Mid-Atlantic Regional Ocean Planning

Mid-Atlantic Regional Planning Body Meeting

January 21-22, 2015

Jacob K. Javits Federal Building

26 Federal Plaza, 6th Floor

Conference Room AB

New York, NY 10278

This document is formatted for two-sided printing.

Contents

Mid-Atlantic Regional Ocean Planning Meeting Agenda

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Mid-Atlantic Regional Planning Body Meeting

January 21-22, 2015

Agenda

Meeting Objectives

- Refine and approve a proposed approach for a Mid-Atlantic Regional Ocean Action Plan (OAP)
- Identify next steps to develop the OAP, including a work plan, a stakeholder engagement plan, and interjurisdictional coordination opportunities and actions
- Develop clear and detailed guidance for further development of the Regional Ocean Assessment
- Share information about activities underway that are relevant for Mid-Atlantic regional ocean planning
- Receive public input on topics under consideration by the Mid-Atlantic Regional Planning Body

Location: Jacob K. Javits Federal Building at 26 Federal Plaza, 6th Floor
Conference Room AB, New York, NY 10278

Wednesday, January 21, 2015

8:30 am **Registration**

9:30 am **Welcoming remarks**

9:45 am **Introductions and agenda review**
Laura Cantral, Meridian Institute

10:15 am **Review of progress since last meeting and context setting**

- *Robert LaBelle, Federal RPB Co-Lead, Senior Advisor to the Director, Bureau of Ocean Energy Management, Department of the Interior*
- *Kelsey Leonard, Tribal RPB Co-Lead, Shinnecock Indian Nation*
- *Gwynne Schultz, State RPB Co-Lead, Senior Coastal and Ocean Policy Advisor, Maryland Department of Natural Resources*

During this session, RPB Co-Leads will present brief updates of progress since the last RPB meeting in May 2014 and describe the decisions to be made by the RPB at this meeting.

10:30 am **Presentation and discussion: *Proposed Approach to the Mid-Atlantic Regional Ocean Action Plan***

- *Karen Chytalo, New York Department of Environmental Conservation, Ocean Action Plan Options Workgroup Co-Chair*
- *Robert LaBelle, Federal RPB Co-Lead, Bureau of Ocean Energy Management, Ocean Action Plan Options Workgroup Co-Chair*

This session will begin with a presentation of the *Proposed Approach to the Mid-Atlantic Regional Ocean Action Plan* and how the RPB created this approach from November 2014 through January 2015, as informed by public input. This will be followed by RPB discussion.

11:15 am **Public comment session: *Proposed Approach to the Mid-Atlantic Regional Ocean Action Plan***

Interested members of the public will be provided an opportunity to offer public comment. They will be encouraged to focus their comments on the specific topics being discussed by the RPB at this point on the agenda (the *Proposed Approach to the Mid-Atlantic Regional Ocean Action Plan*) although they are welcome to address any topics they wish. Depending on how many individuals would like to comment, the time limit will be between 2-3 minutes. A sign-up list and instructions will be available at the meeting registration table.

12:00 pm **Lunch**

Lunch options are available outside of the meeting venue for public participants.

(12:30 pm is the cut-off to sign up for the 1:00 pm public comment session)

1:00 pm **Continue discussion: *Proposed Approach to the Mid-Atlantic Regional Ocean Action Plan***

This session is an opportunity for further discussion related to the OAP as informed by public input.

1:45 pm **Presentation on New York ocean planning processes**

Karen Chytalo, New York State Department of Environmental Conservation

Michael Snyder, New York State Department of State

The objective of this session is to provide an update on New York State's ocean planning processes to help inform the RPB's thinking and discussions of the regional ocean action plan.

2:15 pm **Break**

2:30 pm **Updates from the Mid-Atlantic Regional Council on the Ocean (MARCO) on its stakeholder engagement activities**

- *Kris Ohleth, MARCO Executive Director*
- *Bob Wargo, North American Submarine Cable Association, Member of MARCO Stakeholder Liaison Committee*
- *John Harms, Port of New York and New Jersey, in collaboration with MARCO Stakeholder Liaison Committee*
- *Gwynne Schultz, State RPB Co-Lead, Maryland Department of Natural Resources, MARCO Management Board Chair*

This session will provide MARCO and representatives of the MARCO Stakeholder Liaison Committee an opportunity to update the RPB about MARCO's recent stakeholder engagement efforts, activities of the Stakeholder Liaison Committee, and potential future stakeholder engagement opportunities.

3:00 pm **Updates on Tribal engagement efforts**

- *Kelsey Leonard, Tribal RPB Co-Lead, Shinnecock Indian Nation*
- *Gwynne Schultz, State RPB Co-Lead, Maryland Department of Natural Resources, MARCO Management Board Chair*

This session will be an opportunity for the Tribal RPB Co-Lead and MARCO Management Board Chair to update the RPB about the status of tribal engagement in the Mid-Atlantic region.

(3:45 pm is the cut-off to sign up for the 4:15 pm public comment session)

3:15 pm **Presentation and discussion: Regional Ocean Assessment outline and example sections**

Kevin Chu, National Oceanic and Atmospheric Administration, Regional Ocean Assessment Workgroup Co-Chair

This session will begin with a presentation of the Regional Ocean Assessment (ROA) outline and example sections developed by the RPB as informed by public input. This will be followed by RPB discussion.

4:15 pm **Public comment session: Regional Ocean Assessment outline and example sections**

Interested members of the public will be provided an opportunity to offer public comment. They will be encouraged to focus their comments on the specific topics being discussed by the RPB at this point on the agenda (the Regional Ocean Assessment outline and example sections) although they are welcome to address any topics they wish. Depending on how many individuals would like to comment, the time limit will be between 2-3 minutes. A sign-up list and instructions will be available at the meeting registration table.

5:00 pm **Reflection on public comment and day 1 wrap-up**

The RPB will briefly reflect on public input during the previous comment session and any other points to conclude day 1.

5:15 pm **Adjourn**

Thursday, January 22, 2015

8:30 am **Registration**

9:00 am **Welcome back, summary day 1, agenda review day 2**

Laura Cantral, Meridian Institute

9:15 am **Discussion, reflection on comments received, and approval of the *Approach to the Mid-Atlantic Regional Ocean Action Plan***

This session will be an opportunity for the RPB to discuss any outstanding topics related to the *Proposed Approach to the Mid-Atlantic Regional Ocean Action Plan,* including any final refinements, and approve the approach.

10:00 am **Discussion, reflection on comments received, and refinement of ROA outline and example sections**

This session will be an opportunity for the RPB to discuss any outstanding topics related to the ROA materials and to discuss whether the RPB is comfortable with proceeding to populate the ROA as proposed.

10:30 am **Break**

10:45 am **Panel and discussion: Data and analysis tools to support ocean planning going forward**

- *Nick Napoli, Northeast Regional Ocean Council*
- *Pat Halpin, Duke University*
- *Laura McKay, Virginia Coastal Zone Management Program*

This panel will discuss potential analyses and products that could support the work of the RPB going forward. This will be followed by RPB discussion.

12:15 pm **Lunch**

Lunch options are available outside of the meeting venue for public participants.

1:15 pm **Interjurisdictional coordination opportunities and next steps**

Deerin Babb-Brott, SeaPlan

Interjurisdictional coordination would be a key component of the proposed OAP approach. This session will begin with a presentation of the *Proposed Process, Criteria, and Examples of Potential Interjurisdictional Coordination Actions* document. This will be followed by RPB discussion of a proposed process and criteria for identifying interjurisdictional coordination (IJC) opportunities and actions, examples offered in the document, consideration of how potential data and analyses discussed earlier in the meeting could support IJC discussions, and ideas about IJC opportunities in the region.

2:45 pm **Discussion of next steps for RPB workflows**

During this session, the RPB would discuss next steps for key workflows needed to support development of the OAP in 2015-2016. These would include:

- 2:45 pm: Stakeholder engagement opportunities and next steps
- 3:15 pm: ROA process and timeline
- 3:30 pm: Moving ahead to develop the OAP

(3:30 pm is the cut-off to sign up for the 4:00 pm public comment session)

3:45 pm **Break**

4:00 pm **Public comment session: Additional topics, including data and analysis tools, IJC, and RPB next steps**

Interested members of the public will be provided an opportunity to offer public comment. They will be encouraged to focus their comments on the specific topics being discussed by the RPB at this point on the agenda although they are welcome to address any topics they wish. Depending on how many individuals would like to comment, the time limit will be between 2-3 minutes. A sign-up list and instructions will be available at the meeting registration table.

4:45 pm **Identify any next steps still outstanding, and revisit timeline for 2015-2016**

The RPB will wrap up the meeting by reflecting once more on the timeline for 2015-2016 and discussing any remaining next steps that have not yet been clarified.

5:15 pm **Summary**

5:30 pm **Adjourn**

Mid-Atlantic Regional Planning Body Roster of Members and Alternates

Mid-Atlantic Regional Planning Body

Roster of Members and Alternates

January 2015

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Mid-Atlantic Regional Planning Body Timeline

Updated MidA RPB Timeline

2014 Accomplishments
- May RPB meeting: Framework goals and objectives approved
- Charter approved in September
- Developed options for OAP approach
- Developed ROA approach
- Held two rounds of public listening sessions

2015 Proposed Process Steps
- Approval of OAP approach
- Development and updates of work plan
- Workflows to develop OAP underway
- Two RPB meetings

2016 Proposed Process Steps
- Two RPB meetings
- Release of Draft OAP
- Release of Final OAP

Late 2016: National Ocean Council certification of Mid-Atlantic Ocean Action Plan

2017 and Beyond
- Implementation of Mid-Atlantic Ocean Action Plan
- Continued work to formalize IJC commitments
- Monitoring of implementation efforts and periodic updates

Continuous: Stakeholder Engagement, Data Collection/Sharing/Integration, and Refinement of Products and Processes

Proposed Approach to the Mid-Atlantic Regional Ocean Action Plan

Note to the reader: This document has been developed by the MidA RPB in response to careful consideration of verbal and written comments received by members of the public between October 24, 2014 and November 20, 2014 on the document entitled Mid-Atlantic Regional Ocean Action Plan Options. *It is the intention of the MidA RPB to hear final public comments and approve the approach at the January 21-22, 2015 meeting in New York, New York.*

Proposed Approach to the Mid-Atlantic Regional Ocean Action Plan

Introduction

The purpose of this document is to propose an approach to the Mid-Atlantic Regional Ocean Action Plan (OAP) for Mid-Atlantic Regional Planning Body (MidA RPB or RPB) deliberation and decision-making at its in-person meeting on January 21-22, 2015 in New York, New York. Appended to this document is a draft OAP outline that will also be discussed at the RPB meeting, although a decision about that draft outline is not being sought at this time. The MidA RPB expects the draft outline to be modified as work proceeds and the RPB learns more about the Mid-Atlantic ocean ecosystem, ocean uses, and various tools available for planning.

In May 2014, a MidA RPB internal workgroup was established to consider options for the type of OAP 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 process-oriented to geographically-oriented were considered. These options were released for public consideration and input in October 2014. Feedback received in written form and through a series of public listening sessions included support for various specific elements of the proposed draft options, development of a hybrid approach that can address both region-wide and geographically-specific opportunities, and further analysis of ecological and economic ocean resources of the Mid-Atlantic to inform planning and management. The RPB also heard concerns from stakeholders regarding the need to ensure RPB actions are appropriate and achievable under existing authorities and are identified and implemented with sufficient stakeholder input and support. Given this feedback, the workgroup combined the preferred ideas from each option into the approach proposed in this document.

By participating in the regional ocean planning process and working collaboratively to develop an OAP, MidA RPB member entities have agreed to: participate in the planning process; work collaboratively to develop an OAP; build on and complement existing programs, partnerships, and initiatives; and commit to following the plan to the extent that it is consistent with existing authorities. The purpose and mission of the RPB are further described in the *Charter for the Mid-Atlantic Regional Planning Body,* available on the RPB website at http://www.boem.gov/MidA-RPB-Charter/.

It is important to remember that, in accordance with the National Ocean Policy, "regional planning bodies are not regulatory bodies and have no independent legal authority to regulate or otherwise direct Federal, State, Tribal, or local government actions. All activities will continue to be regulated under existing authorities."

