES RELATED TO DEVELOPMENT

Outer Continental Shelf Lands Act

The Outer Continental Shelf Lands Act (OCSLA) grants the Secretary of the Interior authority for the administration of mineral exploration and the development of the OCS, defined generally as all submerged lands lying seaward of State submerged lands and waters which are under U.S. jurisdiction and control (in the Mid-Atlantic, seaward of the three-mile limit). OCSLA provides guidelines for implementing an OCS oil and gas exploration and development program and empowers the Secretary to grant leases or agreements for the extraction of marine minerals (including sand, gravel, and shell resources) and for oil and gas to the highest qualified responsible bidder on the basis of sealed competitive bids. OCSLA also grants the Secretary authority for the development of renewable energy facilities on the OCS. Planning and leasing OCS activities are conducted primarily by BOEM. (43 U.S.C. §1331 *et seq.*)

Energy Policy Act of 2005

The Energy Policy Act authorizes BOEM to issue leases, easements, and rights of way to allow for renewable energy development on the OCS. The Act establishes a general framework for authorizing renewable energy activities, and requires that BOEM coordinate with relevant Federal agencies and affected State and local governments,

obtain fair return for leases and grants issued, and ensure that renewable energy development takes place in a safe and environmentally-responsible manner. BOEM promulgated regulations in 2009 that provide a detailed structure for implementation of the OCS Renewable Energy Program. (42 U.S.C. §13201 *et seq*)

Deepwater Port Act

The Deepwater Port Act authorizes and regulates the location, ownership, construction, and operation of deepwater ports (defined as a non-vessel, fixed, or floating manmade structure that is used as a port or terminal for the loading, unloading, or handling of oil or natural gas for transportation to a State) in waters beyond the U.S. State seaward boundaries, sets requirements for the protection of marine and coastal environments from adverse effects of such port development, and promotes safe transport of oil and natural gas from such locations. DOT, through MARAD, authorizes activities under the Act in close consultation with USCG, which has delegated authority to process applications, conduct environmental review, and manage other technical aspects of the applications. The Act also provides for the governor of a State with “adjacent state” status to have a veto authority over a proposed project. (33 U.S.C. §1501 *et seq.*; 46 U.S.C. §2101 *et seq.*)

Marine Protection, Research, and Sanctuaries Act

The Marine Protection, Research, and Sanctuaries Act of 1972 establishes programs to regulate ocean dumping, conduct ocean dumping research, and designate national marine sanctuaries. Title I, sometimes referred to as the Ocean Dumping Act, generally prohibits: 1) transportation of material from the United States for the purpose of ocean dumping; 2) transportation of material from anywhere for the purpose of ocean dumping by U.S. agencies or U.S.-flagged vessels; and 3) dumping of material transported from outside the United States into the U.S. territorial sea. A permit is required to deviate from these prohibitions. The standard for permit issuance is whether the dumping will “unreasonably degrade or endanger” human health, welfare, or the marine environment. USACE is authorized to issue permits for ocean disposal of dredged material applying standards developed by EPA

(the Ocean Dumping Criteria) and subject to review and concurrence by EPA; EPA is authorized to issue permits for ocean disposal of other materials. EPA also designates appropriate disposal sites. (Major code sections at 33 U.S.C. §§1401-1445, 16 U.S.C. §§1431-1447f, 33 U.S.C. §§2801-2805)

AUTHORITIES RELATED TO ENVIRONMENTAL REVIEW AND REGULATION

National Environmental Policy Act

NEPA requires federal agencies to assess the environmental effect(s) of a proposed Federal action on the human environment prior to making decisions. Federal agencies analyze the potential environmental impacts of a proposed Federal action through a Categorical Exclusion, EA, or EIS. NEPA requires federal agencies to prepare an EIS if the proposed action is likely to have significant environmental effects. NEPA and its implementing regulations (40 CFR Parts 1500-1508) provide that development of an EIS include opportunities for public review and comment, consideration of a range of reasonable alternatives, and analysis of the potential impacts resulting from the alternatives. In addition, NEPA and its implementing regulations mandate coordination and collaboration among Federal agencies and direct Federal agencies to coordinate with States and Tribes. NEPA is administered by individual Federal agencies (each agency has developed its own NEPA implementing regulations) in concert with guidance from the Council on Environmental Quality and review of EISs by EPA. (42 U.S.C. §4321 *et seq.*)

Clean Water Act, Discharge of Dredged and Fill Material (Section 404)

Section 404 of the Clean Water Act prohibits the discharge of dredged or fill material into waters of the U.S. without a permit. Such discharges may be authorized only when there is no alternative that is less damaging to the aquatic environment, and various other standards are met. The impact of dredged or fill material on the marine ecosystem is

determined in consultation with Federal resource agencies that have subject-matter jurisdiction to evaluate potential impacts to resources under their jurisdiction (see below). An applicant must demonstrate efforts to avoid and minimize potential adverse impacts, and, where relevant, must provide compensation for any remaining, unavoidable impacts through activities to restore or create wetlands. EPA and USACE jointly administer the Section 404 program; permits are issued by USACE, except in New Jersey waters, where the State has assumed the program. (33 U.S.C. §1251 *et seq.*)

