American Littoral Society • Clean Ocean Action • Delaware Chapter of the Sierra Club • Delaware Nature Society • Maryland Academy of Sciences at The Maryland Science Center • Miami2Maine • The National Aquarium • Natural Resources Defense Council • New Jersey Sierra Club • Ocean Conservancy • Riverhead Foundation for Marine Research and Preservation • Surfrider Foundation • TerraScapes • Virginia Aquarium & Marine Science Center • Virginia Conservation Network • Wild Oceans • Wildlife Conservation Society

May 30, 2013

Mid-Atlantic Regional Planning Body Co-Leads:

Mr. Gerrod Smith
Chief Financial Officer
Shinnecock Indian Nation
P.O. Box 5006
Southampton, New York 11969

Ms. Maureen Bornholdt
Renewable Energy Program Manager
Bureau of Ocean Energy Management
1849 C Street, NW
Washington, D.C. 20240

Ms. Sarah Cooksey
Administrator, Delaware Coastal Programs
Delaware Department of Natural Resources
and Environmental Control
5 East Reed Street, Suite 201
Dover, Delaware 19901

Submitted electronically

Re: Public and Stakeholder Engagement in the Mid-Atlantic Regional Planning Body Process

Dear Ms. Bornholdt, Ms. Cooksey, and Mr. Smith:

On behalf of the organizations listed above and our millions of members and activists, we wish to congratulate you and the other representatives serving on the newly designated Mid-Atlantic Regional Planning Body (Mid-Atlantic RPB or RPB). We look forward to working closely with you to develop an open and transparent decision-making process.

As you well know, one of the RPB's first challenges is crafting a public and stakeholder engagement process to advise its development of the regional ocean plan. Robust public participation throughout the planning process will be critical to ensuring that the eventual ocean plan reflects the region's values and is viable over the long term. We respectfully offer our assistance to you in your efforts to connect with the broader ocean constituency and share the below recommendations for developing a transparent regional ocean planning process that encourages strong public and stakeholder involvement.

I. Publicize Mid-Atlantic RPB materials and offer frequent public engagement opportunities.

Our organizations urge you to move ahead expeditiously to outline the RPB's process and opportunities for public engagement. It is imperative that the Mid-Atlantic RPB offers regular updates on the body's work to those who attended last month's Mid-Atlantic Regional Ocean Planning Workshop and to the broader public community to keep them informed and involved.

We suggest the following immediate actions to make the Mid-Atlantic RPB's work transparent:

- Establish a website for the Mid-Atlantic RPB that includes at least one point of contact for questions, and commit to posting all documents, including meeting agendas and notes in a timely fashion.

- Develop a general listserv/ mailing list to communicate with interested parties and provide monthly updates on the Mid-Atlantic RPB's process. People should be able to sign up for the listserv on the RPB website.

- Publish a schedule of quarterly in-person Mid-Atlantic RPB meetings, and ensure that these meetings are open to the public and webcast. Ample notice of these and any additional RPB meetings should be made by website posting, through the listserv, and other methods of general outreach. All relevant meeting documents should be available to the public in advance.

We suggest planning for a first formal meeting of the Mid-Atlantic RPB in September, 2013 to review and discuss a draft charter detailing roles and responsibilities, overall timeline, planning scope, initial products, and draft goals for the planning process. These are some of the discussion items addressed by the Northeast Regional Planning Body's recent meeting, and their work could be used as a guide.

We also strongly recommend that the Mid-Atlantic RPB not wait until September to provide a basic update to workshop participants and other interested parties and suggest that the Co-Leads host a webinar early this summer detailing next steps and taking questions from members of the public. Announcement of the webinar could kick off the listserv and key takeaways from the webinar should be posted online and circulated via the listserv.

In addition to updating the public on the Mid-Atlantic RPB's actions, there must be regular opportunities for the public to comment meaningfully on the plan's development. The Northeast Regional Planning Body recently announced a series of upcoming public meetings to discuss and shape draft regional ocean planning goals and review existing map and data portal work; we encourage the Mid-Atlantic RPB to announce a similar outreach effort following its first meeting. We suggest holding meetings in the early evening at a range of geographic locations to ensure greatest turnout and recommend meetings in:

- Manhattan
- Brooklyn
- Riverhead
- Freeport
- Cape May
- Long Branch
- Atlantic City

- Barnegat Light/ Toms River
- Lewes
- Dover
- Philadelphia
- Baltimore
- Ocean City
- Horn Point
- Norfolk
- Melfa
- Arlington.[1]

For members of the public unable to attend one of these meetings, the opportunity to provide comment via the Mid-Atlantic RPB's website should be provided. Similar public comment opportunities on RPB deliverables should be provided throughout the regional plan's development.

We should also note that our groups are united in calling for the Mid-Atlantic RPB to develop a final plan that protects, maintains, and restores the health of the region's ocean and coastal ecosystems. The overarching importance of ecosystem protection should be highlighted throughout the public and stakeholder process and reflected in the Mid-Atlantic's goals, workplan, and charter.

II. Establish a stakeholder advisory panel and a science advisory panel.

We urge you to appoint a stakeholder advisory panel to provide regular and meaningful input and advice to the Mid-Atlantic RPB. The panel would serve as a formal mechanism for the Mid-Atlantic RPB to solicit feedback on clearly articulated outcomes and asks and to respond to stakeholders' input at all stages of the planning process. Selected stakeholders should represent geographic diversity and consist of representatives from at least the following sectors: environmental NGOs, recreational user groups (*e.g.*, surfing, swimming, boating, paddling, bird watching), recreational fishing, commercial fishing, aquaculture, offshore wind energy, shipping and ports, coastal tourism, and marine trades (*e.g.*, marinas, ship building). It may be appropriate to have multiple representatives per sector and to include scientists in this panel as well as in the science advisory panel noted below. Membership in the panel should strive to allow each group represented to have adequate opportunity to share their sector's views. All representatives should aim to reach out to the broader sector they represent to incorporate the community's views and knowledge in their feedback. The public should be invited to attend all panel meetings and to comment at them. We also suggest that if an additional entity wants to be added to the stakeholder advisory panel, they be allowed to write a letter requesting consideration to the RPB.

Additionally, we recommend that the Mid-Atlantic RPB establish a science advisory panel comprised of academics and subject matter experts working throughout the region to advise it on technical matters and to provide regular and meaningful advice at all stages of the planning process. In particular, the panel

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[1] Arlington has been included in this list of locations so that the many members of the DC Metro community who enjoy spending time at the Mid-Atlantic shoreline would be able to easily attend a public meeting; however, it should not be selected at the expense of another location where the intended public audience sits squarely within one of the Mid-Atlantic RPB's included states. Our groups believe that the RPB would ideally host meetings in all of these locations in order to ensure a robust public turnout from the segments of the public most likely to be impacted by the RPB's work.

should work with the National Oceanic and Atmospheric Administration and other federal agencies develop an ecological assessment of the health of the region's marine ecosystems using the best available science; the ocean plan should be based on this assessment. The public should also be invited to attend all science advisory panel meetings and to offer comment at them.

Our organizations welcome the opportunity to discuss any of these ideas in greater depth with you.