Proposed approach to the Mid-Atlantic Regional Ocean Action Plan

The proposed approach to the OAP would support the goals and objectives for Mid-Atlantic regional ocean planning set forth in the *Mid-Atlantic Regional Ocean Planning Framework* (Framework), available on the RPB website at www.boem.gov/Mid-Atlantic-Regional-Ocean-Planning-Framework/. It would be grounded in existing data and analysis, as well as new data and analysis and stakeholder input. The MidA RPB is aiming to reach consensus on a first iteration OAP by the end of 2016.

Under the proposed OAP approach, the RPB would identify and implement interjurisdictional actions (i.e., agencies working more closely together across organizations). Enhanced coordination would increase information sharing, improve interagency coordination, and could inform more holistic and coherent decision making on a regional basis going forward. The actions would help MidA RPB member entities achieve Framework goals and objectives under existing authorities and practices. MidA RPB collaboration on these actions would be pursued through both a region-wide approach and, in some situations, within specific geographic areas as follows:

- *An initial limited number of region-wide interjurisdictional actions* would be pursued by addressing four basic categories of opportunities: (1) identifying research needs; (2) informing and improving management decisions; (3) improving information for environmental and regulatory review; and (4) leveraging resources. Region-wide actions would be identified in coordination with neighboring regions in recognition of the fact that human activities, marine life, and other key components of the marine system cross regional boundaries.
- *An initial limited number of specific geographic areas* would be identified that would benefit from enhanced information and interagency coordination to inform improved decision making. These areas should be selected because they can potentially demonstrate progress on region-wide interjurisdictional issues, and other criteria such as:
    - significant ecological value
    - socio-economic value
    - areas of high current or potential user conflict

  As appropriate, the RPB would delineate the boundaries of these specific geographic areas and spatial information would enhance the RPB's understanding of important characteristics of and activities in those areas. Specific potential interagency actions and improvements to decision making processes would then be identified for those areas. These specific actions and process improvements would be identified based on the

specific needs and characteristics of each area and would be informed by input from stakeholders.

In addressing both specific region-wide actions and geographies, the MidA RPB would:

- **Clarify criteria:** Document criteria and processes for choosing the initial region-wide interjurisdictional actions and specific geographic areas. For example, consideration should be given to the regional applicability of issues, breadth of RPB member entities affected, potential transferability of lessons to be learned, etc.
- **Analyze compatibility:** Strive to enhance compatibility among ocean uses and between uses and ecosystem health objectives. This may involve use of one or more types of compatibility assessment to inform decision making, and the OAP would potentially include commitments to use resulting products to inform decision making under existing authorities. The specific types of assessments and how information resulting from them would be used to inform decision making have yet to be determined.
- **Improve collective understanding:** Seek a better, shared understanding of the Mid-Atlantic ocean including human uses, natural resources, the ecosystem services the ocean provides, and important and sensitive habitats by clearly delineating and documenting those in a manner that stakeholders, ocean resource managers, and other decision makers can use to inform decision making going forward. The specific types of data and analysis and exactly how those would inform decision making have yet to be determined.

Notes:

- The process steps and timeline for identifying region-wide interjurisdictional coordination opportunities and actions and specific geographic areas, which would include stakeholder input, have not yet been determined. These will be reflected in a MidA RPB work plan in early 2015.
- In further iterations of the OAP, additional region-wide interjurisdictional coordination opportunities and actions and specific geographic areas would potentially be identified and included in the planning effort.

Appendix: Draft Outline of Proposed Approach

This appendix provides an illustration of how the structure of a plan might appear under the proposed approach and an annotated description of each possible section. ***This outline will not be approved by the RPB at the January 21-22, 2015 meeting****, but rather will remain open to refinement over the course of 2015-2016, and the MidA RPB will continue to welcome public input on it. Each component of the outline can draw from and integrate with existing and ongoing data gathering and planning efforts, and would inform decision making under existing authorities. A complete draft of a first iteration OAP would be available for review by the end of 2016, and the OAP would be reviewed and updated periodically.*

Introduction to the OAP

The OAP would begin with brief framing and context describing the regional ocean planning process. This would include some description and explanation of how the RPB's work fits within the context of existing state and regional priorities, authorities, partnerships, and planning efforts.

Mid-Atlantic Framework for Regional Ocean Planning

The goals and objectives established in the *Mid-Atlantic Framework for Regional Ocean Planning* (Framework) would be reiterated here.

Regional Ocean Assessment

Regional Ocean Assessment (ROA) is an ongoing effort to compile best available information on ocean uses and resources in the Mid-Atlantic. The ROA would be a companion product to the OAP, and would live primarily in digital format and include narrative descriptions, summaries of key concepts, spatial data where applicable, and links to further information. It is structured according to the goals and objectives identified in the Framework and will be updated over time.

Data Analyses and Decision Support Tools

To support the planning process, the MidA RPB will, pending resources, consider conducting additional analyses to understand areas of ecological importance, characterize the Mid-Atlantic marine economy, examine compatibility among resources and uses, etc. These kinds of additional analyses could improve understanding about the interactions between and among ocean uses and resources in the Mid-Atlantic, serve as a bridge between the ROA and OAP, and provide the RPB with information it needs to determine meaningful interjurisdictional coordination actions to improve management of ecological resources and economic activities. More information about potential analyses for consideration is provided in a separate document entitled *Potential Data Analyses and Decision Support Tools*.

Interjurisdictional Coordination Opportunities and Actions

This section would include:

- Narrative and spatial description of the region-wide interjurisdictional opportunities and actions and key geographies identified by the MidA RPB.
- Articulation of RPB member entity commitments to use the information in the OAP and Mid-Atlantic Ocean Data Portal (Data Portal) and improve business practices to address those region-wide actions and specific geographies.

RPB member entity commitments would focus on:

- Enhanced coordination among Federal, State, and Tribal entities.
- The use of existing and new data and information from the Data Portal and other sources (e.g., ROA and additional analyses) to achieve MidA RPB Framework goals and objectives under existing authorities.

Coordinated actions and use of information could address four basic categories of opportunities: (1) identifying research needs; (2) informing and improving management decisions; (3) improving information for environmental and regulatory review; and (4) leveraging resources.

More information about interjurisdictional coordination including a proposed process, criteria, and examples of potential interjurisdictional actions are presented in *Draft Process, Criteria, and Examples of Potential Interjurisdictional Coordination Actions*, which is included in the meeting materials for the January 21-22, 2015 meeting.

Plan Updates

This section would describe the process for updating the OAP periodically. The OAP would be reviewed and updates would be considered periodically with additional and/or refined information, new and/or refined region-wide actions and specific geographies, and commitments made in the OAP to address them. Major outcomes of various assessments and analyses would be reviewed and updates would be considered periodically, or as indicated by changed circumstances and data. Minor process and data improvements could be ongoing throughout implementation. The appropriate timeframe for updating the OAP would need to be determined.

Monitoring Strategy

Progress made would be evaluated through the development of metrics and criteria agreed upon by the RPB. The monitoring strategy would be described in this section of the OAP.

Stakeholder Engagement Plan (possibly as appendix to OAP)

A stakeholder engagement plan would be developed in early 2015, in conjunction with an RPB work plan, to guide meaningful stakeholder engagement throughout the development of the OAP in 2015 and 2016. In the OAP itself, ongoing key stakeholder engagement commitments

and opportunities would be articulated to show how the RPB plans to sustain stakeholder engagement throughout implementation.

RPB Member Institution Capacities and Authorities (possibly as appendix to OAP)

An additional appendix could include a description of the capacities and authorities of each RPB member entity.

RPB Charter (possibly as appendix to OAP)

Regional Ocean Assessment Outline and Example Sections

Meeting Material | January 21-22, 2015 Mid-Atlantic Regional Planning Body Meeting

Memorandum to: Mid-Atlantic Regional Planning Body (MidA RPB)

From: Sarah Cooksey (Delaware) and Kevin Chu (NOAA)
Co-Chairs, Regional Ocean Assessment Work Group

Date: January 12, 2015

Subject: Decisions Requested re: Mid-Atlantic Regional Ocean Assessment

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The Mid-Atlantic Regional Ocean Assessment (ROA) is an ongoing effort to compile the best available information to support development of the Mid-Atlantic Regional Planning Body's (RPB) Ocean Action Plan (OAP). Building upon the goals and objectives in the Mid-Atlantic Regional Ocean Planning Framework, the ROA will provide information about the baseline conditions, resources, and uses of the ocean. The ROA is not envisioned as an encyclopedia of information about the region. Rather, it will provide brief summaries of specific topics of interest, focusing on information that Federal, State and Tribal governments should be aware of when collaborating on ocean management.

Outline

The proposed outline has been modified based on comments received from the RPB and during public listening sessions. This version includes more topics than the one reviewed in November.

The ROA Work Group (WG) seeks RPB approval to use this draft outline as the basis for further development of the ROA. **The adoption of this outline at this stage of drafting does not mean that the outline cannot be modified in the future**. As topics are identified for which the RPB needs information, the outline can be modified and information on new topics compiled and included.

Decisions for the RPB:

1. Is the revised version of the outline sufficient to continue drafting other sections of the ROA?
2. Which topics would the RPB would like to see prioritized for development during the spring of 2015?

Example Sections

To illustrate the information we envision including in the ROA, the WG is providing three example sections on Deep Sea Corals, Renewable Energy, and Panama Canal Expansion. Each example section follows a standardized format to address the complex and varied needs of the RPB in a concise and user-friendly way. These topics have been drafted by

Federal leads and reviewed by the WG, including Federal, State, and Tribal members. Nevertheless, we do not consider the content of these example sections to be complete because there has not yet been formal public, scientific or technical expert review of the contents. The WG recommends seeking input from the scientific community once additional ROA sections have been drafted.

Decisions for the RPB:

Format and Content

3. Is the level of information appropriate? (too detailed? not detailed enough?)
4. Is the scope of the information on each topic sufficient to inform the development of the OAP?

ROA Outline

Major Sections (Goals/Objectives)	Sections	Topics	Sub-Headings/ Content
SECTION I **Goal- Healthy Ocean Ecosystem: Promote ocean ecosystem health, functionality, and integrity through conservation, protection, enhancement, and restoration.**			
I.1 Biology & Ecology	**Introduction**		
	Habitats		
		Benthic (sea floor)	*Biogenic Habitats*
			Hard Bottom
			Soft Bottom
		Pelagic (water column)	*Coastal Bays*
			Continental Shelf
			Deep Water
	Flora		
		Marine Algae	
		Plankton	
		Submerged Aquatic Vegetation	
	Invertebrates		
		Crustaceans	*e.g. Blue Crab, American Lobster, Jonas Crab, Red Crab, other species TBD*
		Jellyfish & Comb Jellies	
		Marine Worms	
		Mollusks	*e.g. Surf Clams & Ocean Quahogs, Oysters, Sea Scallops, Bay Scallops, Squids, other species TBD*
		Sea Stars, Sea Urchins & Sea Cucumbers	
		Sponges, Anemones & Corals	*e.g. Deep Sea Corals, other species TBD*
		Zooplankton Community	
	Vertebrates		
		Bony Fishes	*Demersal: e.g. Sand lance, Summer Flounder, Black Sea Bass, other species TBD*
			Diadromous: e.g. River Herring, Sturgeons, other species TBD
			Large Pelagic Species: e.g. Marlins, Tunas, other species TBD
			Small Pelagic Species: e.g. Menhaden, Butterfish, other species TBD
		Sharks & Rays	*e.g. Spiny Dogfish, White Sharks, other species TBD*
		Birds	*Seabirds, e.g. Gulls, Shearwaters, Gannets, other species TBD*