Clean Water Act, Permits for Point Source Discharges of Pollutants (Sections 301, 402 and 403)⁵

Discharges of pollutants from point sources to waters of the U.S. are generally prohibited, unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit. (See 33 U.S.C. §§ 1311(a) and 1342) NPDES permits impose limits on, and monitoring requirements for, such point source discharges. Many, but not all, States have been authorized to administer the NPDES program and issue the permits for point source discharges to waters under their jurisdiction, including the territorial seas extending three miles from shore. Where a State has not been so authorized, EPA issues the NPDES permits for point source discharges to the State's waters. Furthermore, EPA issues the NPDES permits for discharges to waters seaward of the territorial seas for point sources, other than from a vessel or other floating craft being used as a means of transportation. Permits for discharges to waters under State jurisdiction ("internal" waters and waters of the territorial seas) must include requirements ensuring satisfaction of State water quality standards. In addition, any permits for discharges to the territorial sea, contiguous zone or the ocean must comply with EPA's Ocean Discharge Criteria. (33 U.S.C. §§1311(b)(1)(C), 1341, and 1343)

Rivers and Harbors Act (Section 10)

Section 10 of the Rivers and Harbors Act prohibits the unauthorized obstruction of navigable waters of the U.S. or on the OCS. Construction of any structure, excavation, or placement of fill in U.S. navigable

waters, including the OCS, is prohibited without a permit from USACE. (33 U.S.C. §403 *et seq.*)

Public Interest Review

The decision by USACE on whether to issue a permit under the Clean Water Act or Rivers and Harbors Act, above, is based in part on "an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest." The review addresses a range of natural, cultural, social, economic, and other considerations, including, generally, "the needs and welfare of the people," and balances the "benefits which reasonably may be expected to accrue from the proposal" against the "reasonably foreseeable detriments" in a way that reflects the "national concern for both protection and utilization of important resources." A permit will be granted if the proposed project is not contrary to the public interest and meets other legal requirements. (33 U.S.C. §401 *et seq.*; 33 U.S.C. §1344; 33 U.S.C. §1413)

Coastal Zone Management Act

The CZMA promotes the sustainable development of the nation's coasts by encouraging States and territories to balance the conservation and development of coastal resources using their own management authorities. The Act provides financial and technical assistance incentives for States to manage their coastal zones consistent with the guidelines of the Act. States with federally approved coastal management programs have the authority under the Act to review Federal actions that have reasonably foreseeable effects on the uses or resources of a State's coastal waters for consistency with the enforceable policies of the federally approved coastal management program. Federal actions include Federal agency activities, certain Federal license or permit activities, BOEM OCS Plan approvals, and Federal funding to State and local governments for activities with coastal effects. (16 U.S.C. §1451 *et seq.*)

Ports and Waterways Safety Act

The Ports and Waterways Safety Act provides for the establishment, operation, and maintenance of vessel traffic services, control of vessel movement, establishment of requirements for vessel operation, and other port safety controls. Specific to navigation, the Act requires that USCG conduct studies to provide safe access routes for vessel traffic in waters under U.S. jurisdiction. In doing so, USCG considers all waterway uses to assess the impacts on navigation from a specific project, to periodically assess navigation safety for specific federally designated waterways, and to assess risk in a port, port approaches, or region of significance. (33 U.S.C. §1221 *et seq.*)

National Historic Preservation Act (Section 106)

The NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties. Effects to districts, sites, buildings, structures, and objects listed in or eligible for the National Register are considered; properties not listed on the Register are evaluated against the National Park Service’s published criteria, in consultation with the SHPO and/or a THPO and any federally recognized Indian Tribe that may attach religious or cultural importance to them. If an agency makes an assessment that its actions will cause an adverse effect, it initiates a consultation process that results in a Memorandum of Agreement that outlines measures that the agency will take to avoid, minimize, or mitigate the adverse effects. (16 U.S.C. §470 *et seq.*)

Magnuson-Stevens Act (Essential Fish Habitat)

The Magnuson-Stevens Fishery Conservation and Management Act establishes national standards for fishery conservation and management in U.S. waters. The Act created eight Regional Fishery Management Councils (including MAFMC) composed of Federal and State officials and both voting and non-voting members representing the commercial and recreational fishing sectors, and environmental, academic, and government interests that prepare and amend fishery management plans for certain fisheries requiring conservation and management. In addition to provisions that address fisheries science and management, the Act requires that fishery management plans

identify and describe essential fish habitat (including adverse impacts on such habitat) and ensure the protection, conservation, and enhancement of essential fish habitat for each managed species. Federal agencies must consult with NMFS in the review of potential impacts of their actions on essential fish habitat when they authorize, fund, or undertake an action that may adversely affect essential fish habitat. In response, NMFS provides conservation recommendations

to avoid, minimize, mitigate, or otherwise offset those adverse effects. The Act also requires Federal action agencies to consult with NMFS on any projects that are authorized, funded, or undertaken that may adversely affect essential fish habitat. NMFS also provides conservation recommendations to avoid, minimize, mitigate, or otherwise offset those adverse effects. (16 U.S.C. §1801 *et seq.*)