Sincerely,

Ali Chase
Policy Analyst
Natural Resources Defense Council

Amy Roe, Ph.D.
Conservation Chair
Delaware Chapter of the Sierra Club

Pam Lyons Gromen
Executive Director
Wild Oceans

Matt Gove
Mid-Atlantic Policy Manager
Surfrider Foundation

Anna Zivian
Senior Manager, Coastal and Marine Spatial Planning Program
Ocean Conservancy

Margo Pellegrino
Founder
Miami2Maine

Terra Pascarosa Duff
Environmental Director
TerraScapes

W. Mark Swingle
Director of Research & Conservation
Virginia Aquarium & Marine Science Center

Jacob Powell
Policy and Campaigns Manager
Virginia Conservation Network

Van R. Reiner
President and CEO
Maryland Academy of Sciences at The Maryland Science Center

Cindy Zipf Executive
Director Clean Ocean
Action

Laura Bankey
Director of Conservation
The National Aquarium

Brian Winslow Executive
Director Delaware Nature
Society

Robert A. DiGiovanni, Jr.
Executive Director / Senior Biologist
Riverhead Foundation for Marine Research and Preservation

Jeff Tittel
Director
New Jersey Sierra Club

John F. Calvelli
Executive Vice President, Public Affairs
Wildlife Conservation Society

Tim Dillingham Executive
Director American Littoral
Society

June 13, 2013

Dear Ms. Chase:

Thank you for the May 30, 2013, letter to the Mid-Atlantic Regional Planning Body Co-Leads on behalf of organizations interested in working with us as we move forward. We share your commitment to ongoing collaboration and advancement of regional ocean planning and appreciate your thoughtful and timely suggestions for stakeholder engagement. The Mid-Atlantic Regional Planning Body (MidA RPB) is considering the ideas put forth in your letter as we discuss our next steps.

Since the April Mid-Atlantic Regional Ocean Planning Workshop in Arlington, Virginia, the MidA RPB has created sub-workgroups to begin to consider fundamental operational and administrative MidA RPB procedures (e.g., drafting a charter) and to identify opportunities to engage stakeholders, in preparation for a productive first public meeting. The MidA RPB anticipates receiving initial work products from the sub-workgroups in the coming weeks, and we will subsequently reach out to stakeholders about upcoming opportunities to review and offer comments on those draft products.

We are working to establish a web presence for sharing information with the public about the MidA RPB. In the meantime, we have created an interim email address hosted by BOEM: BOEMMidAtlanticRPB@boem.gov to which comments and questions can be sent.

An important next step will be convening a webinar this summer to update the public about progress and plans going forward and provide an opportunity for public input. We are also planning for an inaugural, in-person public meeting in September. We will notify stakeholders, including those who attended the recent ocean planning workshop, about these opportunities, and provide additional detail, in the coming weeks.

It is the intention of the MidA RPB to sustain a transparent regional planning process and we welcome your recommendations and your offer of assistance to the MidA RPB in our efforts to connect with the broader ocean constituency. Please continue to contact us with any additional ideas or questions you may have. We look forward to working with your organizations to foster successful ocean planning in the Mid-Atlantic Region.

Sincerely,

Maureen A. Bornholdt
Federal Co-Lead for the Mid-Atlantic Regional Planning Body
Program Manager
Office of Renewable Energy Programs
Bureau of Ocean Energy Management
U.S. Department of the Interior

Gwynne Schultz
State Co-Lead for the Mid-Atlantic Regional Planning Body
Senior Coastal and Ocean Policy Advisor
Maryland Department of Natural Resources

Gerrod Smith
Tribal Co-Lead for the Mid-Atlantic Regional Planning Body
Chief Financial Officer
Shinnecock Indian Nation

DELAWARE CHAPTER OF THE SIERRA CLUB
MARYLAND ACADEMY OF SCIENCES AT THE MARYLAND SCIENCE CENTER
THE NATIONAL AQUARIUM NATURAL
RESOURCES DEFENSE COUNCIL NEW
JERSEY SIERRA CLUB
OCEAN CONSERVANCY
SURFRIDER FOUNDATION
VIRGINIA AQUARIUM & MARINE SCIENCE CENTER FOUNDATION

June 14, 2013

Secretary of the Interior Sally Jewell
United States Department of the Interior
1849 C Street, N.W.
Washington, D.C. 20240

Submitted electronically

Dear Secretary Jewell,

On behalf of the organizations listed above and our millions of members and activists, we wish to congratulate you on your recent confirmation as the 51st Secretary of the Interior and ask for your assistance in jumpstarting an exciting opportunity that the Department of Interior (DOI) has to advance the protection and sustainable use of the Mid-Atlantic's ocean resources.

Our groups strongly support President Obama's Executive Order 13547 that establishes the first-ever National Ocean Policy and calls for the establishment of Regional Planning Bodies (RPBs) to help implement that policy at the regional level. As part of a RPB, federal agencies such as DOI work with states and federally recognized tribes with input from local governments, industries, fishermen, conservationists and others to identify which ocean areas are appropriate for different industrial uses and which ocean areas are in need of protection. Regional ocean planning can help identify and protect important ecological processes, keystone species, and valuable habitats, while providing improved certainty for ocean businesses and users. It can lead to increased protection of ocean health as our oceans experience ever more use and development. It can also ensure that all who use and love the ocean have greater say in its future.

DOI has a unique opportunity to exercise leadership in the implementation of this landmark Administration initiative by helping to lead the recently established RPB in the Mid-Atlantic region, the area extending from New York through Virginia and from shore out to 200 nautical miles. Each of the nation's nine RPBs has an assigned Federal Lead from among the National Ocean Council agencies and, in the Mid-Atlantic, the Federal RPB Co-Lead is the Bureau of Ocean Energy Management's (BOEM) Renewable Energy Program Manager, Maureen Bornholdt. Ms. Bornholdt

possesses a deep understanding of the burgeoning offshore wind industry, which, as a primary driver for this region's ocean planning, makes her uniquely qualified to serve in this role. In addition to offshore wind development, there are other activities and areas in the Mid-Atlantic under DOI's direct supervision, including offshore sand and gravel mining, endangered species protection and management of several national seashores, parks and wildlife refuges, making DOI a logical leader of the regional planning work.

Regional planning bodies like the Mid-Atlantic RPB represent an important step forward for ocean governance, but only if adequate staff time and funding are dedicated to engaging the public and stakeholders and to moving the process ahead expeditiously. *We urge DOI under your leadership to identify and provide additional staff time and resources to ensure that the Mid-Atlantic RPB moves forward in an effective and efficient manner.* In terms of staff time, we believe that at least one additional full-time person is needed with the skills and enthusiasm to support the RPB's day-to-day functioning and execute the public outreach and engagement.

Thank you for your consideration and support of this important initiative. Our organizations are excited to work with DOI and stand ready to assist you and the Mid-Atlantic RPB in this critical work. Our oceans are natural treasures that must be healthy for all Americans to use and enjoy now and into the future. We request an early opportunity to meet with you or your staff to discuss this effort in more detail.

Sincerely,

Sarah Chasis
Ocean Initiative Director
Natural Resources Defense Council

Pete Stauffer
Ocean Program Manager
Surfrider Foundation

Van R. Reiner
President and CEO
Maryland Academy of Sciences at The Maryland Science Center

W. Mark Swingle
Director of Research & Conservation
Virginia Aquarium & Marine Science Center Foundation

Laura Bankey
Director of Conservation
The National Aquarium

Emily Woglom
Director, Government Relations
Ocean Conservancy

Jeff Tittel
Director
New Jersey Sierra Club

Amy Roe,
Ph.D.
Conservati
on Chair
Delaware Chapter of the Sierra Club

cc: Eileen Sobeck, DOI Deputy Assistant Secretary for Fish and Wildlife and Parks and Co- Chair of the National Ocean Council's Ocean Resource Management Interagency Policy Committee

Maureen Bornholdt, BOEM Renewable Energy Program Manager and Federal Co-Lead for the Mid-Atlantic Regional Planning Body

United States Department of the Interior

OFFICE OF THE SECRE! '\.R.Y
Washington, D.C. 20240

AUG 1 6 2013

Ms. Sarah Chasis
Senior Attorney and Director, Ocean Initiative
Natural Resources Defense Council
40 West 20th Street
New York, New York 10011

Dear Ms. Chasis:

Thank you for your June 14, 2013, letter to Secretary of the Interior Sally Jewell on behalf of you and your colleagues at organizations interested in working with the Mid-Atlantic Regional Planning Body (RPB) to advance the coordination and sustainable use of ocean resources. I have been asked to respond on Secretary Jewell's behalf. A similar response is being sent to each organization referenced in your letter.