Major Sections (Goals/Objectives)	Sections	Topics	Sub-Headings/ Content
I.1 Biology & Ecology (cont.)	**Vertebrates (cont.)**	**Birds (cont.)**	*Shorebirds, e.g. Plovers, Sandpipers, Phalaropes, other species TBD*
		Mammals	*Toothed Whales & Dolphins: e.g. Sperm Whales, Bottlenose Dolphins, other species TBD*
			Baleen Whales, e.g. Northern Right Whale, Humpback Whale, other species TBD
			Seals
		Sea Turtles	*e.g. Green, Kemps's Ridley, Loggerhead, other species TBD*
I.2 The Ocean Environment	**Introduction**		
	Natural Conditions and Actions		
		Currents	
		Erosion & Longshore Transport	
		Upwelling	
		Water Chemistry	
		Wind	
	Physical Features		
		Barrier Islands	
		Beaches	
		Harbors	
		Under-sea sand waves	
		Shelf-slope Break, Submarine Canyons	
		Continental Shelf	
		Deep Water	
		Reefs	
I.3 Emerging Issues	**Introduction**		
		Carbon Sequestration & Ocean Acidification	
		Ocean Warming	
		Coastal Inundation	
		Sea Level Change	
		Water Quality	
		Invasive Species	

Major Sections (Goals/Objectives)	*Sections*	*Topics*
SECTION II **Goal - Sustainable Ocean Uses: 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.**		
II.1 National Security		
II.2 Ocean Energy	**Conventional Energy**	
	Renewable Energy	
II.3 Fishing	**Commercial**	
	Fishing for Sustenance	
	Recreational	
II.4 Ocean Aquaculture		
II.5 Marine Commerce & Navigation	**Maritime Traffic Analysis**	
	Panama Canal Expansion	
	Post-Panamax Port Issues	
	Proposed Anchorage Areas	
	Shipping (Mid-Atlantic Ports)	
	Short-Sea-Shipping and Marine Highways	
	LNG as an Import & Export	
II.6 Offshore Sand Management		
II.7 Non-consumptive Recreation		
II.8 Tribal Uses	**Aquaculture**	
	Canoe Journey Routes	
	Climate Change	
	Conservation Resource Management	
	Fishing	
	Heritage Sites	
	Submerged Cultural Resources	
	Subsistence Issues	
	Traditional Navigation Routes	
	Whales	
II.9 Undersea Infrastructure	**Current Undersea Infrastructure**	
	Foreseeable Future Infrastructure	

Mid-Atlantic Regional Ocean Assessment Example Sections

Contents

Deep Sea Corals

Authors: *David Stevenson (NOAA) and Kiley Dancy (MAFMC),* ***Contributors:*** *Kevin Chu (NOAA)*

Introduction

As their name implies, deep sea corals are unlike the shallow, reef-forming corals that require warm water and sunlight. Deep sea corals inhabit deep, cold water environments. Although some species also grow in shallower water on the Mid-Atlantic shelf (some as shallow as intertidal), most of them are found on the Outer Continental Shelf (OCS) and slope. Overall, scientists have discovered more species of deep sea corals (also known as cold-water corals) as shallow-water species throughout the world. Most species grow on rocky substrates and are particularly abundant in submarine canyons that cut into the outer shelf and slope.

Deep sea corals grow very slowly and live for hundreds and sometimes thousands of years. They provide refuge for many other species, thereby increasing the productivity of the environment. Due to the depths where these corals occur and the significant resource investment required to study them, there is still much to be discovered regarding the biology, interactions with other species and intersections with natural events and human activities.

One of the objectives of the Mid-Atlantic Regional Council on the Ocean (MARCO) is to coordinate among its members the protection of important marine habitats, including sensitive and unique offshore areas such as corals and canyons (http://midatlanticocean.org/shared-regional-priorities/marine-habitats).

For more information, see the following:

- The NOAA's National Marine Fisheries Service, Habitat Conservation provides an array of information on Deep Sea Corals and their habitat requirements, including sensitive and unique offshore locations such as coral canyons: http://www.habitat.noaa.gov/abouthabitat/deep sea corals.html.
- The Smithsonian Institution's Ocean Portal has a good introduction to deep sea corals at: http://ocean.si.edu/deep-sea-corals.

Economic, Social and/or Cultural Importance Considerations

There is inherent cultural and ecological value in conserving corals in isolated deep sea environments. They are long-lived and grow slowly, making them particularly susceptible to stress or damage since their recovery timeframe is extremely slow. They provide an oasis for marine fish and invertebrates at depths with otherwise limited habitat substrates. They are especially vulnerable to any disturbances that affect the ocean bottom (e.g. contact with fishing gear, oil and gas drilling, cable laying activities, etc.). Conservation of deep sea corals and their habitats is a growing area of international attention as human activities extend into deeper waters.

For more information, see the following:

- For more information about deep sea corals and relevant policy considerations in the United States National Ocean Policy Implementation Plan (2013) http://www.whitehouse.gov/sites/default/files/national_ocean_policy_implementation_plan.pdf

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Current Status and Trends/Indicators

Current Status:
Within the Mid-Atlantic region, research about deep sea corals, including known and predicted (based on scientific models) locations in the Mid-Atlantic, has been conducted and is still ongoing (NOAA, http://oceanexplorer.noaa.gov/okeanos/explorations/ex1404/dailyupdates/dailyupdates.html; BOEM, http://www.boem.gov/Curriculum-Lophelia-II/).

Trends:
Due to the technical and financial challenges to studying the deep ocean, it is difficult to assess trends in deep sea coral populations. What is known is that many deep-sea corals grow extremely slowly and that they are damaged by human activities. Once damaged, the corals and the communities they support may take centuries to recover.

Identification of Gaps and Ongoing Studies

Gaps:
More research is necessary to understand the biology of deep sea corals, ecological connections and their sensitivity to human activities, including:

- Improving scientific knowledge regarding the distribution and abundance of deep-sea corals in the Mid-Atlantic region and the ecosystem services they provide for other organisms,
- Identifying and monitoring activities on the OCS and slope that could potentially be harmful to deep-sea corals and their habitats, and
- Identifying areas and fishing gear restrictions that can improve protection for deep-sea corals and their habitats while having acceptable impacts on existing fishing activities.

Ongoing Studies:
The US Government has funded research on deep sea corals since at least the 1970's and 1980's. Research in the Northeast is continuing through 2015. (NOAA, http://coralreef.noaa.gov/deepseacorals/noaasrole/research_technology/ and http://coastalscience.noaa.gov/research/scem/coral/deep_coral)

For more information, see the following:

- From 2013-2015, NOAA's Deep Sea Coral Research and Technology Program is coordinating field research in the northeast region. NOAA's research activities are being done in partnership with the NOAA's Northeast Fisheries Science Center, its Office of Exploration and Research, NOAA's National Center for Coastal Ocean Science, and a number of academic colleagues:
  http://oceanexplorer.noaa.gov/okeanos/explorations/acumen12/welcome.html
  http://oceanexplorer.noaa.gov/explorations/13midatlantic/background/background.html
  http://oceanexplorer.noaa.gov/okeanos/explorations/ex1404/dailyupdates/dailyupdates.html.
- NOAA has developed a strategic plan for deep sea coral conservation:
  http://static.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/51784380e4b01256f21cc732/1366836096652/noaa_dsc_strategicplan.pdf
- From 2011-2013, BOEM conducted multiple research cruises to the Norfolk and Baltimore canyons. BOEM, Environmental Studies Program: Ongoing Studies; Gregory Boland:

  http://oceanexplorer.noaa.gov/explorations/12midatlantic/welcome.html
  http://oceanexplorer.noaa.gov/explorations/13midatlantic/welcome.html
  http://oceanexplorer.noaa.gov/explorations/13landerrecovery/welcome.html

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Intersections with other ROA Topics

Corals may be impacted by fishing activities, undersea cables, offshore oil drilling, and any other activities that affect the ocean floor on the OCS and slope. They may be affected by sediments from human activities. In addition, coral growth may be compromised by ocean acidification.

At this time, area-based restrictions on bottom trawling are in place in portions of four offshore canyon, three in the area managed by the New England Fishery Management Council (FMC) and one (Norfolk Canyon) in the southern end of the region. These gear restricted areas were created to manage squid trawling on bottom habitats used by federally-managed demersal fish species and to protect hard clay outcrops used by tilefish to make burrows. They also indirectly benefit deep sea corals by protecting their habitats from disturbance.

For more information, see the following:

- The Mid-Atlantic and New England FMC's are currently developing measures to protect deep sea corals from fishing gear that could damage corals or their habitats on the OCS and slope between North Carolina and Georges Bank: http://www.mafmc.org/actions/msb/am16.
- Observations of deep sea corals and their habitats made during these cruises are being used by the Mid-Atlantic FMC to develop area-specific deep-sea coral management measures. Area-based management proposals are also based on the results of a predictive model and bathymetric data that highlight areas of high habitat suitability (http://www.habitat.noaa.gov/pdf/blueprintinitiatives.pdf).

Maps relevant to the Activities & Resources

a. Societal Uses and Activities: current & planned

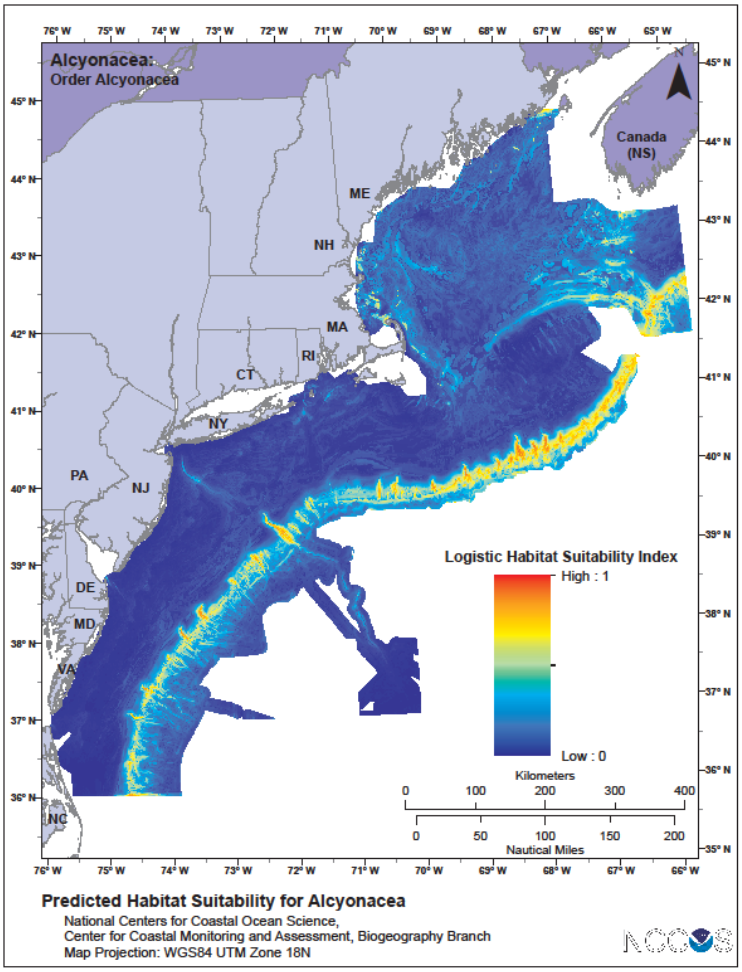
TBD, if applicable

b. Resource distribution and abundance

- The Mid-Atlantic Ocean Data Portal includes coral point data linked to detailed survey records and the Alcyonacea coral family predictive model illustrated below: http://portal.midatlanticocean.org/learn/conservation
- A summary of research and an extensive collection of maps showing known and modeled coral distribution along the Mid-Atlantic shelf slope break and within submarine canyons is found within this document: Mid-Atlantic Fishery Management Council (Aug 2014): Measures to Protect Deep Sea Corals from Impacts of Fishing Gear (DRAFT) http://static.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/53e4cacde4b09a46dcc9aafb/1407503053985/Corals%20PID_August%202014.pdf

c. Areas of Interest

TBD, if applicable



Predicted areas in the Mid-Atlantic and northeast where species of the coral family Alcyonacea may be found. (Source: NOAA)

References

a. Peer reviewed or government documents

Under Construction

b. Other sources of information, including grey literature

Under Construction

Key Words

Deep sea corals, outer continental shelf, fishing, submarine canyons, undersea cables, ocean acidification

Renewable Energy

Authors: *Michelle Morin (BOEM) and Mary Boatman (BOEM)*

Introduction

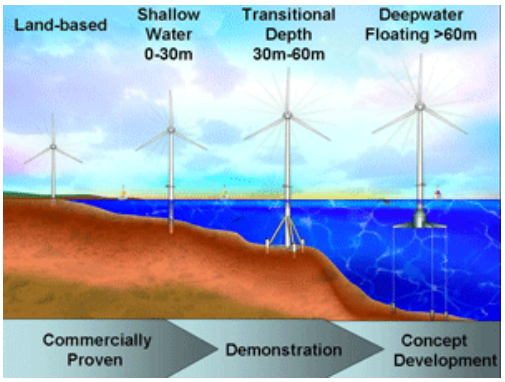
Ocean renewables could play a significant role diversifying our nation's energy portfolio. There is the potential to harness energy from offshore wind, waves, tides and currents.