Endangered Species Act

The Endangered Species Act provides for the conservation of species that are endangered or threatened, and designated critical habitat. FWS or NMFS determine the species that are endangered or threatened (“listed species”), designate critical habitat, and develop and implement recovery plans for listed species. Section 7 of the Act requires that Federal agencies consult with either FWS or NMFS to ensure that any action authorized, funded, or carried out by an agency is not likely to jeopardize the continued existence of a listed species or result in the adverse modification or destruction of critical habitat designated for such species. (16 U.S.C. §1531 *et seq.*)

Marine Mammal Protection Act

The Marine Mammal Protection Act provides for the protection of all marine mammals. NMFS and FWS share authority under the Act. NMFS is responsible for the protection of whales, dolphins, porpoises, and seals. The Act prohibits, with limited exceptions, broadly defined takes to, or interactions involving, marine mammals. Exceptions can be made through permitting actions for “incidental” impacts from commercial fishing and other non-fishing activities, for scientific research, and for licensed institutions such as aquaria and science centers. NMFS can

authorize incidental takes if it finds that such takes will have a negligible impact on the species or stock(s) and specifies conditions related to permissible impacts, mitigation, monitoring, and reporting. NMFS is required to consult with the Marine Mammal Commission in its decision making. (16 U.S.C. §1361 *et seq.*)

Migratory Bird Treaty Act

The Migratory Bird Treaty Act implements four treaties that provide for international protection of migratory birds. Under the Act, taking and killing of migratory birds is prohibited. FWS regulations found at 50 CFR part 21 authorize the issuance of permits to take migratory birds. A number of migratory bird regulations authorize purposeful take for a variety of purposes, including bird banding and marking, scientific collection, bird rehabilitation, raptor propagation, and falconry. Consistent with FWS's longstanding position that the Act applies to take that occurs incidental to, and which is not the purpose of, an otherwise lawful activity, FWS also has authorized incidental take by the Armed Forces during military-readiness activities (50 CFR 21.15) and in certain situations through special use permits described in 50 CFR 21.27. In most circumstances, including take that results from activities like wind energy development, FWS addresses incidental take through the exercise of enforcement discretion. FWS focuses its enforcement efforts under the Act on industries or activities that chronically kill birds and has historically pursued criminal prosecution under the Act only after notifying an industry of its concerns regarding avian mortality, working with the industry to find solutions and proactively educating industry about ways to avoid or minimize take of migratory birds. As a matter of law enforcement discretion, FWS considers the extent to which a company or individual had complied with that guidance as a substantial factor in assessing any potential enforcement action for violation of the Act. (16 U.S.C. §§703-712)

National Park Service Organic Act of 1916 (as amended and supplemented)

The National Park Service Organic Act of 1916 created NPS and directed NPS to manage National Park System units. The purpose

of national parks broadly is to “to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” In the Mid-Atlantic, Fire Island National Seashore, Gateway National Recreation Area, Statue of Liberty, Governors Island and Castle Clinton National Monuments, and Assateague Island National Seashore are managed according to their enabling legislation, the National Park Service Organic Act of 1916 (as amended and supplemented), regulations at 36 CFR Parts 1-7, and unit-specific management plans. (5416 U.S.C. §100101 *et seq.*)

National Marine Sanctuaries Act

The National Marine Sanctuaries Act authorizes the Secretary of Commerce to designate discrete areas of the marine environment as national marine sanctuaries to protect distinctive natural and cultural resources. The primary objective of the Act is protection of sanctuary resources; a secondary objective is facilitation of all public and private uses that are compatible with resource protection. Regulations for management and protection of sanctuary resources are at 15 CFR Part 922. Section 304 of the Act requires interagency consultation between the Office of National Marine Sanctuaries and Federal agencies taking actions that “may affect” the resources of a sanctuary. (16 U.S.C. §1431 *et seq.*)

MID-ATLANTIC STATES

The States that make up the Mid-Atlantic region have broad-based authority to manage and regulate activities that occur within their lands and waters. While the numerous authorities and regulations that address resource protection and management within each of the States are unique, they can be generally categorized across the region as representing:

- **Geographically-based authority to plan for and regulate most activities and resources** in a particular area of the State's waters, such as the critical area or tidal wetlands.

- **Authority to protect certain resources or functions**, such as identification and protection of submerged aquatic vegetation beds, fish refuges, or shipwreck sites.
- **Authority to regulate particular activities**, such as prescribing, prohibiting, or limiting where, for example, energy development, dredge material disposal, aquaculture, fishing, or construction activities may be conducted.