The Department of the Interior is committed to advancing regional marine planning as part of the National Ocean Policy. We are fortunate to have Maureen Bornholdt from the Bureau of Ocean Energy Management (BOEM) serving as the Federal Co-lead for the Mid-Atlantic RPB. Ms. Bornholdt has extensive knowledge of multiple ocean uses, and understands the importance of engaging stakeholders early in the marine planning process. We are employing a team approach to supporting the Mid-Atlantic RPB efforts by drawing upon the knowledge base of a variety of scientists and subject matter experts within the Department.

Following the Mid-Atlantic Regional Ocean Planning Workshop this April, Ms. Bornholdt initiated bi-weekly teleconferences with the Mid-Atlantic RPB State and Tribal Co-Leads to chart the path forward.

In July, BOEM sent an email on behalf of the Co-Leads to update stakeholders about the Mid-Atlantic RPB. BOEM also established a webpage (http://www.boem.gov/Environmental-Stewardship/Mid-Atlantic-Regional-Planning-Body/index.aspx) to share information with the public.

The Co-Leads have formed internal sub-workgroups to begin considering fundamental operational and administrative Mid-Atlantic RPB procedures (e.g., drafting a charter) and identifying opportunities to engage stakeholders in preparation for the Mid-Atlantic RPB's first public meeting. The Mid-Atlantic RPB will reach out to stakeholders about opportunities to review and comment on those draft products.

The Mid-Atlantic RPB held a webinar on August 1 to update stakeholders about progress and plans going forward, and to provide an opportunity for public input. The Mid-Atlantic RPB is

also planning an in-person public meeting in September. Details on these events will be posted on the web site referenced above.

The Mid-Atlantic RPB welcomes any additional ideas for our efforts to connect with the broader ocean constituency. We look forward to working with your organizations to foster successful marine planning in the Mid-Atlantic Region.

Sincerely,

Tommy P. Beaudreau
Acting Assistant Secretary
Land and Minerals Management

Sea Grant

TO: Maureen A. Bornholdt, Federal Co-Lead, Mid-Atlantic Regional Planning Body
Gwynne Schultz, State-Co-Lead for the Mid-Atlantic Regional Planning Body
Gerrod Smith, Tribal Co-Lead for the Mid-Atlantic Regional Planning Body

FROM: Dr. Nancy Targett, Director, Delaware Sea Grant
Dr. Peter Rowe, Research and Extension Director, New Jersey Sea Grant
Ms. Ann Faulds, Associate Director, Pennsylvania Sea Grant
Dr. Fredrika Moser, Director, Maryland Sea Grant
Dr. Troy Hartley, Director, Virginia Sea Grant
Dr. Susan White, Executive Director, North Carolina Sea Grant
Dr. William Wise, Interim Director, New York Sea Grant

cc: Dr. Biliana Cicin-Sain, Director, Gerard J. Mangone Center for Marine Policy at the University of Delaware's College of Earth, Ocean, and Environment

DATE: July 1, 2013

SUBJECT: Opportunities for collaboration between Mid-Atlantic Sea Grant Programs and Mid-Atlantic RPB

Dear Maureen, Gwynne, and Gerrod:

We hope the *Mid-Atlantic Regional Ocean Research Plan* has provided your offices with data and thoughtful analysis that contributes to your work with the newly formed Mid-Atlantic RPB. The report identifies and prioritizes ocean research needs of the Mid-Atlantic through synthesis of previous research recommendations and stakeholder prioritization. Led by the Delaware, New Jersey, Pennsylvania, Maryland, Virginia, and North Carolina Sea Grant programs, with assistance from New York Sea Grant, the effort was funded by NOAA's National Sea Grant Office. As you proceed with implementation of marine planning in the Mid-Atlantic as outlined in the National Ocean Policy, we look forward to exploring ways that the Mid-Atlantic Sea Grant Programs can collaborate with the Mid-Atlantic RPB and other regional bodies, such as the Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS), to advance mutual goals. We welcome an opportunity to meet and discuss potential opportunities.

As a university-based, federal-state partnership, the Sea Grant network provides unique access to the best available science, technology, and expertise to support human and environmental needs in coastal and ocean areas. In addition, the focus on integrated research, communication, education, extension, and additional outreach programs ensures that the science developed through cutting-edge research is effectively communicated to government, non-profit, and private sector end-users and informs their

science-based planning and decisions. Sea Grant programs strive for responsiveness by utilizing stakeholder input to both our long and short term planning strategies, as well as our research and outreach funding decisions. Our emphasis on high-quality, cutting edge research allows us to be forward-thinking, in some cases identifying impending issues in natural resources management before stakeholders are impacted. In all our work, the sustainability of coastal economies and ecosystems is our target. Our extensive networks, understanding, and support for scientific ocean research uniquely position Sea Grant as a resource for scientific research, extension, and outreach for the Regional Planning Body.

The Mid-Atlantic Sea Grant Programs are supportive of the efforts of the RPB to improve planning and management of our coastal and ocean resources. We welcome the opportunity to meet with the RPB (as a group or with individual representatives) to discuss ways that we can work together to support effective ocean and coastal management in the Mid-Atlantic region.

If you have any questions or would like to arrange a meeting, please contact Jen Merrill and Nancy Targett at merrillj@udel.edu or (302)831-8087. The plan is available electronically at: http://www.midatlanticoceanresearchplan.org/sites/www.midatlanticoceanresearchplan.org/files/u6/MidAtlanticRegionalOceanResearchPlan-Final.pdf.

cc: **Mid-Atlantic Regional Planning Body members:**

Federal Agency Representatives

Joe Atangan, Chairman of the Joint Chiefs of Staff, U.S. Navy, Joint Staff Representative, Atlantic Regional Bodies, U.S. Fleet Forces Command
Thomas Bigford, National Oceanic and Atmospheric Administration, Chief, Habitat Protection Division, NMFS
Patrick Gilman, Department of Energy, Wind Market Acceleration Lead
Jon Hall, Department of Agriculture, NRCS, State Conservationist
Frank Mach, Department of Transportation, Director, Mid-Atlantic Gateway Office
W. David Noble, Department of Defense, U.S. Navy, Supervisory Natural Resources Specialist
Douglas Pabst, Environmental Protection Agency, Acting Chief, Region 2
John Walters, Department of Homeland Security, U.S. Coast Guard, Chief, Waterways Management Section, 5th District

State Agency Representatives

Sarah Cooksey, Delaware Department of Natural Resources and Environmental Control
Joseph Martens, Commissioner, New York Department of Environmental Conservation
Cesar Perales, New York, Secretary of State
Amy Cradic, New Jersey, Senior Policy Advisor
Robert Martin, Commissioner, New Jersey Department of Environmental Protection
Andrew Zemba, Pennsylvania Department of Environmental Protection, Director, Pennsylvania Interstate Waters Office

Kelly Heffner, Pennsylvania Department of Environmental Protection, Deputy Secretary for Water Management

John Clark, Delaware Department of Natural Resources and Environmental Control, Environmental Program Administrator

Catherine McCall, Maryland Department of Natural Resources, Director, Coastal and Marine Assessment Division

Richard Weeks, Virginia Department of Environmental Quality, Chief Deputy

Jack Travelstead, Virginia Marine Resources, Commissioner

Tribal Representatives

Clint Hill, Oneida Indian Nation, Turtle Clan Representative

Meaghan Murphy Beakman, Oneida Indian Nation, General Council

National Ocean Council Director:

Deerin Babb-Brott, National Ocean Council Office

Mid-Atlantic Regional Council on the Ocean:

Maureen A. Bornholdt, Bureau of Ocean Energy Management

Gregory Capobianco, New York Department of State

Sarah W. Cooksey, Delaware Department of Natural Resources and Environmental Control

Michelle Lennox, MARCO Program Manager

Laura McKay, Virginia Coastal Zone Management Program

Martin Rosen, New Jersey Department of Environmental Protection

National Sea Grant Office:

Leon Cammen, National Sea Grant Office

Dorn Carlson, National Sea Grant Office

July 22, 2013

Dear Dr. Targett:

Thank you for the July 8, 2013, letter to the Mid-Atlantic Regional Planning Body Co-Leads on behalf of the Mid-Atlantic Sea Grant College Program Directors. We share your commitment to collaboration and advancement of regional marine planning, and we appreciate your work to reach out to stakeholders and identify key scientific information needs.