Offshore Wind Energy

Wind energy has been used by humans for more than two thousand years. For example, windmills were often used by farmers and ranchers for pumping water or grinding grain. In modern times, wind energy is mainly used to generate electricity, primarily through the use of wind turbines. All wind turbines operate in the same basic manner. As the wind blows, it flows over the airfoil-shaped blades of wind turbines, causing the turbine blades to spin. The blades are connected to a drive shaft that turns an electric generator to produce electricity.

The nacelle is a shell that encloses the gearbox, generator, and blade hub (generally a three-bladed rotor connected through the drive train to the generator) and the remaining electronic components. Once the turbine is operational, wind sensors connected to a yaw drive system turn the nacelle to face into the wind, maximizing the amount of electricity produced.

While the tower, turbine, and blades of offshore turbines are generally similar to onshore turbines, the substructure and foundation systems that support the tower and nacelle differ considerably (see figure below). Their foundations must be designed to withstand the harsh environment of the ocean, including storm waves and hurricane-force winds. The most common substructure type is the monopile—a large steel tube with a diameter of up to 20 feet. Monopiles are typically used in water depths up to 100 feet (30 meters). The piles are driven into the seabed at depths of 80 to 100 feet below the mud line, ensuring the structure is stable. A transition piece protrudes above the waterline, which provides a level flange to fasten the tower. In even shallower environments with firm seabed substrates, gravity-based systems can be used, which avoids the need to use a large pile-driving hammer. Tripods and jackets foundations have been deployed in areas where the water depth starts to exceed the practical limit for monopiles.



Source: National Renewable Energy Laboratory (NREL) 2014

All of the power generated by the wind turbines needs to be transmitted to shore and connected to the power grid. Each turbine is connected to an electric service platform (ESP) by a power cable (BOEM, 2014a). The ESP is typically located somewhere within the turbine array, and it serves as a common electrical collection point for all the wind turbines and as a substation. In addition, ESP's can be outfitted to function as a central service facility, and may include a helicopter landing pad, communications station, crew quarters, and emergency backup equipment. After collecting the power from the wind turbines, high voltage cables running from the ESP transmit the power to an onshore substation, where the power is integrated into the grid. The cables used for these projects are typically buried beneath the seabed. Cables are buried to avoid or minimize impacts from anchoring and fishing gear, and also for heat dissipation. The typical burial depths are 1 to 2 meters. Where minimal burial depth isn't possible, cable protection measures would be used, such as concrete mattresses, rock armoring, and articulated pipe or ducting. Cables could become exposed with time, especially in areas with mobile sediments.

Offshore wind turbines are being used by a number of countries to harness the energy of strong, consistent winds that are found over the oceans. The first offshore wind project was installed off the coast of Denmark in 1991, and wind turbines have been installed offshore a number of countries, mostly in Europe, to harness the energy of the moving air over the oceans and convert it to electricity. Wind resource potential is typically given in gigawatts (GW), and 1 GW of wind power could supply between 225,000 to 300,000 average U.S. homes with power annually (BOEM, 2014a). The Department of Energy (DOE) estimates a gross wind power resource of over 4,000 GW off the coast of the United States (Lopez et al., 2012, Table 7). For comparison, 4,000 GW is over four times the generating capacity of the current U.S. electric grid (EIA, 2013).

For more information, see the following:

- DOE's "How does a wind turbine work?" http://energy.gov/eere/wind/how-does-wind-turbine-work
- NREL's "Wind Energy Basics: How Wind Turbines Work" http://www.nrel.gov/learning/re_wind.html

- DOE's "Wind Resource Assessment and Characterization" http://energy.gov/eere/wind/wind-resource-assessment-and-characterization.

Offshore Hydrokinetic

Marine hydrokinetic (MHK) energy technologies convert the energy of waves, tides, and currents into electricity. This is an emerging industry with hundreds of potentially viable technologies (DOE, 2015). Test and pilot projects are being planned and deployed to evaluate the technical and economic viability of MHK energy production. A commercial-scale facility on the Mid Atlantic Outer Continental Shelf (OCS) is not anticipated in the foreseeable future and therefore, not discussed further in this document.

For more information, see the following:

- DOE: http://energy.gov/eere/water/marine-and-hydrokinetic-energy-research-development;
- BOEM: http://www.boem.gov/Renewable-Energy/; and
- Open Energy Information: http://en.openei.org/wiki/Marine_and_Hydrokinetic_Technology_Database

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Economic, Social and/or Cultural Importance Considerations

Renewable energy development has cross-cutting economic, social and cultural implications for the Mid-Atlantic region. Renewable energy projects would also support three goals of the President's All-of-the-Above energy strategy: 1) to support economic growth and job creation; 2) enhance energy security; and 3) deploy low-carbon energy technologies and lay the foundation for a clean energy future (Executive Office of the President of the United States, 2014).

For more information, see the following:

- U.S. Report- The All-of-the-Above Energy Strategy as a Path to Sustainable Economic Growth: http://www.whitehouse.gov/blog/2014/05/29/new-report-all-above-energy-strategy-path-sustainable-economic-growth.

Current Status and Trends/Indicators

Offshore Wind Energy

Current Status:

Wind speeds off the Atlantic Coast are lower than wind speeds off the Pacific Coast. However, the presence of shallower waters in the Atlantic could potentially make development and siting more economically feasible. Offshore winds also tend to blow harder and more uniformly than on land. The DOE provides a number of maps showing average wind speed data through its

Resource Assessment and Characterization studies (DOE, 2014; http://energy.gov/eere/wind/wind-resource-assessment-and-characterization). The NREL estimates a gross wind power resource of 4,200 GW off the coast of the United States (Lopez et al., 2012).

While the United States does not have any operational offshore projects, there are multiple projects in the planning and leasing stages. Within Federal waters, BOEM has the authority to issue leases, easements, and rights-of-way on the outer coastal shelf for the purpose of renewable energy development (BOEM, 2014b; http://www.boem.gov/Renewable-Energy). Currently, within the Mid-Atlantic and beyond, BOEM has leased areas for commercial development of wind energy off the shores of Delaware, Maryland, Virginia, North Carolina, Rhode Island, and Massachusetts. BOEM is in the process of leasing areas offshore New Jersey New York, North Carolina, and additional areas offshore Massachusetts, and is considering research lease requests and proposals off the shores of Virginia and Oregon (BOEM, 2014c; http://www.boem.gov/Renewable-Energy-State-Activities).

After execution of a commercial lease, the lessee has five years to conduct site assessment activities (install and operate meteorological towers and buoys) and submit a Construction and Operations Plan (COP). To date, no plans for commercial-scale development have been submitted for the Mid-Atlantic.

Within state waters, the U.S. Army Corps of Engineers (USACE) has the lead for permitting renewable energy facilities. Along the Mid-Atlantic coast, one small-scale wind project is fully permitted in state waters. On June 14, 2012, the USACE issued a permit to Fishermen's Energy of New Jersey, LLC to install five 5-megawatt wind turbines approximately three miles off the coast of Atlantic City, New Jersey (Fishermen, 2014; http://www.fishermensenergy.com/atlantic-city-windfarm.php).

Trends:
The DOE's report *'2014 Offshore Wind Market and Economic Analysis'* states "Globally, offshore wind projects continue to trend farther from shore into increasingly deeper waters; parallel increases in turbine sizes and hub heights are contributing to higher reported capacity factors" (Navigant Consulting, Inc. 2014). Approximately 90% of the U.S. outer continental shelf wind energy occurs in waters that are too deep for current turbine technology. New technologies, such as innovative foundations and floating wind turbines, will help transition wind power development into the harsher conditions associated with deeper waters. The trend toward taller towers and larger blades is likely to resume, as the newly announced 7 megawatt turbines and larger machines reach commercial deployment in the next few years (Navigant Consulting, Inc., 2014).

To take advantage of steadier winds, offshore turbines are bigger than onshore turbines. More recently constructed offshore wind facilities globally have hub heights up to approximately 100 meters (328 feet) and rotor diameters of up to approximately 130 meters (427 feet) (Navigant

Consulting, Inc., 2014). The average turbine size for projects in the United States is expected to utilize larger offshore turbines (between 5.0 and 5.3 megawatts) compared to the turbines that have previously been installed in European waters (Navigant Consulting, Inc., 2014). The USACE recently approved the construction of five 6-MW turbines off the coast of Block Island, Rhode Island (http://www.army.mil/article/133452/Deepwater_Wind_s_permit_signed_to_construct_five_wind_turbines_off_Block_Island_coast/) while BOEM is currently considering a plan for two test 6 MW turbines offshore Virginia (http://www.boem.gov/VOWTAP/). The maximum height of structures offshore the United States, at the very tips of the blades, would easily surpass 500 feet (150 m.).

Identification of Gaps and Ongoing Studies

Offshore Wind Energy

Gaps:
Since no wind turbines are installed in U.S. waters, there is a shortage of critical data on the environmental and siting effects of turbines and on the installation, operations, and maintenance of these turbines. This lack of data drives up the costs of financing offshore wind projects to the point where financing charges account for approximately half of the cost of offshore wind energy (DOE, 2011).

Ongoing Studies:
To address information gaps, research is occurring nationwide to develop and deploy offshore wind technologies that can capture wind resources off the coasts of the United States and convert wind into electricity (DOE's Offshore Wind Research and Development Program; http://energy.gov/eere/wind/offshore-wind-research-and-development). In a July 2012 Technical Report (Lopez et al., 2012), NREL estimates a gross wind power resource of 4,200 GW off the coast of the United States. One GW of wind power will supply between 225,000 to 300,000 (on average) U.S. homes with power annually (BOEM, 2014a).

In addition, multiple studies have been conducted and more are ongoing to evaluate the potential impacts of renewable energy development (BOEM 2014d: http://www.boem.gov/Renewable-Energy-Environmental-Studies). Workshops have been conducted to identify data gaps and to evaluate other European renewable energy projects and marine spatial planning methodologies (Michel and Burkhard, 2007, CSA International, Inc., 2011; http://www.boem.gov/Renewable-Energy-Completed-Studies/#Synthesis).

With stakeholder input, national and regional guidelines are being developed for site characterization studies (BOEM, 2014e; http://www.boem.gov/National-and-Regional-Guidelines-for-Renewable-Energy-Activities). These studies will be used to evaluate the impact of proposed renewable energy activities on physical, biological, and socioeconomic resources, in

addition to evaluating the seafloor and sub-seafloor conditions potentially affected by the construction, installation, and operation of meteorological towers, buoys, cables, wind turbines, and supporting structures. Information submitted will be used by Federal and State agencies for consultations, the preparation of National Environmental Policy Act (NEPA) documents, and other regulatory requirements.

For more information, see the following:

- BOEM hosted two workshops to identify data needs related to offshore renewable energy development.
    - *'Workshop to Identify Alternative Energy Environmental Information Needs'* (Michel and Burkhard, 2007),
    - *'Atlantic Wind Energy Workshop'* (CSA International, Inc., 2011) and,
    - '*Offshore Wind Energy Development Site Assessment and Characterization: Evaluation of the Current Status of European Experience'* (Rein et al., 2013).

Intersections with other ROA Topics

A primary concern in the Mid-Atlantic region is multiple use conflicts: for example, between renewable energy projects and marine transportation, fishing, and military activities. BOEM works with interested and affected Federal, State, local and Tribal governments through Intergovernmental Task Forces. Task Forces have been initiated in the following Mid-Atlantic region states: New York, New Jersey, Delaware, Maryland, and Virginia (http://www.boem.gov/BOEM-Stakeholder-Engagement/). The role of each Task Force is to collect and share relevant information, identify areas of significant promise for offshore development, and provide early identification of, and steps toward resolving, potential conflicts.