As noted above, one authority common to all States in the region is the Federal CZMA, administered by NOAA’s Office for Coastal Management and on a State level through federally approved coastal management programs. As discussed above, the CZMA authorizes States to review Federal actions that have reasonably foreseeable effects to resources and uses of the State’s coastal zone for consistency with State’s federally approved coastal management program. Under specific circumstances (defined by, and unique to, each State’s federally approved coastal management program), this may include State review of Federal actions that occur outside State waters. Data and information in the Data Portal will help inform State review of Federal actions under the CZMA; Section 2.6 describes additional potential opportunities for State and Federal coordination.

FEDERALLY RECOGNIZED TRIBES

Federally recognized Tribes are sovereigns with inherent authority to govern their waters and resources. As such, federally recognized tribes have a government-to-government relationship with the United States as a result of the US Constitution, treaties, federal statutes, legal decisions, and several executive orders. As a result, tribes are recognized as possessing certain inherent rights of self-government (i.e., tribal sovereignty) and, pursuant to federal Indian trust responsibility, the federal government has legally enforceable obligations to protect treaty rights, lands, assets, and resources.⁶

The participation of federally recognized Tribes as members of the RPB does not supplant the obligation of the Federal government (or in this case, the Federal agency members of the RPB) to conduct

government-to-government consultation with potentially affected federally recognized Tribes.

Federal agencies may be required to formally consult with Tribes regarding Federal actions with Tribal implications, and they may integrate consultation with NEPA and NHPA Section 106 review.

Archaeological Resources Protection Act (administered at a Federal level by NPS) governs the excavation of archaeological sites on Federal and Native American lands and the removal and disposition of archaeological collections from those sites.

Native American Graves Protection and Repatriation Act (administered at a Federal level by NPS and the Advisory Council on Historic Preservation)—requires Federal agencies and institutions that receive Federal funding to return Native American cultural items to lineal descendants and culturally affiliated Indian Tribes, including human remains, funerary objects, objects of cultural patrimony, and sacred objects.

American Indian Religious Freedom Act (administered by Federal agencies through their Tribal consultation practices) protects and preserves the traditional religious rights and cultural practices of Native Americans, including access to sacred sites, and thus may trigger Section 106 review under the NHPA if there are potential effects on such sites as a result of Federal actions.

Indigenous hunting, fishing, and foraging rights (a treaty between a Tribe and the Federal government or as provided for in State or Federal statute) may reserve or provide special rights, for example, related to subsistence related hunting, fishing, or foraging, to Tribal members.

Executive Order 13175 directs Federal agencies to coordinate and consult with Indian Tribal governments whose interests might be directly and substantially affected by activities on federally administered lands.

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

MAFMC is one of eight Regional Fishery Management Councils created under the MSA. The law created a system of regional fisheries management designed to allow regional, participatory governance by knowledgeable people with a stake in fishery management.

The Regional Fishery Management Councils develop fishery management plans and recommend management measures for the EEZ of the U.S. The Councils recommend fishery management measures to the Secretary of Commerce through NMFS. The decisions made by the Councils are not final until they are approved or partially approved by the Secretary of Commerce through NMFS.

MAFMC is made up of 21 voting members and four non-voting members. Seven of the voting members represent the constituent States' fish and wildlife agencies, and 13 are private citizens who are knowledgeable about recreational fishing, commercial fishing, or marine conservation. The four non-voting members represent the Atlantic States Marine Fisheries Commission, FWS, the U.S. Department of State, and USCG.

MAFMC develops fishery management plans and management measures (such as fishing seasons, quotas, and closed areas) for 13 species of fish and shellfish. Several of these species are managed under multi-species fishery management plans because they are found in the same geographic region or have similar life histories.

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- 1 This is a simplified characterization of maritime boundaries, intended only to convey a general distinction between state and federal jurisdictions. For additional context and specific information, see *Maritime Zones and Boundaries*, NOAA Office of General Counsel, at http://www.gc.noaa.gov/gcil_maritime.html
 - 2 Federally recognized Tribes have a government-to-government relationship with the United States as a result of the US Constitution, treaties, federal statutes, legal decisions, and several Executive Orders. As a result, Tribes are recognized as possessing certain inherent rights of self-government (i.e., Tribal sovereignty) and, pursuant to federal Indian trust responsibility, the Federal government has legally enforceable obligations to protect treaty rights, lands, assets, and resources. See <http://www.bia.gov/FAQs/>
 - 3 Descriptions of authorities are intended to generally characterize the subject matter. For authoritative materials please see the citations and related information on agency web pages. For a more complete listing of potentially applicable authorities, please refer to the NOC's "Legal Authorities Relating to the Implementation of Coastal and Marine Spatial Planning," at: https://www.whitehouse.gov/sites/default/files/microsites/ceq/cmsp_legal_compendium_2-14-11.pdf

- 4 The Plan does not comprehensively address authorities and agencies that bear on coastal and ocean management; numerous other authorities and implementing agencies may apply, depending on the type of activity. Data and information in the Plan and the Data Portal can inform implementation of authorities not discussed herein, including, for example, the Natural Gas Act, by which the Federal Energy Regulatory Commission authorizes interstate natural gas pipelines and storage facilities, and the Clean Air Act, by which EPA addresses air quality impacts associated with marine construction and transportation.
- 5 National Pollutant Discharge Elimination System. <https://www.epa.gov/npdes>
- 6 Bureau of Indian Affairs, "Frequently Asked Questions." [bia.gov. http://www.bia.gov/FAQs/](http://www.bia.gov/FAQs/). The exact nature of these obligations varies across tribes.