The Mid-Atlantic Regional Planning Body (MidA RPB) will consider the ideas put forth in your research plan as we discuss our next steps. Since the five priority issue-areas outlined in the Mid-Atlantic Regional Ocean Research Plan align with the initial priority objectives currently in discussion by the MidA RPB, the analysis and data offered by the Plan would be an important resource moving forward. As you recognize, a cornerstone of marine planning is the need for the best available science to inform the process and achieve the goals and objectives identified by the regional planning body. We will need to draw on organizations like the Sea Grant institutions to provide the science and assist with interpretation. In addition, the Sea Grant network of scientists and skills with outreach to local communities will be an asset to this effort. Your support is critical to the success of marine planning in the Mid-Atlantic region.

It was good to see some of your Sea Grant colleagues at the Mid-Atlantic Regional Ocean Planning Workshop that was held in April. Since that time, the MidA RPB has created sub-workgroups to begin to consider fundamental operational and administrative MidA RPB procedures (e.g., drafting a charter and identifying data needs). We are also identifying opportunities to engage stakeholders in preparation for our first public meeting in September. We established a webpage (http://www.boem.gov/Environmental-Stewardship/Mid-Atlantic-Regional-Planning-Body/index.aspx) to share information with the public and we created an email address (MidAtlanticRPB@boem.gov) to which comments and questions can be sent. The MidA RPB is convening a MidA RPB webinar on August 1 to update stakeholders about progress and plans going forward, and to provide an opportunity for public input. Through the webpage and email messages, the MidA RPB will notify stakeholders and provide additional details about these opportunities.

It is the intention of the MidA RPB to sustain a transparent regional planning process and we welcome your recommendations and your offer of assistance to the MidA RPB in our efforts to connect with the broader ocean constituency. Please contact the enhanced data and information workgroup with any additional ideas or questions you may have. We remain early in our planning effort but we will respond as soon as possible. That data and information workgroup is co-championed by Marilyn Lennon with the NJ Department of Environmental Protection (Marilyn.Lennon@dep.state.nj.us; 609-292-2178) and John Walters with the U.S. Coast Guard (john.r.walters@uscg.mil; 757-398-6230). We look forward to working with the Mid-Atlantic Sea Grant College Program Directors to foster successful marine planning in our Region.

Sincerely,

Maureen A. Bornholdt
Federal Co-Lead for the Mid-Atlantic Regional Planning Body
Program Manager
Office of Renewable Energy Programs
Bureau of Ocean Energy Management
U.S. Department of the Interior

Gwynne Schultz
State Co-Lead for the Mid-Atlantic Regional Planning Body
Senior Coastal and Ocean Policy Advisor
Maryland Department of Natural Resources

Gerrod Smith
Tribal Co-Lead for the Mid-Atlantic Regional Planning Body
Chief Financial Officer
Shinnecock Indian Nation

cc: Marilyn Lennon
John Walters

Clean Ocean Action • Delaware Chapter of the Sierra Club • Maryland Academy of Sciences at The Maryland Science Center • Miami2Maine • Natural Resources Defense Council • New Jersey Sierra Club • Ocean Conservancy • Surfrider Foundation • TerraScapes • Virginia Conservation Network • Wild Oceans • Wildlife Conservation Society

September 4, 2013

Mid-Atlantic Regional Planning Body Co-Leads:

Ms. Maureen Bornholdt
Renewable Energy Program Manager
Bureau of Ocean Energy Management
U.S. Department of the Interior
1849 C Street, NW
Washington, D.C. 20240

Mr. Gerrod Smith
Chief Financial Officer
Shinnecock Indian Nation
P.O. Box 5006
Southampton, New York 11969

Ms. Gwynne Schultz
Senior Coastal and Ocean Policy Advisor
Maryland Department of Natural Resources
580 Taylor Avenue, E2
Annapolis, Maryland 21401

Submitted electronically

Re: Discussion Points from the Mid-Atlantic Regional Planning Body's August 1st Webinar

Dear Ms. Bornholdt, Ms. Schultz, and Mr. Smith:

Thank you for all of the time and effort that you and the other representatives serving on the Mid-Atlantic Regional Planning Body (MidA RPB or RPB) clearly invested in hosting the informative August 1st webinar. We appreciated the planning updates; the RPB certainly has covered a great deal of ground since its formation in April.

Below, please find recommendations that we hope you will consider in advance of the upcoming RPB meeting on September 24-25. This letter supplements comments raised by many of our groups in a May 30, 2013 letter[1] and on the conference call regarding stakeholder and public outreach, planning goals and overall regional ocean plan development.

I. Establish a stakeholder advisory panel and a science advisory panel.

It is critical that the MidA RPB identify a formal mechanism to solicit regular, proactive input and recommendations, as well as feedback from and respond to stakeholders in the region. On the webinar,

[1] NRDC, et al. Letter re: Public and Stakeholder Engagement in the Mid-Atlantic Regional Planning Body Process to: Maureen Bornholdt, Sarah Cooksey, and Gerrod Smith. 30 May 2013.

several options were suggested: a stakeholder liaison committee of individuals who can reach out to and serve as a voice for their sector's interests; a blue ribbon stakeholder panel comprised of experts; sector by sector regional meetings; and an online comment tool. We respectfully recommend that the MidA RPB incorporate elements from each of these models into their final stakeholder outreach plan.

The letter many of our groups sent on May 30, 2013 outlines a possible stakeholder advisory panel most akin to the stakeholder liaison committee described on the conference call, but also identified several components that would help achieve the benefits offered by the other methods. Our organizations suggest that the stakeholder body consist of representatives from at least the following sectors: environmental NGOs, recreational user groups (*e.g.*, surfing, swimming, boating, paddling, bird watching, diving), recreational fishing, commercial fishing, aquaculture, offshore wind energy, shipping and ports, coastal tourism, and marine trades (*e.g.*, marinas, ship building). It may be appropriate to have multiple representatives per sector and to include scientists in this panel as well as in the science advisory panel noted below. Similar to the RPB's stakeholder liaison model, all chosen representatives should act as a conduit for views shared by the broader sector they represent. Ensuring that the selected stakeholders represent geographic diversity will help account for any regional differences, addressing concerns that perhaps underlie the RPB's sector by sector regional meeting proposal. Stakeholder liaisons also should be recognized leaders in their field, allowing the body to function as a quasi-blue ribbon panel. Our organizations feel strongly that the public should be invited to attend all formal stakeholder body meetings and to comment at them, and that everyone should have access to an online comment tool for all documents offered for review. We further suggest that if an additional entity wants to be added to the stakeholder advisory panel, they be allowed to write a letter requesting consideration to the RPB.

Additionally, we continue to recommend establishment of a science advisory panel comprised of academics and subject matter experts working throughout the region to advise the RPB on technical matters and to provide regular and meaningful advice at all stages of the planning process. The public should also be invited to attend all science advisory panel meetings and to offer comment at them.

Please note that a lack of identified funding should not prevent the establishment of both aforementioned stakeholder entities. We encourage you to incorporate both the stakeholder and the below public outreach processes directly into the RPB's charter, as opposed to waiting to include it in the work plan.

II. Offer frequent public engagement opportunities.

Our organizations thank you for the newly developed RPB website with contact information and the email list that will help make your work more transparent and improve contact with the broader public. We encourage you to commit to posting all documents, including meeting agendas and notes, in a timely fashion, no later than two weeks after the meeting. We also encourage the RPB to provide email updates at least once a month so that the public can see the initiative's steady progress.