With respect to offshore wind energy, BOEM has sought input from the fishing industries and management agencies, in order to identify issues, foster dialogue and develop recommendations for best management practices (Farrell et al., 2014; http://www.boem.gov/Fishing-Offshore-Wind-Mitigation-Measures-Development-Workshops). For example, after collecting the power from the wind turbines, high voltage cables running from the ESP transmit the power to an onshore substation, where the power is integrated into the grid. The cables used for these projects are typically buried beneath the seabed, to protect the cables from ocean bottom disturbance activities (such as fishing gear, anchors, etc.) and to reduce their exposure to the marine environment. These types of cables are expensive and the amount of cable used depends on many factors, including how far offshore the project is located, the spacing between turbines, the presence of obstacles that require cables to be routed in certain directions, and other considerations.

Environmental considerations are also a key component in siting and assessing renewable energy activities. In 2007, BOEM published the Final Programmatic Environmental Impact

Statement (EIS) for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf (Programmatic EIS, MMS 2007, http://www.boem.gov/Renewable-Energy-Program/Regulatory-Information/Guide-To-EIS.aspx). This document examines the potential environmental impacts related to renewable energy development on the OCS for each phase of development (technology testing, site characterization, construction, operation, and decommissioning). Actual proposals will include project-specific analyses under the National Environmental Policy Act.

Offshore Wind Energy

For example, Chapter 7.6.2 of the Programmatic EIS discusses generic cumulative impacts associated with offshore renewable energy on environmental and socioeconomic resources (MMS, 2007). In general, most impacts would be negligible to moderate for all phases of wind energy development assuming that proper siting and mitigation measures are followed.

Vessel activity on the outer continental shelf related to a wind facility is relatively low, with only a few support vessels in operation at any one time during the highest activity period (construction). Potential impacts during the construction phase are the highest, because this phase involves the highest amount of vessel traffic, noise generation, and air emissions. There is a potential for major impacts to some threatened and endangered species of marine mammals, birds, or sea turtles from vessel or turbine strikes, disturbance of nesting areas, alteration of key habitat, or low-probability large spills of fuel or lubricating oil or dielectric fluids, because population-level impacts are possible from injury or death of individual females if population numbers are critically low.

Compliance with the regulations and coordination with appropriate wildlife protection agencies would ensure that project activities would be conducted in a manner that would greatly minimize or avoid impacting these species or their habitats. Moderate impacts to fish and fisheries could occur due to the establishment of exclusion zones within wind energy facilities. Potential visual impacts can be mitigated through several means, especially siting facilities away from sensitive areas.

Maps relevant to the Activities & Resources

a. Societal Uses and Activities: current & planned

TBD, if applicable

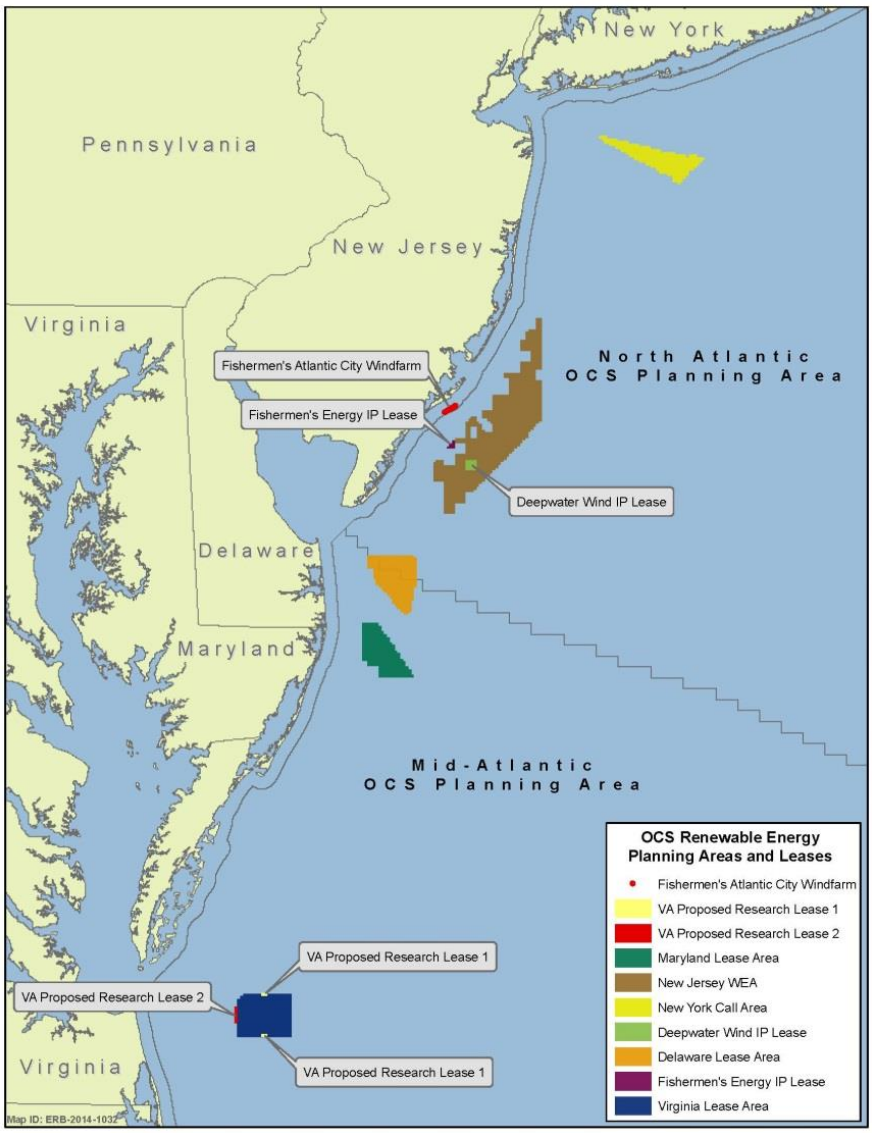
b. Resource distribution and abundance

- The Mid-Atlantic Ocean Data Portal includes a map layer showing annual estimated average wind speeds categorized by their value at a height of 90 meters above the surface. The data were created by the National Renewable Energy Laboratory (NREL) and AWS Truepower. http://portal.midatlanticocean.org/learn/energy

c. Areas of Interest

- The Mid-Atlantic Ocean Data Portal includes map layers showing BOEM wind power planning and lease areas and additional map layers including a Department of Defense compatibility layer with site specific stipulations. http://portal.midatlanticocean.org/learn/energy

By State, maps of offshore renewable energy activities:



Source: BOEM

- New York: http://www.boem.gov/uploadedImages/BOEM/Renewable_Energy_Program/State_Activities/ny_mapL.jpg
- New Jersey: http://www.boem.gov/uploadedImages/BOEM/Renewable_Energy_Program/State_Activities/nj_web_graphicL.jpg?n=825

- Delaware: http://www.boem.gov/uploadedImages/BOEM/Renewable_Energy_Program/State_Activities/de_web_graphicL.jpg?n=1257
- Maryland: http://www.boem.gov/uploadedImages/BOEM/Renewable_Energy_Program/State_Activities/md_web_graphicL.jpg?n=8570
- Virginia: http://www.boem.gov/assets/0/79/101/209/bd103579-7570-4a9c-bc1e-6b973d2ca5a0.jpg?n=6836

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Key Words

Renewable energy, wind, transmission, offshore wind, offshore wind energy, wind farms, and wind turbines, BOEM, offshore wind leases

Panama Canal Expansion

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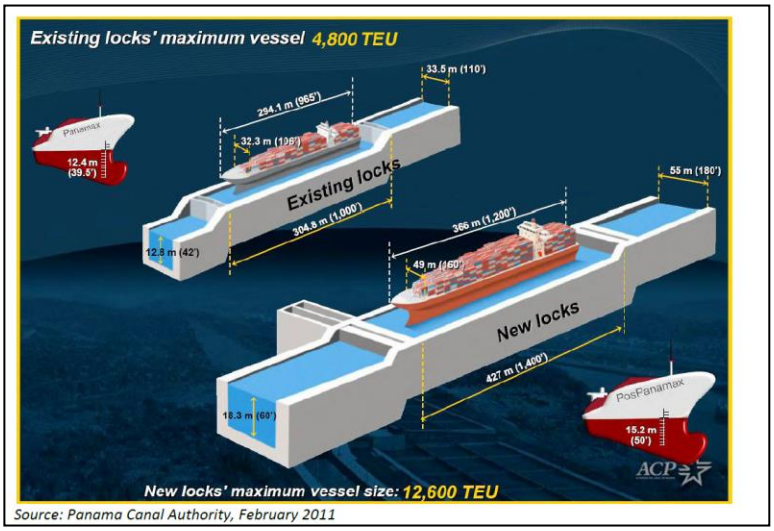
Introduction

Since opening in 1914, the Panama Canal has been a critical element of the global transportation network. It now serves over 140 maritime trade routes to over 80 countries; an estimated five percent of global maritime cargo transits the Panama Canal every year (Panama Canal Authority, 2009). Providing an all-water passage between the Atlantic and Pacific Oceans, the Canal facilitates trade between Northeast Asia, Europe, the Caribbean, and the Americas, which are some of the heaviest cargo flows in the world.

Much of the material in this topic is excerpted from a study by the Maritime Administration, which has reviewed the impacts of the expansion of the Panama Canal on U.S. ports. For a more thorough treatment of this subject, see the Maritime Administration's Panama Canal Expansion Study, Phase 1 Report: Developments in Trade and National and Global Economies, November 2013. (http://www.marad.dot.gov/documents/Panama_Canal_Phase_I_Report_-_20Nov2013.pdf)

From the perspective of the U.S. economy, the Panama Canal is an alternative to West Coast routing of Asian trade and serves as a critical link to Central and South American economies. With respect to the Mid-Atlantic region (e.g. east coast ports, along with gulf ports), the Canal is the most economical shipping option for many U.S./Asian commodity exchanges, as alternative water routes are too long and costly (Panama Canal Expansion Study, Phase I, Maritime Administration (MARAD), 2013).

The Panama Canal Expansion Project objectives are to increase the capacity of the Canal to allow the transit of large vessels that are currently restricted by the dimensions of the existing Canal locks, and to maximize the Canal's total possible cargo transport and traffic. Panamax and Post-Panamax are terms used to delineate the size limits for ships traveling through the Panama Canal (see picture below).



Source: Panama Canal Authority, February 2011

The project will essentially create a third lane of traffic through the Canal for the passage of increasingly prevalent Post-Panamax vessels. The major components of the Panama Canal Expansion Project include: deepening and widening the Canal entrances; construction of two new Post-Panamax complexes, one at the Atlantic (north) and another at the Pacific (south) ends of the Canal; excavation of a new north access channel for the Pacific Post-Panamax locks; elevation of Gatun Lake's maximum operation level; and deepening and widening of the Gatun Lake and Culebra Cut navigational channels (Panama Canal Expansion Study, Phase I, MARAD, 2013).

The project creates a new lane of traffic along the Canal through the construction of a new set of locks, thus doubling the waterway's capacity. The existing locks allow the passage of vessels that can carry up to 5,000 twenty-foot equivalent units (TEUs). Once the project is completed, Post-Panamax vessels will be able to transit through the Canal carrying up to 13,000 TEUs. As of January 2015, the project is at 83% completion (Canal De Panama: http://micanaldepanama.com/expansion/).

Economic, Social and/or Cultural Importance Considerations

The Panama Canal is an important link in global trade, accommodating an estimated five percent of the world's total cargo volume (Panama Canal Authority, 2009). The Panama Canal Expansion Project is currently one of the largest construction projects in the world and is expected by many in the logistics industry to have significant impacts on global trade and on U.S. ports and inland infrastructure. Expansion of the Canal will allow for the passage of larger container vessels, potentially reducing the cost of trans-ocean shipping. This is especially applicable to the East-West trade routes, i.e. between the Far East and U.S. East and Gulf Coast ports.