Draft Framework for Identification of Ecologically Rich Areas

IDENTIFYING ECOLOGICALLY RICH AREAS IN MID-ATLANTIC OCEAN PLANNING

One of two overarching goals of the RPB¹ focuses on protecting and conserving our ocean and coastal resources, through efforts that improve our understanding of ocean resources and habitats, account for ecosystem changes, consider traditional values and scientific data, and foster collaboration across jurisdictions around ocean conservation efforts. As one way to implement this concept in the region, the RPB has developed Healthy Ocean Ecosystem Action 1: Identify ecologically rich areas of the Mid-Atlantic ocean and increase understanding of those areas to foster more informed decision making.

In section 2.3 of this Plan, the RPB outlines a series of steps to achieve Healthy Ocean Ecosystem Action 1. This includes a first step of developing a framework for ERAs that contains terms, references, and general components of ERAs. This will be developed in coordination with Mid-Atlantic scientific experts, stakeholders, the public, and the NE RPB. At the March 22-24, 2016 RPB meeting, stakeholders expressed, and the RPB agreed, that a process of further defining ERAs should be clarified and include ample opportunities for input from a variety of stakeholder communities and scientific experts. The notion that identification of ERAs should be an iterative process was stressed and it was acknowledged that carrying out the process in a collaborative manner will take time. Additionally, it was noted that any ERAs that are not defined by persistent seafloor features are likely to move in space and time, given the dynamic nature of the marine environment, including the movement of marine life. It was also noted that human uses must be taken into account when ERAs are evaluated

and their vulnerability is assessed. With this in mind, the RPB recognizes the importance of ensuring an approach to identification of ERAs that allows for flexibility through time to represent new, best available information.

To ensure coordination with the NE RPB, the two region's draft frameworks for ecological area identification are similar. Both the Northeast² and the Mid-Atlantic draft frameworks are built off of the same international standards.³ They also both result from discussions of the NE RPB's Ecosystem Based Management Work Group (EBM WG), which includes some representation from the Mid-Atlantic. In addition, prior to the development of this draft framework, marine life data synthesis efforts by the MDAT resulted in development of numerous data layers that map habitats and the distribution and abundance of 150 species of marine mammals, birds, and fish in both the Northeast and the Mid-Atlantic regions (see section 3.1.2 for more information). Continuation of this MDAT work is anticipated into spring of 2017, including carrying out initial higher-level data synthesis to further inform the process.

DRAFT FRAMEWORK FOR THE IDENTIFICATION OF ECOLOGICALLY RICH AREAS

This draft framework represents a starting point for RPB discussion and further consideration by stakeholders and scientific experts in the region. Accordingly, this draft framework should be seen as a first step in a deliberative, transparent, and inclusive effort to define ERAs in the Mid-Atlantic.

Five components are identified for characterizing potential ERAs in the Mid-Atlantic. These are consistent with the NE RPB approach and with other recognized approaches. Each ERA component is defined according to ecological features and the existing data sets that could be used to characterize and map those features. An ERA could meet one or more of the five components, though not all five would need to be met before an area would be identified as an ERA. Long-term data needs are also identified for each component. The following definitions are intended to describe and bound the types of data sets that could be applicable to each component. The components are:

1. **Areas of high productivity** — includes measured concentrations of high primary and secondary productivity, known proxies for high primary and secondary productivity, and metrics such as food availability.
2. **Areas of high biodiversity** — includes metrics of biodiversity and habitat areas that are likely to support high biodiversity.
3. **Areas of high species abundance including areas of spawning, breeding, feeding, and migratory routes** — support ecological functions important for marine life survival; these areas may include persistent or transient core abundance areas for which the underlying life history mechanism is currently unknown or suspected.
4. **Areas of vulnerable marine resources** — support ecological functions important for marine life survival and are particularly vulnerable to natural and human disturbances.
5. **Areas of rare marine resources** — distribution and core abundance areas of Federal and State ESA-listed species, listed species of concern and candidate species, other demonstrably rare species, and spatially rare habitats.

USE OF EXISTING MARINE LIFE AND HABITAT DATA TO DESCRIBE ERAS

The majority of the data sets currently available for use in the framework are products of the MDAT work describing habitat and species distribution and abundance. While these are important structural ecological features, this draft framework identifies additional ecological features that may be independent of abundance (e.g., representations of function, connectivity, and dynamics), and suggests additional data types to address these.