As previously communicated, we urge you to publish a schedule of quarterly in-person RPB meetings and have these meetings open to the public and webcast. Similarly to how you are proceeding to announce this first September RPB meeting, we ask you to please continue providing ample notice of RPB meetings by website posting, through the listserv, and with other methods of general outreach.

We recommend that for all official public meetings – in person and webinars – a participant list that includes names and identified organizations be provided. This document should be made available at the in-person meetings upon arrival, based on RSVPs, and can be posted online after webinars. Providing this document will help ensure transparency and improve stakeholder communication.

We were impressed with how smoothly the recent webinar ran and encourage you to continue to explore this option in the future, perhaps by hosting a series of webinars of key topics the RPB would like to solicit initial feedback on. By identifying a select topic, the webinars could be held to a shorter, manageable time commitment while encouraging more of a dialogue where questions could be answered as they are raised.

We request that all relevant meeting documents be made available to the public as far in advance of the meeting as possible to allow for interested parties to come prepared to discuss the ideas the RPB puts forth for consideration. In particular, it would be helpful for many of us to review the draft RPB charter and any updated goals prior to September 24th. Additionally, we would like to stress the importance of hosting public in-person meetings throughout the region on key components of the plan, for example, on the regional ocean planning goals.[2]

III. Propose regional planning goals comparable to those drafted by the Northeast Regional Planning Body,[3] which prioritize the importance of ocean health and encourage sustainable use.

Our organizations believe that while the regional planning work may unfold differently in regions, certain overarching goals should be shared and we are united in calling for all the RPBs to develop final plans that protect, maintain and restore the health of their regions' ocean and coastal ecosystems. As such, our groups support the Northeast Regional Planning Body's (Northeast RPB) draft healthy ocean and coastal ecosystems goal to:

> Develop a planning framework to protect, restore, and maintain healthy ocean and coastal ecosystems that provide social, cultural, spiritual, and economic benefits. Account for changing environmental conditions and new information as it becomes available. Respect the intrinsic value of the ocean, its biodiversity, and act as its steward/caretaker, recognizing humans as part of the ecosystem.[4]

We believe that this should be an overarching goal of the MidA RPB's plan as well. It fulfills the mission of the National Ocean Policy, from which the RPBs take direction and which calls for action to help "protect, maintain, and restore the health and biological diversity of ocean, coastal, and Great Lakes ecosystems and resources"; "improve the resiliency of ocean, coastal, and Great Lakes ecosystems, communities, and economies"; and "bolster the conservation and sustainable uses of land in ways that will improve the health of ocean, coastal, and Great Lakes ecosystems".[5]

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[2] The May 30 letter that many of our groups sent suggests holding a series of public meetings to discuss the Mid-Atlantic RPB's goals and includes proposed geographic locations.

[3] *Available at* http://northeastoceancouncil.org/wp-content/uploads/2012/11/Draft-Goals-for-Public-Review.pdf.

[4] *Ibid.*

[5] Executive Order 13547, *available at* http://www.whitehouse.gov/the-press-office/executive-order-stewardship-ocean-our-coasts-and-great-lakes. *See also*, the *Final Recommendations of the Interagency Ocean Policy Task Force*, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf: "[regional ocean planning] provides a

We recommend that this goal underlie all of the RPB's planning efforts, as only a healthy ocean can continue to provide the food, jobs and recreation we want and need. In 2010, the Mid-Atlantic's ocean resources supported roughly 650,000 jobs, with the tourism and recreation sector representing more than 73 percent of these.[6] In 2011, over 2.4 million recreational anglers took 16 million fishing trips in the Mid-Atlantic region.[7] In 2011, the region's seafood industry – not accounting for imported seafood – supported nearly 37,000 jobs.[8] This employment and enjoyment rely on clean coastal waters and beaches and healthy and abundant fish and wildlife. The Mid-Atlantic's valuable nearshore and open ocean waters are already struggling with serious problems, like pollution, destruction of productive marine habitats, climate change and ocean acidification; it is critical that we do not overwhelm the natural system's ability to properly function and provide for us. For these reasons, we ask that the overarching importance of ecosystem protection be highlighted as a defining goal and reflected in the MidA RPB's charter as part of its mission statement and in the work plan.

In order to achieve this goal, the RPB should commit to conducting – in partnership with the National Oceanic and Atmospheric Administration and other scientific partners and federal agencies – a regional assessment of the area's ecosystem, as is called for by the *Final Recommendations of the Interagency Ocean Policy Task Force*,[9] and to using a science-based methodology to help identify and protect important ecological areas, advised by the regional assessment. To the extent of their existing authorities, federal agencies and states and tribes can take steps to safeguard the areas and ecosystem processes important for spawning, breeding, feeding and migrating ocean fish and wildlife and ensure that the various impacts of ocean uses – alone and in concert – do not threaten the natural system's health or the variety of uses (*e.g.*, surfing, boating, fishing, paddling, bird watching) that depend on these resources.

We also support utilizing the Northeast RPB's goal relating to ocean uses as an alternative to the draft goals on particular uses that were presented at the webinar. The Northeast RPB goal states:

> Develop a planning framework to encourage compatibility among past, current and future uses of ocean and coastal waters while minimizing user conflict and impacts to environmental and cultural resources. Recognize local priorities and the connection of ocean uses and the ecosystem

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public policy process for society to better determine how the ocean, coasts, and Great Lakes are sustainably used and protected - now and for future generations" and "ultimately is intended to result in protection of areas that are essential for the resiliency and maintenance of healthy ecosystem services and biological diversity, and to maximize the ability of marine resources to continue to support a wide variety of human uses." (pp. 41, 44).

[6] National Oceanic and Atmospheric Administration. ENOW Data 2010. *Available at* http://www.csc.noaa.gov/ENOWDataWizard/index.jsp?RegionList=-4&vYears=2010. Please note that employment numbers and percentage of jobs due to tourism and recreation and living resources would be higher if the data accounted for the self-employed. Jobs numbers include part-time and seasonal employees.

[7] National Marine Fisheries Service. 2012. *Fisheries Economics of the United States, 2011. Available at* http://www.st.nmfs.noaa.gov/Assets/economics/documents/feus/2011/FEUS%202011-Revised.pdf.

[8] *Ibid.* Please note that the results from this survey cannot be directly compared to the ENOW data; the analyses use different data and models. Please note that the NMFS report includes self-employed fishermen.

[9] *See*, for example, page 59: "The regional assessment would include: relevant biological, chemical, ecological, physical, cultural, and historical characteristics of the planning area; ecologically important or sensitive species/habitats/ecosystems; and areas of human activities. The assessment would also include an analysis of ecological condition or health and of cumulative risks as well as forecasts and models of cumulative impacts. The regional assessment would explain the information obtained and analyses conducted during the planning process and how they were used to help determine management decisions and plan alternatives." *Available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf.

to shoreside infrastructure and activities. Facilitate increased understanding and coordination among stakeholders, recognizing the difficulty of resolving certain conflicts.[10]

This goal provides a helpful way of approaching the planning process itself, as well as the assessment of different ocean uses.

IV. Commit to developing a final draft plan by the end of 2015.

The Northeast RPB has proposed a three-year planning timeline, with a final product to be submitted to the National Ocean Council for approval in 2015;[11] hopefully, the MidA RPB can match this schedule so that we can begin using this much-needed plan as soon as possible. In particular, it would be important to ensure that the time and effort invested in this process is acknowledged by a supportive Administration. After 2016 it is possible that the federal agencies participating in this effort may be under a new Administration that is not as receptive to this work.

It should also be noted that while the RPB is not a regulatory body, once a regional ocean plan is approved, federal agencies are required to comply with the regional ocean plans "to the fullest extent consistent with applicable law".[12] The sooner that the plan is finalized, the sooner that federal agencies and others can begin to act.