Over the past half-century, container shipping services have evolved and trade between Asia and Western economies consume the majority of Panama Canal's transport capacity. The Panama Canal Authority (PCA) estimates that the combined effect of allowing between 12 and 14 larger vessels per day through the new locks and using the existing locks for smaller vessels will double the Canal's capacity. The increased size of the vessels, particularly container ships of up to 13,000 TEUs (twenty-foot equivalent units), will play a critical role in increasing Canal throughput capacity, which is estimated to increase from 300 million Panama Canal Universal Measurement System (PCUMS) Tons to 600 million PCUMS Tons. PCUMS also determine what vessels are charged for use of the Canal. (Panama Canal Expansion Study, Phase I, MARAD, 2013).

Current Status and Trends/Indicators

Current Status:
Without increases to container terminal capacity, the number and geographic configuration of Far East all-water services that can be effectively operated to the East and Gulf Coasts could become constrained over the long term (beyond 2025).

Draft is a significant factor limiting navigable waterways, as it determines the minimum depth of water a ship or boat can safely navigate. Air draft, the distance from the surface of the water to the highest point on a vessel, also determines whether a ship can pass safely under a bridge or other obstruction, such as power lines. The largest Post-Panamax vessels require 47.6 feet of draft without tidal restrictions; therefore Mid-Atlantic ports would require channels and water depths alongside berths that are at least 50 feet deep.

Four major ports on the East Coast can handle such large ships already (Baltimore, MD and Norfolk, VA) or will be able to do so by the time the expanded Panama Canal opens (New York/New Jersey). Other East Coast ports are making preparations for dredging to channel depths of 45 feet or more, depths that can accommodate many of the Post-Panamax ships.

The Port of New York and New Jersey has 50-foot water depths in portions of its harbor. U.S. Army Corps of Engineers (USACE) is completing a series of dredging contracts that will provide 50-foot water depth to three of the port's major container terminals. The New York/New Jersey harbor deepening project includes 17 dredging contracts, 11 of which have already been completed.

The 50-foot access to the Newark Bay and Global Marine terminals was completed in December 2012 and deepening the channel to the New York Container Terminal was to be completed by December 2013. Since Global Marine Terminal is situated ahead of the entrance to the Kill Van Kull, ships calling at the terminal do not transit under the Bayonne Bridge. With no air draft limitations and 50 feet of water depth at its berths, Global Marine Terminal will be able to handle the largest container vessels transiting the expanded Panama Canal, as well as Post-Panamax vessels arriving from the east via the Suez Canal. Global Terminal is also scheduled to open an expanded facility in 2014 with a throughput capacity of 1.7 million TEUs. In New York Harbor, Port Newark Container Terminal can be enlarged and the New York Container Terminal on Staten Island could also add an adjacent berth.

Also in New York/New Jersey, plans are advancing rapidly to raise the deck of the Bayonne Bridge, above the Kill Van Kull Channel by 64 feet, for increased air draft. It is presently too low for larger Post-Panamax ships, limiting access to four of the port's five container terminals. The $1.3 billion construction project is scheduled to be complete by 2017, with navigational obstructions removed in time for the Panama Canal expansion opening.

Within the Mid-Atlantic region, there are multiple ports evaluating their terminal infrastructure and capacity for future development. At Hampton Roads, both the Norfolk International Terminal and the APM-Portsmouth Terminal can be physically expanded, and the port has already secured an additional site, Craney Island, for a massive new container terminal. In Baltimore, the primary container terminal, Seagirt, has a modest amount of land available for expansion. The other container terminal, Dundalk, could handle significantly more container traffic than is presently moving through it, but this would require both a major investment and the displacement of some non-container traffic.

The primary container terminals of the Ports of Philadelphia and Wilmington cannot easily expand their footprints, given the land uses on the bordering parcels; however, they may have ample space for growth on additional acreage elsewhere in the region, (e.g. Philadelphia's Southport Marine Terminal).

Trends:
The geographic extent of the impacts of Panama Canal expansion will depend on a number factors, including: the capacity of individual U.S. ports and their related infrastructure to handle shifting trade flows, the response of shipping companies to port and inland infrastructure capacity development, the adaptation of supply-chain management methods that take advantage of the scale economies offered by Canal expansion, and the allocation of cost savings among the various domestic and foreign players.

Larger (Post-Panamax) vessels, increased Canal traffic and doubled annual throughput capacity (as measured in PCUMS Tons) will affect the size of vessels calling at some U.S. ports. This will require changes in some port and landside infrastructure to handle larger vessels and move cargoes to inland markets. These changes are also likely to affect shipping patterns and routing of cargo for major U.S. trade lanes, e.g. resulting in a different traffic mix on the Eastern seaboard. After the opening of the Panama Canal expansion, liner companies will likely begin to deploy larger container vessels on long distance, high-volume trade routes in order to benefit from economies of scale.

Although some container traffic from Hong Kong/Yantian and other Chinese ports to the U.S. East Coast (particularly to New York) will move through the Suez Canal after 2015, most of that traffic segment will continue to move via Panama, which offers shorter transits to the South Florida, South Atlantic, and Mid-Atlantic markets. For carriers currently running Suez services from Hong Kong/Yantian to the U.S. East Coast with intermediate stops at hubs in the Strait of Malacca, the Indian Ocean, and the Mediterranean, switching to the Panama route can offer faster transits to the New York market as well.

Identification of Gaps and Ongoing Studies

Gaps:
TBD, if applicable

Ongoing Studies:
Panama Canal Expansion Study Phase I Report: Developments in Trade and National and Global Economies, Department of Transportation, Maritime Administration (MARAD), dated November 2013 identified and explained the pending developments in world ocean trade routes and national and global economies that are likely to affect global and U.S. freight corridors relevant to the Panama Canal expansion.

- The second phase (Phase II) of the study (not yet published) will provide a detailed assessment of the physical attributes of U.S. ports and inland infrastructure and the markets they serve. Phase II will also include the results of a shippers survey and an assessment of infrastructure conditions at key U.S. ports most likely to be affected by the Canal expansion.
- The third phase (Phase III) will assess potential opportunities for applying investment funding towards future development of port capacity.
- The fourth and final phase (Phase IV) of the study will revisit the issues identified in Phase I, in light of feedback received from listening sessions and other stakeholder outreach efforts, and will review the infrastructure needs and funding issues assessed during Phases II and III.

Additional research is nearing completion for the next report of this study (expected to be published May/June 2015) to refine these initial assessments. The research will provide more in-depth information about how transportation service providers are planning to respond to new opportunities to deploy vessels, as well as how shippers and cargo owners are likely to respond to a range of options they may face in the future as their costs change and potential new markets become available to them.

Intersections with other ROA Topics

The geographic extent of the impacts of Panama Canal expansion will depend largely on how U.S. ports and inland transportation providers invest in improvements to their infrastructure, the response of shipping companies to this port and inland infrastructure development, and the adaptation of supply-chain management methods that take advantage of the scale economies offered by Canal expansion.

The use of larger ships will increase the volume of containers that must be moved at each port call for those larger vessels. This will likely lead to fewer and more concentrated ship calls at larger ports for any given service, especially for vessel deployments serving the Northeast Asia

– U.S. East/Gulf Coast trade. Fewer calls by larger ships would lead to higher peak loads and tend to favor ports that have greater capacity in container handling, storage, and movement to inland destinations.

Port readiness and infrastructure will be impacted by the Panama Canal expansion. Readiness is determined by navigational channel depth and height (air draft) restrictions, terminal handling and storage capabilities, rail connectivity and capacity, and inland transportation systems (specifically, intermodal rail and "last mile" port and terminal connections).

The extent to which U.S. ports and others invest to improve vessel handling capacity and more concentrated cargo volumes, and move the cargo inland, could influence whether shipping companies decide to make greater use of the Caribbean or Panamanian container transshipment ports.

Port capacity constraints and more concentrated port calls could lead to greater use of marine highway services to move containers via water between larger and smaller U.S. ports. As with foreign transshipment, the handling and transport costs, as well as the externalities, (e.g. landside traffic congestion) of competing modes are a significant factor in determining the viability of a marine highway as a competitive option.

Panama Canal expansion could also potentially impact the following areas/activities, although currently, there are no published reports that detail the perceived potential impacts: dredge disposal, offshore wind, offshore oil and gas, and military/Department of Defense (DoD) activities.

Maps relevant to the Activities & Resources

a. Societal Uses and Activities: current & planned

- For maps, charts, and graphics, refer to the Panama Canal Expansion Study Phase I Report: Developments in Trade and National and Global Economies, DOT, MARAD, dated November: 2013: http://www.marad.dot.gov/documents/Panama_Canal_Phase_I_Report_-_20Nov2013.pdf.

b. Resource distribution and abundance

- The Mid-Atlantic Ocean Data Portal has nautical charts that provide basic bathymetry information as a basemap option (http://portal.midatlanticocean.org/visualize).

c. Areas of Interest

TBD, if applicable

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- USACE: Norfolk District: Civil Works Mission. Available at: http://www.nao.usace.army.mil/Missions/CivilWorks.aspx.

b. Other sources of information, including grey literature

TBD, if applicable

Key Words

Panama Canal Expansion Project, Panama Canal, MARAD, DOT, Marine Highway, Short Sea Shipping, Post-Panamax

Potential Data Analyses and Decision Support Tools

Potential Data Analyses and Decision Support Tools

To support the regional ocean planning process and identification of interjurisdictional coordination region-wide opportunities and specific geographic areas, the Mid-Atlantic Regional Planning Body (MidA RPB) could consider pursuing the following additional analyses and describe the results of those analyses in the Regional Ocean Action Plan (OAP). These kinds of additional analyses could help build understanding about the interactions between and among uses and resources in the Mid-Atlantic, serve as a bridge between the Regional Ocean Assessment and OAP, and provide the RPB with information it needs to determine meaningful interjurisdictional coordination commitments to improve management of ecological resources and economic activities. The Mid-Atlantic Ocean Data Portal will provide important information about the resources and uses in the Mid-Atlantic that can support some of these additional analyses.

Important note: *Highly dependent on resources available, the RPB* ***may*** *pursue one or more of the types of analyses listed below. The RPB has not yet decided which, if any, of these analyses to pursue.*

- **Assessments of compatibility** among ocean uses and between ocean uses and ecosystem health objectives (e.g., matrix).
- **Region-wide assessment of areas of ecological importance**, which could potentially include one or more of the following:
    - Summarize **areas of ecological importance currently designated** through existing authorities in the MidA region.
    - Develop **distribution and abundance data products for marine life and/or important habitats**.
    - Identify **abundance hotspots, migration corridors, or other key areas** for individual species and/or overlays of multiple species.
    - Consider use of existing or new **measures of ecosystem health** to track progress over time (e.g., by adapting measures used for existing management applications, the Ocean Health Index, etc. for use in the MidA regional planning context)
- **Region-wide analysis of the marine economy** that could include valuation and mapping of economic activity and production.
- **Region-wide information sharing about proposed ocean use and conservation projects** under review by agencies.
- **Increased understanding of other potential tools and applications** to support emerging management innovations such as an ecosystem based management approach, tradeoff analyses, cumulative impact assessments, and others.

Proposed Process, Criteria, and Examples of Potential Interjurisdictional Coordination Actions

Proposed Process, Criteria, and Examples of Potential Interjurisdictional Coordination Actions

Introduction

A key objective of the ocean planning process in the Mid-Atlantic region is to help member entities work better together to achieve the Healthy Ocean Ecosystem and Sustainable Ocean Uses goals and objectives identified in the *Mid-Atlantic Regional Ocean Planning Framework* (Framework). Interjurisdictional coordination (IJC) addresses specific processes and mechanisms that will allow member institutions of the Mid-Atlantic Regional Planning Body (MidA RPB or RPB) to better coordinate, leverage resources, and make better decisions that benefit ocean users and ecosystem health through the implementation of their existing mandates and authorities.

Simply put, IJC is a tool that helps agencies share information and coordinate efforts to accomplish common interests. This document describes:

- A proposed IJC process and timeline
- Potential criteria for the selection of IJC actions
- Region-wide IJC examples
- Geographically specific IJC examples

The content of this document is intended to be consistent with and responsive to the *Proposed Approach to the Mid-Atlantic Regional Ocean Action Plan* (OAP), which establishes a direction for the RPB's development of the OAP. As described in more detail below, the RPB plans to identify a number of opportunities around which the relevant entities will collaborate to facilitate enhanced information sharing and improved decision-making. Depending on the topic, collaboration may focus on the entire region and/or on specific geographic areas.