The following tables (adapted from the Northeast draft framework) provide a listing of existing spatial marine life (Table 1a) and physical and biological habitat data (Table 1b) and suggest where each data set could fit within the ERA component framework. While these tables provide a guide to using the components, there are a few considerations to keep in mind:

- Each ecological resource and corresponding data set could fit into more than one ERA component. The tables' initial suggested links between data sets and components are expected to be adjusted as needed.
- Some ecological features could be determined to be inherently important over their full extent.
- Some data sets characterizing an ecological feature may require determination and scientific review of a certain population threshold, areal extent, or time of year in order to be used to identify ERAs (see Table 1a below for examples).

TABLE 1A. Applicability of existing marine life spatial data to ERA components.⁴	Component 1: Areas of high productivity	Component 2: Areas of high biodiversity	Component 3: Areas of high species abundance including areas of spawning, breeding, feeding, and migratory routes	Component 4: Areas of vulnerable marine resources	Component 5: Areas of rare marine resources
Diversity of marine mammals, birds, fish, and sea turtles (Shannon diversity index or Simpson diversity index for each group from MDAT)		X			
Multi-taxa species richness (richness for ~150 species of mammals, birds, and fish from MDAT – does not rely on abundance)		X			
Marine mammal abundance core area, bird abundance core area, and fish biomass core area (based on annual, seasonal, and monthly averages from MDAT including for species groups, whole taxa, and/or multiple taxonomic groups. ⁵)			X	X	X
Core areas for ESA-listed species (from MDAT)				X	X
Core areas for species groups that are sensitive to particular disturbances or impacts (e.g., marine mammal species groups sensitive to high, medium and low frequency sound, or bird species groups sensitive to collision or displacement from offshore wind energy projects) ⁶ (from MDAT)				X	

TABLE 1B. Applicability of existing physical and biological habitat spatial data to ERA components.	Component 1: Areas of high productivity	Component 2: Areas of high biodiversity	Component 3: Areas of high species abundance including areas of spawning, breeding, feeding, and migratory routes	Component 4: Areas of vulnerable marine resources	Component 5: Areas of rare marine resources
Rate of photosynthesis	X				
Chlorophyll a concentration	X				
Cold-water coral habitat		X		X	X
Eelgrass meadows	X		X	X	
Wetlands	X		X	X	
Shellfish beds				X	
Frontal boundaries	X	X			
Upwelling zones	X	X			
Submarine Canyons	X	X	X	X	X
Areas of structurally complex seafloor habitat	X	X		X	
Essential fish habitat			X		
Designated ESA critical habitat			X	X	X
Habitat Areas of Particular Concern (Sandbar Shark, Golden Tilefish)			X	X	

LONGER TERM SCIENCE AND DATA NEEDS TO ADVANCE THE IDENTIFICATION OF ERAS

The following tables provide a listing of potential marine life science and data needs (Table 2a) and physical and biological habitat science and data needs (Table 2b) that would advance the identification of ERAs and suggest where each identified need could fit within the ERA component framework. Some of the data sets are in active develop-

ment and may be available by early 2017 or sooner, and others will likely take several years to produce. Most of them will be useful as standalone products for informing ocean resource decision making, in addition to their potential utility as ERA inputs. These data development needs should be further considered by the RPB in the course of carrying out Science and Research Action 1 described in section 3.2.2 of the Plan.

TABLE 2A. Longer-term marine life science and spatial data needs relevant to ERA components.	Component 1: Areas of high productivity	Component 2: Areas of high biodiversity	Component 3: Areas of high species abundance including areas of spawning, breeding, feeding, and migratory routes	Component 4: Areas of vulnerable marine resources	Component 5: Areas of rare marine resources
Multi-taxa metric of high marine life productivity	X				
Multi-taxa index of high biodiversity		X			
Identification and distribution of keystone species, foundational species and ecosystem engineers				X	
Distribution and abundance of benthic invertebrates including scallops, ocean quahogs, surf clams, horseshoe crab, and deep sea red crab			X	X	
MDAT core areas for species with low fecundity, slow growth, and longevity				X	
MDAT core areas for species groups sensitive to impacts including warming waters and acidification				X	
Seal haul outs			X	X	X
Sea turtle nesting areas			X	X	X
Identification and distribution of ecologically rare species					X

TABLE 2B. Longer-term physical and biological habitat science and spatial data needs relevant to ERA components.	Component 1: Areas of high productivity	Component 2: Areas of high biodiversity	Component 3: Areas of high species abundance including areas of spawning, breeding, feeding, and migratory routes	Component 4: Areas of vulnerable marine resources	Component 5: Areas of rare marine resources
Identification and distribution of cold seep habitats	X	X		X	X
Identification and distribution of dynamic and persistent pelagic habitats			X		
Distribution of bivalve-dominated habitats				X	
Rolling closure and spawning area closure areas for fish and shellfish			X		