Our organizations appreciate the opportunity to share with you these recommendations for developing a transparent regional ocean planning process that encourages strong public and stakeholder involvement and protects our valuable ocean resources. Please let us know if you would like to discuss any of these items in greater depth. We look forward to seeing you at September's MidA RPB meeting.

Sincerely,

Ali Chase
Policy Analyst
Natural Resources Defense Council

Matt Gove
Mid-Atlantic Policy Manager
Surfrider Foundation

Pam Lyons Gromen
Executive Director
Wild Oceans

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[10] *Available at* http://northeastoceancouncil.org/wp-content/uploads/2012/11/Draft-Goals-for-Public-Review.pdf.

[11] *See*, for example, page 63 of the Northeast RPB's April 11-12, 2013 meeting materials: http://northeastoceancouncil.org/wp-content/uploads/2013/04/Meeting-Materials-MEMBER-NE-RPB-April-11-12-Meeting-Materials.pdf.

[12] Executive Order 13547, *available at* http://www.whitehouse.gov/the-press-office/executive-order-stewardship-ocean-our-coasts-and-great-lakes.

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Policy and Campaigns Manager
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September 12, 2013

Dear Ms. Chase:

Thank you for the September 4, 2013, letter to the Mid-Atlantic Regional Planning Body (MidA RPB) Co-Leads cosigned by organizations interested in working with us as we initiate a regional ocean planning process.

Your suggestions for the MidA RPB to consider regarding stakeholder engagement, public outreach, planning goals, and the regional ocean plan development are timely as we prepare for our inaugural in-person meeting on September 24 and 25 at Monmouth University in New Jersey.

Topics to be discussed by the MidA RPB during the September meeting will include: a timeline for regional ocean planning and associated products; initial draft regional ocean planning goals and the geographic focus; mechanisms for engaging stakeholders throughout the process; and next steps regarding data/information and operational considerations.

As mentioned during the August 1 webinar, members of the MidA RPB are currently working via informal, ad hoc workgroups to consider fundamental operational and administrative procedures and are developing initial draft ideas and products that will facilitate the discussions during the upcoming in-person meeting. These early ideas will be captured in meeting materials, which will be posted on the MidA RPB website by September 16, along with a meeting agenda. The MidA RPB welcomes and encourages your input about these ideas and any other aspects of regional ocean planning. We invite members of your organizations to attend and actively participate in the meeting or to provide input to the MidA RPB in writing via email at MidAtlanticRPB@boem.gov. The MidA RPB welcomes any additional ideas for our efforts to connect with the broader ocean constituency.

We share your commitment to collaboration and advancement of regional ocean planning and we will continue to consider the ideas put forth in your letter as we prepare to take our next steps. We look forward to working with your organizations to foster successful ocean planning in the Mid- Atlantic Region.

Sincerely,

Maureen A. Bornholdt
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State Co-Lead for the Mid-Atlantic Regional Planning Body
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American Littoral Society ● Clean Ocean Action ● Maryland Academy of Sciences at The Maryland Science Center ● Miami2Maine ● Natural Resources Defense Council ● Ocean Conservancy ● Surfrider Foundation ● TerraScapes ● Wildlife Conservation Society

October 8, 2013

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Submitted electronically

Re: <u>The Mid-Atlantic Regional Planning Body's Inaugural Meeting and Draft Documents</u>

Dear Ms. Bornholdt, Ms. Schultz, and Mr. Smith:

On behalf of the organizations listed above and our millions of members and activists, we wish to congratulate you and the other Mid-Atlantic Regional Planning Body (MidA RPB or RPB) representatives for holding your inaugural public meeting on September 24 and 25. Several of us were able to attend, and all of us are closely following this process and reviewing the RPB's draft materials.[1] We offer our recommendations below regarding the RPB's proposed vision statement, goals and objectives, charter and mechanisms for increased stakeholder engagement.[2] We appreciate the opportunity to engage in this regional ocean planning process from the start and hope to see it result in the

[1] September 16, 2013 meeting materials that were posted online (at http://www.boem.gov/Environmental-Stewardship/Mid-Atlantic-Regional-Planning-Body/MidA-RPB-Materials.aspx) and that will be addressed in this letter are: Draft Regional Ocean Planning Goals and Geographic Focus Ideas for the Mid-Atlantic, Mid-Atlantic RPB Stakeholder Engagement: Current mechanisms and options for the future, DRAFT Charter for the Mid-Atlantic Regional Planning Body, Mid-Atlantic Regional Council on the Ocean Proposed Products and Services for use by the Mid-Atlantic Regional Planning Body and Mid-Atlantic Regional Ocean Planning 5 year Timeline: DRAFT for RPB Discussion. Additionally, this letter refers to a September 25 PowerPoint which detailed possible pieces of a vision statement and revised goals, possible objectives and a timeline for the goals.

[2] This letter builds on the letters several of our organizations submitted to the MidA RPB on May 30 and September 4, 2013.

development of a plan that protects, maintains and restores the health of the Mid-Atlantic's valuable ocean and coastal resources and has a goal of achieving sustainable use.

I. By 2016, the MidA RPB should produce a final regional ocean plan.

Our organizations are concerned that RPB members have not embraced development of a regional ocean plan, also known as a coastal and marine spatial plan (CMS Plan), as part of their overarching mission. The body's work as envisioned by the National Ocean Policy is to extend beyond that of acting as a shared forum to bring a variety of federal, state and tribal actors together, with input from stakeholders, technical experts and the public, to coordinate and discuss future ocean development. As stated in the *Final Recommendations of the Interagency Ocean Policy Task Force* (Final Recommendations): "Regional planning bodies would function as convening and planning bodies that comprise Federal, State, and tribal representatives responsible for implementing existing authorities to create a process, *and ultimately a plan*, to better apply such existing authorities to achieve agreed upon regional goals and objectives."[3] We recommend that the mission and member commitments sections of the RPB's charter[4] indicate a desire on behalf of all parties to use the ocean planning vehicle to advance shared priorities and produce a plan.

Moreover, federal RPB members are required under Executive Order 13547 (Executive Order or Order) to "participate in the process for coastal and marine spatial planning and comply with [National Ocean] Council certified coastal and marine spatial *plans*."[5] The draft RPB charter's member commitment statement that "The Members agree, to the extent *practicable* and consistent with their underlying authorities, to participate in the process for marine planning…"[6] falls short of the Order's call for members of the federal family to develop and comply with plans "to the fullest extent consistent with applicable law"[7] and, accordingly, the statement should be revised by inserting "fullest" before "extent" and removing the word "practicable." Further, we recommend that members use all National Ocean Policy documents in developing their plan – there is no need to reference only the National Ocean Council's *Marine Planning Handbook*.[8]

The charter should also note the importance of conducting the Regional Ocean Assessment which was described at the meeting.[9] Currently, the capacity assessment and the work plan need are defined in the charter's mission, but the Regional Ocean Assessment which will drive the heart of the planning work is not listed.[10] We also suggest that the charter contain an upfront commitment to use the best available data to plan with and that the body commit to developing an iterative, adaptive process to ensure that the Regional Ocean Assessment and the plan itself remain living documents.

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[3] Final Recommendations at 62, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf. Emphasis added.

[4] DRAFT Charter for the Mid-Atlantic Regional Planning Body at 2 and 6.

[5] Executive Order 13547, *available at* http://www.whitehouse.gov/the-press-office/executive-order-stewardship-ocean-our-coasts-and-great-lakes. Emphasis added.

[6] DRAFT Charter for the Mid-Atlantic Regional Planning Body at 5. Emphasis added.

[7] Executive Order 13547, *available at* http://www.whitehouse.gov/the-press-office/executive-order-stewardship-ocean-our-coasts-and-great-lakes.

[8] DRAFT Charter for the Mid-Atlantic Regional Planning Body at 5.

[9] Our organizations were pleased to see discussion of the Regional Ocean Assessment at the meeting and intend to submit separate comments offering our recommendations on this work.

[10] DRAFT Charter for the Mid-Atlantic Regional Planning Body at 2.