Figure 1 below provides an overview of the primary components of the IJC process and the mechanisms through which IJC will result in increased collaboration and improved business practices among RPB member entities.

Figure 1: MidA RPB IJC Process

RPB identifies potential IJC opportunities and IJC actions that advance:

Goal 1: Healthy Ocean Ecosystem

- Improved understanding of the regional ecosystem
- Improved understanding of changes occurring in the regional ecosystem
- Incorporated traditional knowledge
- Preservation, protection, enhancement, and restoration of the regional ecosystem

Goal 2: Sustainable Ocean Uses

- Improved management effectiveness
- Minimized conflicts
- Support for regional economic growth

(In the context of the 9 sectors identified as the Framework objectives)

↓

- Decision criteria guide RPB decisions about which IJC opportunities and actions to address in the OAP
- IJC opportunities and actions are identified region-wide and for limited number of specific geographic areas

↓

Agencies collaborate through existing authorities to support more efficient and effective:

- Acquisition of knowledge through research and science
- Program management
- Environmental and regulatory review
- Use of existing resources

Proposed IJC process and timeline

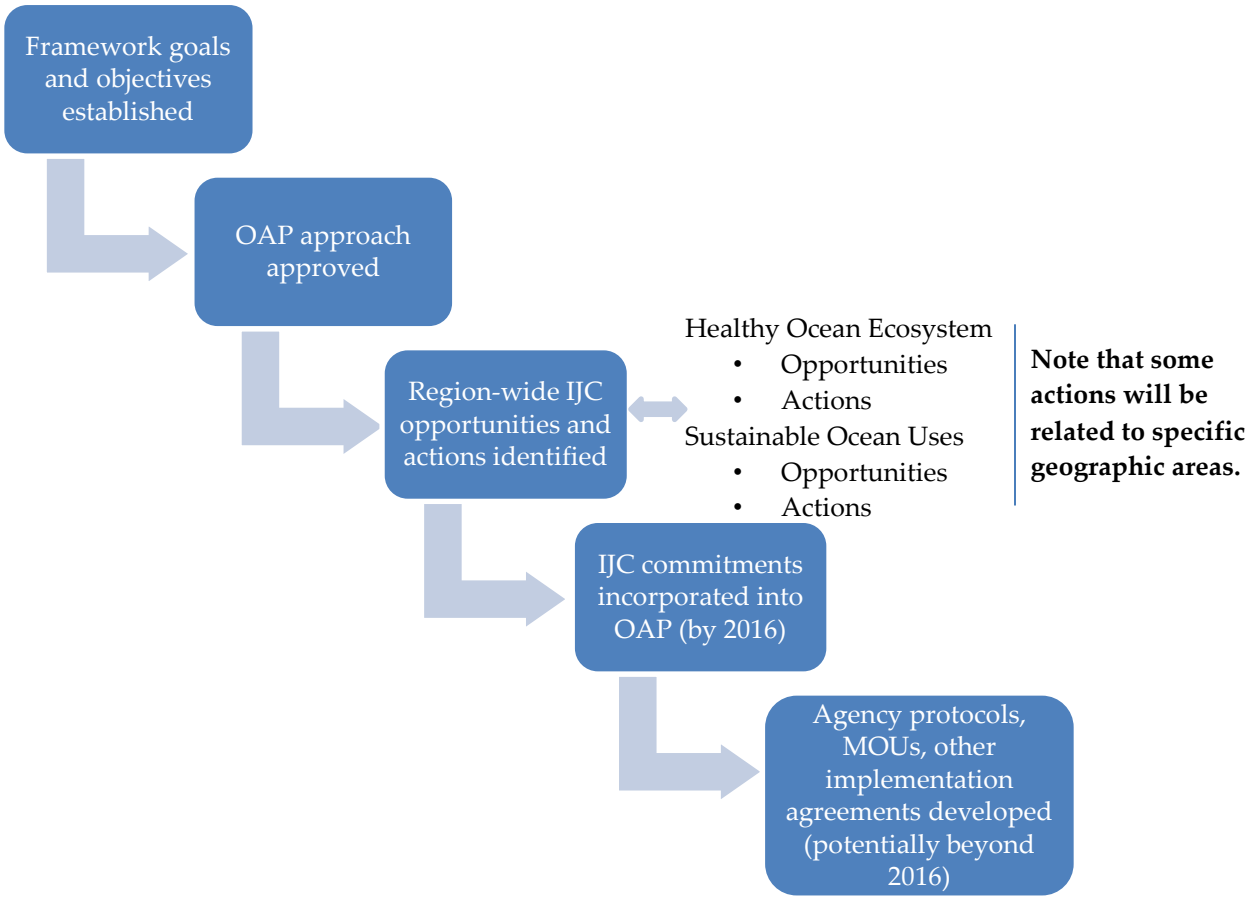
As the planning process continues to progress, the RPB, with stakeholder input, would identify topics to address on a region-wide or geographically specific basis. Those topics will (and are already beginning to) emerge from the Regional Ocean Assessment (ROA), on-going work to build-out the Mid-Atlantic Ocean Data Portal (Data Portal) and develop new data products, stakeholder interests, and public discussion at RPB meetings. The RPB, with stakeholder input, would then identify specific opportunities and associated actions to achieve the goals and objectives in the Framework. Potential outcomes of IJC related to those goals and objectives include:

- Healthy Ocean Ecosystem Goal: improving understanding of the regional ecosystem and changes occurring within it; incorporating traditional knowledge; and preserving, protecting, enhancing, and restoring the ecosystem
- Sustainable Ocean Uses Goal: improving management effectiveness, minimizing conflicts, and supporting economic growth

As specific opportunities are identified, the RPB, with stakeholder input, would also begin to develop IJC actions that describe specifically how RPB entities would share information and coordinate efforts to address the opportunities. Potential IJC actions would be identified, refined, and presented for public comment and RPB consideration in 2015-2016. Those IJC actions eventually committed to by the RPB would then be articulated in the OAP. Agreements among member entities to implement specific IJC actions could be supported by Memorandums of Agreement or similar materials, which could be developed concurrently with or after the OAP is finalized. All changes in business practices, protocols, agreements, etc., that result from the process would be clearly communicated to interested stakeholder groups and the public.

Figure 2 depicts the sequence of process steps to advance the identification of IJC opportunities and actions and associated RPB member entity commitments throughout 2015 and 2016. Timing and specific administration of IJC processes will be discussed further in other RPB materials.

Figure 2: Proposed process steps to develop IJC actions



Potential criteria for the selection of IJC actions

The RPB has expressed an interest in establishing criteria for identifying the region-wide IJC opportunities, specific geographic areas, and specific IJC actions (as described in the *Proposed Approach to the Mid-Atlantic Regional Ocean Action Plan*). Potential criteria are offered here for RPB discussion.

Potential criteria for choosing *region-wide IJC opportunities*:

- Foundational (e.g., related to core authorities or practices regarding management, regulation, education, etc.)
- Interdisciplinary and/or interjurisdictional (e.g., meaningful to multiple RPB member missions in the context of the OAP)
- Regional in nature and/or policy priorities for a number of RPB member entities and/or stakeholders
- Consistent with and/or advance the Framework principles, goals, and objectives

Potential criteria to inform the selection of *specific geographic areas*:

- Potential to demonstrate progress on the region-wide IJC opportunities identified above; and/or
- Significant ecological value; and/or
- Socio-economic value; and/or
- High current or potential user conflict

Potential criteria for choosing specific *IJC actions*:

- Are consistent with and serve to achieve the Framework principles, goals, and objectives
- Are achievable within the capacity limitations of the RPB and/or any collaborating entity to accomplish within the planning horizon
- Lead to an improvement in process and/or outcome over current practice
- Advance member entity missions and/or stakeholder interests under existing authorities
- Leverage existing programs, processes, and/or resources

Region-wide IJC example opportunities

This section provides examples of IJC opportunities and actions. ***The examples are intended to illustrate representative components of potential IJC opportunities and actions, not a comprehensive, fully organized outline. They are presented only to illustrate the form and***

content that IJC opportunities and actions could take, and are offered solely to support RPB and public discussion at the January 21-22, 2015 RPB in-person meeting.

As described by the *Proposed Approach to the Mid-Atlantic Regional Ocean Action Plan*, a set of interjurisdictional coordination commitments articulated in the OAP would aim to improve governmental business practices and inform management actions under existing authorities. Region-wide IJC opportunities and actions would be identified in coordination with neighboring regions in recognition of the fact that human activities, marine life, and other key components of the marine system cross regional boundaries.

Region-wide IJC opportunities and actions could be organized by four basic categories: (1) identifying research needs, (2) informing and improving management decisions, (3) improving information for environmental and regulatory review, and (4) leveraging resources. Examples are provided under each of these categories:

Category 1: Identifying research needs

- *Example opportunity*: Focus collaborative efforts of RPB agencies to address key/priority region-wide data/research needs identified by the Regional Ocean Assessment (ROA).
    - *Example IJC action*: Integrate assessments of climate change impacts to commercially and recreationally important species and incorporate in OAP/ROA updates or revisions.

  Relationship to Framework: This could help address the Healthy Ocean Ecosystem and Sustainable Uses goals and all objectives in the Framework, and is consistent with Framework principles related to Intrinsic Value, Economic Value, Best Available Science, and Coordination and Government Efficiency.

Category 2: Informing and improving management decisions

- *Example opportunity: Develop approach to support agencies' identification, analysis, and use of best available data/information.*
    - *Example IJC action*: Agencies with primary responsibility for ecosystem components and human activities (e.g., NOAA for marine mammals; USCG for navigation) could identify data products, based on the Data Portal, that best represent the subject matter for management or regulatory purposes. These materials would not be used exclusively in decision-making, but would provide a consistent, transparent, and efficient starting point on a case-by-case basis.

  Relationship to Framework: This could help address the Healthy Ocean Ecosystem goal through the Accounting for ocean ecosystem changes and increased risks objective (#2) and the Sustainable Ocean Uses goal through data products that benefit all related objectives. This is consistent with Framework principles related to Best Available Science,

Compatibility of Multiple Interests, Consistency with Existing Laws, and Coordination and Government Efficiency.

- *Example opportunity:* Support state and federal management objectives under the Coastal Zone Management Act.
    - *Example IJC action*: Develop regionally or sub-regionally consistent categories of federal agency actions, consistent with state interests, which can be addressed by general consistency or comparable provisions under the CZMA.
    - *Example IJC action*: Evaluate the opportunity to support regionally or sub-regionally consistent geographic location descriptions (GLDs) for specific activities. This could be done as a stand-alone exercise or be associated with discrete geographic areas.

  Relationship to Framework: This is consistent with Framework principles related to Best Available Science, Compatibility of Multiple Interests, and Coordination and Government Efficiency, and could help address the Sustainable Ocean Uses goal through almost all of the objectives.

- *Example opportunity*: Enhance application of principles and practices of ecosystem-based management (EBM) under existing authorities.
    - *Example IJC action*: Provide region-specific context and information to inform existing agency actions and milestones related to EBM in the National Ocean Policy Implementation Plan (NOP IP).
    - *Example IJC action*: Identify opportunities to pilot implementation of new and emerging EBM practices.

  Relationship to Framework: As a foundational concept, EBM can be related to both goals and all objectives in the Framework. More narrowly, it could help address the Healthy Ocean Ecosystem goal through the Discovering, understanding, protecting, and restoring the ocean ecosystem objective (#1) and the Sustainable Ocean Uses goal through consideration of any of the specific sectors. The IJC actions above are consistent with Framework principles related to Intrinsic Value, Recognize Interconnections, Best Available Science, and Compatibility of Multiple Interests.

Category 3: Improving information for environmental and regulatory review

- *Example opportunity:* National Environmental Policy Act (NEPA) review and U.S. Army Corps of Engineers (USACE) permitting
    - *Example IJC action*: Develop protocols that describe how agencies will use data and coordination measures to implement the OAP through NEPA and regulatory processes.
    - *Example IJC action*: Develop communications for the public (as referenced above) that describe how agencies will engage with the OAP in the implementation of their existing authorities.