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- 1 As articulated in the RPB’s *Mid-Atlantic Regional Ocean Planning Framework*
 - 2 In the spirit of collaboration and to enhance consistency across regions, the Mid-Atlantic Regional Planning Body used the Northeast Draft Important Ecological Areas Framework as a basis for the Mid-Atlantic Draft Framework for the Identification of Ecologically Rich Areas. All appropriate credits for the work of the Northeast Regional Planning Body can be found in their framework, which can be accessed here: <http://neooceanplanning.org/plan>. Additionally, it is important to note that the Mid-Atlantic Framework has been further tailored to reflect the unique characteristics of the region.
 - 3 The ERA standards considered were:
 - Scientific criteria for identifying ecologically or biologically significant marine areas in need of protection in open ocean waters and deep sea habitats, United Nations Convention on Biological Diversity, COP 9 Decision IX/20, Annex
 - Essential Fish Habitat as defined by the Magnuson-Stevens Act, 16 U.S.C. §§ 1801-1884
 - Identification of Ecologically and Biologically Significant Areas, Canada Department of Fisheries and Oceans, DFO Can. Sci. Advis. Sec. Ecosystem Status Rep. 2004/006
 - A biological valuation map for the Belgian Continental Shelf, a research project to support marine spatial planning in Belgium, Research project EV/37
 - National Marine Sanctuary nomination criteria for national significance, 15 CFR Part 922.10
 - 4 Note that there are no marine life data sets listed that correspond to high productivity. Recognizing that snapshots of abundance do not necessarily equal high productivity, a question that should be asked is whether a metric for high productivity be derived from marine life data. See table 2a.
 - 5 This product could address persistence of abundance for marine mammal and bird species and persistence of biomass for fish species on an annual basis (i.e., provide a very broad characterization of marine life aggregations averaged over a year). There is potential to look at shorter time scales and certain times of year for certain species/groups. This is captured in Table 2a below.
 - 6 Species sensitivity/vulnerability groups will be derived from published studies such as “The relative vulnerability of migratory bird species to offshore wind energy projects on the Atlantic Outer Continental Shelf”, BOEM 2013-207

Mid-Atlantic Regional Council on the Ocean Data and Information Products

MARCO supported a number of important informational, data synthesis, and engagement products and processes over the course of Plan development. These include the ROA, the HUDS products, Marine Life Distribution and Abundance Synthesis Products developed by MDAT, and Tribal engagement efforts and a resulting Tribal Engagement Report. These are briefly described below and links are provided to the full resource/product/report for additional information.

MID-ATLANTIC REGIONAL OCEAN ASSESSMENT

The ROA is an information resource developed to support the regional ocean planning process. It provides an engaging and reader-friendly distillation of key information on selected topics in ocean planning for decision makers, stakeholders, and the broader public. The ROA brings together and summarizes best available information on the ocean ecosystem and ocean uses from New York to Virginia, and it serves as a gateway to more in-depth information sources.

Available here: <http://roa.midatlanticocean.org/>

HUMAN USE DATA SYNTHESIS PRODUCTS

MARCO contracted with RPS Applied Science Associates and SeaPlan to develop synthesized spatial products characterizing human use in the Mid-Atlantic region. This HUDS effort supports ocean planning priorities and goals, builds on existing data sets and web-based ocean planning tools, ensures credibility by vetting HUDS products through

stakeholder engagement, and uses a consistent, transparent approach for addressing data limitations.

Full Report available here:

http://midatlanticocean.org/wp-content/uploads/2016/04/MARCO_HUDS__FinalReport.pdf

Data Portal access available here: <http://portal.midatlanticocean.org/visualize/>

MARINE LIFE DISTRIBUTION AND ABUNDANCE SYNTHESIS PRODUCTS

MARCO contracted with MDAT to develop marine life data products, including individual species maps characterizing the distribution and abundance or biomass of 150 marine mammal, bird, and fish species, including several measures of uncertainty to supplement each map. In addition, synthesis products were developed for a range of species groups within each marine life category, to provide additional information to support different regulatory, management, and conservation activities.

Final Report available here:

http://midatlanticocean.org/wp-content/uploads/2016/06/MDAT.MARCO_FinalReport.pdf

Data Portal access available here:

<http://portal.midatlanticocean.org/visualize>

TRIBAL ENGAGEMENT REPORT

MARCO supported outreach to Mid-Atlantic Tribes to provide information about the regional ocean planning process and collect Tribal geographic data to help inform ocean planning. As part of this engagement, Tribal leaders and representatives participated in two listening sessions and three PGIS workshops that took place from New York to Virginia. Data collection included gathering information on localized Tribal attributes such as traditional homelands and current

headquarters, along with recorded stories from Tribes providing background information on the spatial data collected for inclusion in the storytelling portion of the Data Portal.