In order to ensure that the time and effort invested in this process is undertaken during a supportive Administration, we further recommend that the MidA RPB match the three-year planning schedule set out by the Northeast Regional Planning Body (Northeast RPB), which calls for a final product to be submitted to the National Ocean Council for approval in 2015.[11] We recommend that the MidA RPB submit a draft plan to the National Ocean Council for review in 2015, with the goal of sign-off on the document in early 2016. The Mid-Atlantic region is a diverse region with a fair number of competing uses, but there are shared Mid-Atlantic Regional Council on the Ocean (MARCO) commitments that could be addressed – at least in part – through marine planning, for example: "Promote the identification and protection of important ocean habitats, including sensitive and unique offshore areas"; "Collaborate on a regional approach to support the sustainable development of renewable energy in offshore areas;" and "Prepare Mid-Atlantic communities for the effects of climate change on coastal and ocean resources."[12] Selecting a subset of issues to tackle through this process and adhering to a tight schedule to advance these priorities would allow the MidA RPB members to achieve a first CMS Plan, the success of which could then be built off of for future iterations of a regional ocean plan. Having a plan in place as the next generation of wind projects is developed, as short sea shipping takes off and as decisions continue to be made regarding the location and extent of offshore sand mining makes great sense.

II. Propose a regional vision statement, planning goals and objectives and a charter which prioritize ocean health and encourage sustainable use.

Our organizations' encouragement and support for the RPB stems from the understanding that this process will lead to improved ocean health and sustainable ocean use for this and future generations. The Executive Order calls for action to help "protect, maintain, and restore the health and biological diversity of ocean, coastal, and Great Lakes ecosystems and resources"; "improve the resiliency of ocean, coastal, and Great Lakes ecosystems, communities, and economies"; and "bolster the conservation and sustainable uses of land in ways that will improve the health of ocean, coastal, and Great Lakes ecosystems".[13] The Final Recommendations further state:

> *[Coastal and marine spatial planning or CMSP] is intended to improve ecosystem health and services by planning human uses in concert with the conservation of important ecological areas, such as areas of high productivity and biological diversity; areas and key species that are critical to ecosystem function and resiliency; areas of spawning, breeding, and feeding; areas of rare or functionally vulnerable marine resources; and migratory corridors. Enhanced ecosystem services and benefits can be attained through CMSP because they are centrally incorporated into the CMS Plan as desired outcomes of the process and not just evaluated in the context of individual Federal or State agency action. CMSP allows for a comprehensive look at multiple sector demands which would provide a more complete evaluation of cumulative effects. This ultimately is intended to result in protection of areas that are essential for the resiliency and maintenance of*

[11] *See*, for example, page 63 of the Northeast RPB's April 11-12, 2013 meeting materials: http://northeastoceancouncil.org/wp-content/uploads/2013/04/Meeting-Materials-MEMBER-NE-RPB-April-11-12-Meeting-Materials.pdf.

[12] Mid-Atlantic Regional Council on the Ocean Proposed Products and Services for use by the Mid-Atlantic Regional Planning Body at 1.

[13] Executive Order 13547, *available at* http://www.whitehouse.gov/the-press-office/executive-order-stewardship-ocean-our-coasts-and-great-lakes.

healthy ecosystem services and biological diversity, and to maximize the ability of marine resources to continue to support a wide variety of human uses."[14]

As such, we believe it critical that the MidA RPB's goals clearly indicate the protection and enhancement of ocean health as a desired outcome of the plan. Our organizations have previously suggested the MidA RPB adopt the Northeast RPB's draft healthy ocean and coastal ecosystems goal to:

> Develop a planning framework to protect, restore, and maintain healthy ocean and coastal ecosystems that provide social, cultural, spiritual, and economic benefits. Account for changing environmental conditions and new information as it becomes available. Respect the intrinsic value of the ocean, its biodiversity, and act as its steward/caretaker, recognizing humans as part of the ecosystem.[15]

While regional differences between the Northeast and the Mid-Atlantic exist, both regions understand the value that a healthy ocean system brings not only to ocean wildlife, but to all of us who depend on ocean resources to continue to provide the food, jobs and recreation we want and need.[16] We appreciate that this concept is reflected in the MidA RPB's revised draft goal of "Stewardship, protect and restore ecosystem health and functionality, account for key habitat,"[17] but believe the statement must go further to express the fundamental importance of ecosystem health. Also, we would want to see as a goal protection for key habitats, not just "accounting" for key habitats.

Our organizations offer the following vision statement and goals, based on the Executive Order, the Northeast RPB's draft goals and the September 25 PowerPoint, for consideration:

Vision Statement:
To ensure healthy,[18] resilient and resistant,[19] safe and productive Mid-Atlantic ocean and coastal resources so as to promote the well-being, prosperity and security of present and future generations.

Goals and Objectives:

1. Protect, maintain and restore the natural biological, chemical and physical health and integrity of the region's ocean and coastal ecosystems.[20] Respect the intrinsic value of the ocean, its biodiversity,[21] and act as its steward, recognizing humans as part of the ecosystem

[14] Final Recommendations at 44, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf. Emphasis added.
[15] *Available at* http://northeastoceancouncil.org/wp-content/uploads/2012/11/Draft-Goals-for-Public-Review.pdf.
[16] Please see the September 4 letter for examples of the economic value healthy oceans provide.
[17] September 25 PowerPoint at 4.
[18] Some have questioned whether definitions exist for terms like "healthy ecosystem" and "biodiversity." We have provided definitions for some key terms pulled from scientific literature and other sources and suggest that incorporating definitions within the RPB's documents may be one way to address potential confusion. For example, we recommend the following definition for ecosystem health: *the ability of an ecosystem in ocean and coastal waters to support and maintain patterns, important processes, and productive, sustainable, and resilient communities of organisms, having a species composition, diversity, and functional organization resulting from the natural habitat of the region, such that it is capable of supporting a variety of activities and providing a complete range of ecological benefits.*
[19] Resilience: *ability to recover from perturbations/stressors.* Resistance: *ability to resist perturbations/stressors*.
[20] Ecosystem: *a biogeographical and geophysical unit including species and habitat.*
[21] Biodiversity: *variation of life forms within a given habitat or ecosystem.*

and healthy marine resources as providing valuable ecosystem services,[22] social and cultural benefits, and support for vibrant ocean and coastal communities.

Possible objectives:

- Conduct a Regional Ocean Assessment based on the best available science and existing local and traditional knowledge[23] to identify our ocean's important features, such as the variety of seafloor habitats and the populations of native, threatened, and endangered species, and assess their current conditions.

- As part of the Regional Ocean Assessment, develop an assessment of the region's key socio-economic attributes, including the current and emerging human uses and characteristics of the region's culture and economy.

- Identify and protect important ecological functions,[24] areas and wildlife in order to ensure the system's resilience and its ability to continue to support existing and traditional human uses.

- Develop a series of ecological indicators[25] and regularly assess the natural system's baseline health to better understand changing environmental conditions and the impacts from increased human activities.

- Account for new information on environmental health and potential ocean uses as it becomes available and plan accordingly.

2. Develop a planning process which advances sustainable development[26] of the region's ocean and coastal resources. Respect the gains we have made in managing the region's ocean health and maximize compatibility among past, current and future uses of ocean and coastal waters while minimizing user conflict and impacts to environmental and cultural resources. Ensure meaningful and frequent opportunities for stakeholder and public engagement in management decisions that will affect their lives and livelihoods.

   Possible objectives:

   - Collaborate on a regional approach to support the sustainable development of offshore renewable energy and sand resources.