- *Example IJC action*: Develop NEPA and regulatory pre-application protocols for lead federal agencies.
- *Example IJC action*: Coordinate state and federal participation in NEPA reviews, including use of the Data Portal.

Relationship to Framework: This could help address the Healthy Ocean Ecosystem goal through the Discovering, understanding, protecting, and restoring the ocean ecosystem objective and the Sustainable Ocean Uses goal for all objectives. This is consistent with the Framework principles related to Best Available Science, Compatibility of Multiple Interests, and Coordination and Government Efficiency.

Category 4: Leveraging resources

- *Example opportunity*: Identify funding/resource needs associated with existing or new approaches to management, environmental or regulatory review, or research actions developed by the RPB and develop collaborative approaches to support funding/resource needs.
  - *Example IJC Action*: Identify opportunities to coordinate funding to continue to support on-going research in deep-water canyons.

Relationship to Framework: This could help address the Healthy Ocean Ecosystem and Sustainable Ocean Uses goal and all objectives. This is consistent with Framework principles related to Intrinsic Value, Economic Value, Best Available Science, Recognize Interconnections, and Coordination and Government Efficiency.

Geographically specific IJC examples

This section provides examples of IJC actions that advance goals and objectives associated with specific geographic areas. ***As with those above, the examples are intended to illustrate representative components of potential actions, not a comprehensive, fully organized outline***.

As described in the *Proposed Approach to the Mid-Atlantic Regional Ocean Action Plan*, specific geographic areas may be selected because they are characterized by potential to demonstrate progress on the region-wide IJC opportunities, significant ecological value, and/or areas of high current or potential user conflict, and/or socio-economic value. Specific potential IJC actions would then be identified for those areas. These specific actions would be identified based on the needs and characteristics of each area and input from stakeholders.

For each of the specific geographic areas identified through the planning process, the RPB could develop information that:

- characterizes components and dynamics of the area

- identifies key issues and interactions within the area that can be enhanced to achieve Framework objectives
- identifies management, environmental and regulatory review, research, stakeholder engagement needs/opportunities, funding actions, and other actions

Specific geographic areas example 1: Mouth of Chesapeake Bay, Delaware Bay, and/or similar areas

- *Example of IJC actions that would be specific to the mouth of the Chesapeake:*
    - The Bureau of Ocean Energy Management (BOEM), U.S. Navy, U.S. Coast Guard, and National Oceanographic and Atmospheric Administration (NOAA) collaborate to determine migration rate of the encroaching shoals at Northeastern and Southeastern navigation channels.
    - Integrate Data Portal and BOEM/state sand management task force data and information to support state/federal management and regulatory interests.
    - Develop CZMA general concurrence provisions for categories of actions within the sub-area. For example, some areas that could initially be addressed include: disaster response and recovery activities by the Federal Emergency Management Agency (FEMA); certain Coast Guard navigational activities; and military activities.
    - Evaluate the opportunity to develop a geographic location description under the CZMA for specific activities in the area.
    - Develop use and resource-specific compatibility assessments using the Data Portal to enhance multiple use management by responsible parties under existing authorities (i.e., *not* as the basis for RPB determinations about what goes where, rather to provide information and awareness to support agency/sectoral problem-solving).
    - Identify and address data and/or procedural challenges associated with management interactions among specific uses/situations identified by the RPB, existing management entities, and/or stakeholders.

  Relationship to the proposed criteria for identifying geographic areas: Demonstrates progress on region-wide topics. Addresses area of high current or potential user conflict and/or socio-economic value. Is consistent with Framework principles related to Economic Value, Best Available Science, Coordination and Government Efficiency, and could help address the Sustainable Uses goal through National Security (#1) and Maritime Commerce (#5) objectives.

Specific geographic areas example 2: Deepwater canyons

- *Example of IJC actions that would be specific to the deepwater canyons:*

- Enhance existing interagency research and management efforts by addressing data, analysis, and research needs.
- Develop approach to coordinate with Mid Atlantic Fishery Management Council and other entities with management responsibilities to address data needs, stakeholder engagement, management considerations, or other materials that support management and conservation responsibilities.

Relationship to the proposed criteria for identifying geographic areas: Demonstrates progress on region-wide topics. Addresses areas of significant ecological value and high current or potential user conflict. This is consistent with Framework principles related to Intrinsic Value, Best Available Science, and Recognize Interconnections, and could help address the Healthy Ocean Ecosystem goal through the Discovering, understanding, protecting, and restoring the ocean ecosystem objective (#1).

Appendix of selected environmental and regulatory authorities[1,2] and potential use of data

All development activities in the Mid-Atlantic region are subject to NEPA compliance and similar regulatory review and data requirements under USACE permitting. At a minimum, data and information from the MARCO Mid-Atlantic Ocean Data Portal will provide a baseline context for each of the authorities. In addition, the RPB may choose to develop specific data products and management tools based on the Data Portal (which could include such IJC actions as developing best available data sets, baseline reference material, and materials that support regulatory consultations) to enhance existing review and permitting. For example, the Data Portal will help identify spatial concentrations of resources and human activities that will help the NEPA review and regulatory processes avoid, minimize, and mitigate potential impacts.

In summary form, the core environmental and regulatory review authorities include:[3]

- The **National Environmental Policy Act** requires "federal agencies… to determine if their proposed actions have significant environmental effects and to consider the environmental and related social and economic effects of their proposed actions."[4] NEPA applies in state and federal waters, as well as to terrestrial activities, to federal actions such as leasing of public lands (e.g. through OCSLA) and permitting development proposals (including USACE permitting), adoption of fishery management plans, and other federal activities. The NEPA process generally is the first process that federal agencies implement in permitting and leasing actions (in some cases, NEPA and permit processes run concurrently). The NEPA process uses data and information from agency and public participation to identify the potential impacts of a proposed action on the environment, evaluates potential alternatives that could have less impact, and identifies means by which unavoidable impacts can be minimized and mitigated. The lead federal agency is responsible for implementing the NEPA process and will engage the public, other federal agencies (sometimes formally designated as cooperating agencies to establish a formal coordinating relationship among agencies), and outside parties. If the extent and magnitude of impacts to the environment are unknown, the agency prepares an Environmental Assessment (EA). If the lead agency initially or through the EA process determines that there are likely to be significant impacts, the agency must prepare an Environmental Impact Statement (EIS) to evaluate project alternatives and identify measures to avoid, minimize, and mitigate impacts.

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[1] Modified from *Northeast Regional Ocean Plan: Options for Effective Decision Making,* Report prepared for the Northeast Regional Planning Body, SeaPlan, et. al., September 2014.

[2] Descriptions of statutes and regulations are intended to generally characterize the subject matter. For detailed and authoritative materials, please follow the links.

[3] Numerous other authorities may apply depending on the type of activity.

[4] *A Citizen's Guide to the NEPA,* Council on Environmental Quality, December 2007.

- **Use of data:** NEPA provides administrative flexibility in how lead federal agencies implement review, and each agency has established procedures (including guidance and regulation) to guide the process. Regardless of the administrative process, regional ocean plan data can provide a consistent informational framework for the review of proposed development projects. The MARCO Data Portal could inform key elements of NEPA review, including scoping (which identifies key stakeholders, issues, information gaps and needs, and other consultations that need to occur), identification of project alternatives, evaluation of environmental effects, description of the affected environment, and development of mitigation measures.

- The **Rivers and Harbors Act, section 10,** administered by the USACE, provides for the review of work and structures below the mean high water line of waters of the United States out to the three mile limit, and of fixed structures beyond the three mile limit.
    - **Use of data:** As a component of permitting under both the Rivers and Harbors Act and the Clean Water Act, the USACE conducts a "public interest review" to evaluate "the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest."[5] The review addresses a wide range of natural, cultural, social, economic, and other issues, including, generally, "the needs and welfare of the people."[6] The MARCO Data Portal could provide strong support for the USACE review. Plan data should provide relevant information for existing and/or potential human activities, including commercial shipping, recreational fishing, commercial fishing, existing infrastructure including cables and pipelines, and others.

- The **Clean Water Act, section 404,** administered primarily by the USACE, in consultation with the EPA (which has a formal jurisdictional role), provides for the review and authorization of impacts of dredged or fill material on the marine ecosystem below the high tide line of waters of the United States out to the three mile limit, in consultation with federal resource agencies that have subject-matter jurisdiction to evaluate potential impacts to jurisdictional resources.
    - **Use of data:** The Clean Water Act section 404(b)(1) Guidelines identify the information and analysis used to determine whether a proposed activity will have a significant adverse impact to the aquatic environment. The review addresses potential impacts to, among other things, the seabed, water quality, currents and circulation, endangered and threatened species, fish and other aquatic organisms, and other wildlife. In addition, the review addresses potential

[5] 33 C.F.R. §320.4.
[6] Ibid.

impacts to commercial and recreational fishing, water related recreation, aesthetics, and sanctuaries, refuges, and similar preserves.

The Guidelines identify a category of resources called Special Aquatic Sites, which are subject to a regulatory presumption that a proposed activity will have less significant impact to the aquatic environment if it is not located in the Special Aquatic Site. Such areas relevant to the ocean plan include wetlands (saltmarsh), vegetated shallows (sea grasses), mudflats, and coral reefs. The MARCO Data Portal and other sources of data and information can support spatial definition of Special Aquatic Sites and provide baseline information to inform the review process.

Federal consultations required under the following federal laws inform NEPA review and Clean Water Act and Rivers and Harbors Act permitting include:[7]

- The **Endangered Species Act (ESA),** administered by the Department of the Interior's U.S. Fish and Wildlife Service (USFWS) for terrestrial species and the National Oceanic and Atmospheric Administration's (NOAA's) National Marine Fisheries Service (NMFS);
- The **Magnuson-Stevens Act Essential Fish Habitat (EFH)** provisions, administered by NOAA/NMFS provide for the review of potential impacts to essential fish habitat for species managed, in the Mid-Atlantic, by the Mid-Atlantic Fishery Management Council;
- The **Marine Mammal Protection Act (MMPA),** administered by NOAA/NMFS, provides for the review of potential impacts to marine mammals and turtles;
- The **Migratory Bird Treaty Act (MBTA)**, administered by the USFWS, requires federal agencies to consult the Service about potential impacts to migratory bird species; and
- The **National Historic Preservation Act, section 106 (NHPA),** administered by the Advisory Council on Historic Preservation, state historic preservation officers, and tribal preservation officers, provides for the review of potential impacts to cultural and historic resources.
    - **Use of data:** The MARCO Data Portal could support better informed and more efficient ESA, EFH, MMPA, and MBTA consultations. The data may also provide opportunities to enhance these consultations by developing authoritative regional characterizations of resources and uses, reference data, and programmatic consultations. Baseline historic and cultural data developed to support consultation under the NHPA may be used to identify specific areas to

[7] Other authorities may apply depending on the type of activity. These represent the core resource consultations that typically apply.

avoid or flag as potentially sensitive. Some data would not be represented due to sensitivity and/or confidentiality.

- The **Coastal Zone Management Act,** administered by NOAA's Office of Ocean and Coastal Resource Management/Coastal Services Center and state coastal management programs, authorizes states to review federal actions that have reasonably foreseeable effects to resources and uses of the state's coastal zone under the state's enforceable policies. One way that states can formally exert jurisdiction is to define specific areas outside state waters in which it has been determined that a specific kind of activity will have an effect on uses or resources in state waters (requires approval by NOAA/OCRM). Data can also be used to support "general consistency" and similar provisions of the CZMA to achieve review efficiencies by conducting one initial review of a category or class of activity that can then can be used to address all future activities within the category. This provides flexibility and efficiency for both the federal agency and the state conducting the review, both of which can ensure that their interests are addressed through the minimum necessary level of effort, and for private project applicants, who may not be required to submit an application.
    - **Use of data:** All data being developed through the regional ocean planning process will support both state and federal interests under the CZMA. Mid-Atlantic ocean planning will be based on federal, state and tribal data and will enhance the use of existing state data by providing greater regional context for data and resource issues in state waters. It will also support more informed application of the "effects test" used to determine whether federal actions will affect uses or resources of a state coastal zone.