Full Report available here:

<http://midatlanticocean.org/wp-content/uploads/2016/06/Final-MARCO-Tribal-Outreach-Report.pdf>

Performance Monitoring and Evaluation

SUMMARY OF PERFORMANCE MONITORING AND EVALUATION

The purpose of performance monitoring and evaluation is to provide information that allows the RPB, stakeholders, and the public to determine whether and how effectively the planning actions implemented by the RPB are achieving the specific objectives they are intended to advance. The process is framed by the following elements:

- **Goals.** Statements of general direction, intent, and desired outcomes (from the Framework).
- **Objectives.** Statements of specific outcomes or observable changes that contribute to the achievement of a goal (from the Framework).
- **Interjurisdictional coordination actions.** Specific activities, taken individually or together, to achieve the stated objectives (from in the Plan).
- **Performance indicators.** Tools, which include qualitative statements and/or quantifiable values, to measure progress on individual actions (to be developed as a result of implementing Performance Monitoring and Evaluation Action 1, described in section 4.2).

As described in section 4.2, the RPB will develop and implement a PME plan. In doing so, the RPB will determine whether and how it will: (1) measure the performance of specific actions; (2) monitor the performance of actions (outputs); (3) evaluate the effectiveness of actions in advancing the Plan objectives (outcomes); and (4) recommend changes to Plan actions. The purpose of performance monitoring and evaluation is to assess the performance of Plan actions *in the specific context of the regional planning objectives* described in the Framework.

Note that monitoring, measurement, and assessment of ecosystem health (related to but distinct from Plan performance monitoring and evaluation) will be addressed separately. Healthy Ocean Ecosystem Action 5, in section 2.3, will identify measures of ocean ecosystem health and develop a program for monitoring those measures over time.

CONSIDERATIONS FOR DEVELOPING A PERFORMANCE MONITORING AND EVALUATION PLAN

As described in section 4.2, the RPB will develop indicators and implement an initial PME plan. In doing so, initial considerations may include:¹

- **Developing indicators that have utility in measuring plan performance and progress towards achieving Framework objectives.** Indicators that measure and evaluate Plan progress by focusing on actions related to addressing institutional coordination, stakeholder engagement and satisfaction, and the achievement of implementation Plan milestones may provide managers, stakeholders, and the public with more useful information by which to assess progress. Indicators related to the behavior of ecological or human systems typically reflect long-term trends and are challenged, given the scale and complexity of the systems, to demonstrate causality between implementation actions and outcomes in the near-term.
- **Limiting the number of indicators.** While there is no specific rule on the number of indicators that should be included, too many indicators may be difficult to track, expensive, and time consuming. A fewer number of highly relevant indicators for which data is

readily available may be of greater utility to managers and stakeholders.

- **Ensuring that data that are already being collected under existing programs are considered in identifying and evaluating indicators before additional data collection and analysis methods are developed.** This approach can create efficiencies by leveraging existing data collection and record keeping.
- **Considering qualitative or descriptive approaches for topics that do not lend themselves to a quantitative approach.** For example, an assessment of the perceived quality of stakeholder engagement in implementing the Plan may require a qualitative approach.
- **The importance of identifying baseline information for each indicator, so that progress can be measured against current conditions, recognizing that other unidentified factors may also affect Plan performance.** A description of baseline information for

each indicator is critical to ensuring that Plan progress can be measured against conditions at the start of the planning process.

- **The importance of a transparent, public process.** Plan performance monitoring and evaluation should be developed and implemented through a transparent, public process which includes appropriate stakeholders. Stakeholders should be engaged in the identification of indicators, review of indicator results, and discussion of any resulting need for Plan changes.
- **Ensuring that the evaluation of monitoring results inform changes to the Plan.** The evaluation of monitoring should address the question “what do we need to change?” The evaluation process should use impartial analytical techniques relevant to the type of indicator data. Feedback and information from the evaluation process can be used to adapt actions to better meet Plan objectives.

1 Derived from the following sources: Ehler, Charles; *A Guide to Evaluating Marine Spatial Plans*, UNESCO, 2014; Massachusetts Ocean Management Plan, 2015, *Monitoring and Evaluation Framework for Progress and Performance Assessment*; and principles described in the Northeast Ocean Plan, section 4.3.1 *Plan Performance Monitoring*.

[Photos]

FRONT COVER: Hurricane Cristobal Wave at Robert Moses State Park, Babylon, Long Island, NY. © VICKI JAURON, BABYLON AND BEYOND PHOTOGRAPHY

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**DRAFT Mid-Atlantic Regional Ocean Action Plan
July 2016**

Mid-Atlantic Regional Planning Body Co-Leads: Robert LaBelle/
Bureau of Ocean Energy Management, Kelsey Leonard/Shinnecock
Indian Nation, Gwynne Schultz/State of Maryland

Draft Plan prepared by Meridian Institute on behalf of the Mid-Atlantic
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With additional support from the Mid-Atlantic Regional Council on the
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Design by Rowe Design House.



boem.gov/Ocean-Action-Plan/