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[22] Ecosystem service: *services provided to humans by ecosystems*, such as clean water, food and recreational opportunities.
[23] Traditional and local knowledge: *empirical knowledge, including ways of perceiving and understanding the world, grounded in practical experience, often part of the cultural heritage of a region and passed down through generations.*
[24] Ecosystem function*: functions provided by the ecosystem, elements of the ecosystem, or ecosystem interactions*, such as nutrient cycling.
[25] Ecosystem indicator: *a variable that provides information that can be used as a proxy for other variables that are more difficult to assess, particularly in complex systems.*
[26] Sustainability: *the capacity to endure and remain diverse and productive over time, without diminished quality of life due to degradation of human or environmental health or adverse effects on social conditions*. The World Commission on Environment and Development in 1987 defined sustainability as the ability to "meet the needs of the present without compromising the ability of future generations to meet their own needs."

- Identify and advance shared visions for efficient and safe port access and for continued military testing, training and operations that respect and protect the ocean and coasts' ecological, social and cultural benefits.

- Identify performance measures, benchmarks, and indicators to be used to evaluate the plan's effectiveness.

- Evaluate the compatibility and conflicts between and among uses (existing and new) and identify ways of minimizing conflicts.

We believe this draft text builds from the conversation begun at the RPB meeting and meets the MidA RPB's stated desire that goals benefit the entire region, address the values of existing and proposed ocean uses, be achievable through the RPB process and maximize compatibility.[27]

Understanding that the RPB intends to complete its charter prior to defining goals,[28] we strongly recommend that the RPB add the following sentence to its charter's mission: "The RPB commits to working together to help ensure healthy ocean and coastal resources and encourage sustainable use in order to promote the well-being, prosperity and security of present and future generations."

With regards to developing principles,[29] we recommend the MidA RPB adopt the national guiding principles from the Final Recommendations as their own.[30] In particular, we strongly support using an ecosystem-based management approach,[31] ensuring open, transparent and frequent engagement with stakeholders and the public, adopting the precautionary approach,[32] and acknowledging that the process should be adaptive and flexible to accommodate new data and uses.

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[27] Draft Regional Ocean Planning Goals and Geographic Focus Ideas for the Mid-Atlantic at 4.

[28] The timeline of finalizing the charter for approval by November 1 and signature by November 15, 2013 was proposed at the meeting; it was suggested that goals would be prepared for public review in January-March 2014.

[29] Draft Regional Ocean Planning Goals and Geographic Focus Ideas for the Mid-Atlantic at 5.

[30] Final Recommendations at 48-9, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf.

[31] We recommend that you use the definition for EBM supported by more than 220 scientists and policy experts in the *Scientific Consensus Statement on Marine Ecosystem-Based Management*: Ecosystem-based management is an integrated approach to management that considers the entire ecosystem, including humans. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the services humans want and need. Ecosystem-based management differs from current approaches that usually focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors. Specifically, ecosystem-based management:

- emphasizes the protection of ecosystem structure, functioning, and key processes;
- is place-based in focusing on a specific ecosystem and the range of activities affecting it;
- explicitly accounts for the interconnectedness within systems, recognizing the importance of interactions between many target species or key services and other non-target species;
- acknowledges interconnectedness among systems, such as between air, land and sea; and
- integrates ecological, social, economic, and institutional perspectives, recognizing their strong interdependences.

McLeod, K.L., J. Lubchenco, S.R. Palumbi, and A.A. Rosenberg. 2005. *Scientific Consensus Statement on Marine Ecosystem-Based Management, at*: http://compassonline.org/?q+EBM.

[32] Precautionary approach: *a management and policy approach that ensures that the absence of information on the effect of an activity does not translate into an assumption of absence of harm.* When an activity or the cumulative impact of certain activities raises threats of harm to the environment or human health, precautionary measures should be employed, even if the full cause and effect of the activity is not scientifically or fully established.

III. Release the regional vision statement, planning goals and objectives to the public this November for review, host a series of public meetings in January to solicit feedback, and vote on a final version at a February RPB meeting.

Given the work and dialogue which has already occurred regarding the RPB's vision, goals and objectives, we believe the RPB could release a new version for public comment in November of this year instead of the proposed January 2014.[33] As previously suggested, we also strongly recommend the MidA RPB host a series of public meetings to engage the public in review of these documents, similar to the work recently completed by the Northeast RPB.[34] We suggest posting the documents early in November to allow the public sufficient review time before holding meetings in the early evening in January at a range of geographic locations. We recommend hosting meetings in Manhattan, Brooklyn, Riverhead, Freeport, Cape May, Long Branch, Atlantic City, Barnegat Light/ Toms River, Lewes, Dover, Philadelphia, Baltimore, Ocean City, Horn Point, Norfolk, Melfa and Arlington.[35] For members of the public unable to attend a meeting, the opportunity to provide comment via the RPB website should be provided.

Soliciting public comment in January would allow the RPB to address the topic at a late February meeting, for final vote and sign-off. Waiting seven months until April for the next RPB meeting would slow the RPB's work considerably.[36] Our organizations felt that there was a great degree of substance to discuss at the September meeting, and tackling stakeholder engagement and the revised documents at a February meeting promises to be a comparable level of work; an April meeting could address the work plan, including the Regional Ocean Assessment work. We also reiterate our recommendations that the RPB set a schedule of quarterly, in-person meetings and ensure that these meetings are open to the public and webcast, commit to posting all documents – including meeting notes and participant lists – no later than two weeks after the meeting, and provide email updates at least once a month so that the public can see the initiative's steady progress and their opportunities to engage in it.[37]

IV. The MidA RPB should advance a version of its stakeholder liaison model and establish a science advisory panel.

Identifying a formal mechanism to solicit regular, proactive input and recommendations, as well as feedback from and to respond to stakeholders in the region is *critical* to the RPB's success, and we appreciate the attention that members have dedicated to this vital component of the body's work. As noted in our May 30 and September 4 letters, our organizations suggest that any stakeholder body which is formed consist of representatives from at least the following sectors: environmental NGOs, recreational user groups (*e.g.*, surfing, swimming, boating, paddling, bird watching, diving), recreational fishing, commercial fishing, aquaculture, offshore wind energy, shipping and ports, coastal tourism, and marine

[33] September 25 PowerPoint at 6.
[34] Please reference the May 30 letter regarding public and stakeholder engagement.
[35] Arlington has been included in this list of locations so that the many members of the DC Metro community who enjoy spending time at the Mid-Atlantic shoreline would be able to easily attend a public meeting; however, it should not be selected at the expense of another location where the intended public audience sits squarely within one of the Mid-Atlantic RPB's included states. Ideally, the RPB will host meetings in all of these locations in order to ensure a robust public turnout from the segments of the public most likely to be impacted by the RPB's work.
[36] September 25 PowerPoint at 6.
[37] Please reference the May 30 letter regarding public and stakeholder engagement.

trades (*e.g.*, marinas, ship building). It may be appropriate to have multiple representatives per sector and to include scientists in this panel as well as in a science advisory panel. These members should be recognized leaders in their fields, represent geographic diversity, and act as a conduit for views shared by the broader sector they represent. As several of us stated at the meeting, environmental and recreational (including non-consumptive recreation) interests need to be represented separately on a stakeholder body; one voice should not serve both sectors. We further suggest that if an additional entity wants to be added to the stakeholder advisory panel, they be allowed to write a letter requesting consideration to the RPB.

We appreciate the other methods of stakeholder engagement that were noted, including presentations and having RPB members attend interested sectors' regularly scheduled meetings; however, these separate pieces would not substitute for a formal stakeholder body. The public should be invited to attend all formal stakeholder body meetings and to comment at them.

The Stakeholder Liaison Committee (Committee) recommended by MARCO addresses many of our concerns, however, we ask the RPB to explore the possibility that the Committee report directly to the RPB.[38] The Committee need not be asked to provide consensus advice, opinions or recommendations. We understand that the Federal Advisory Committee Act (FACA) process may offer benefits beyond what the Committee could, and it has been offered by some stakeholders as a possible option. We agree with both the National Ocean Council and Regional Planning Body members who have stated on the record that there is no requirement that FACA be used by the RPB for stakeholder engagement, but do not object to exploring it as a possibility. However, we recommend that this consideration move quickly, and that stakeholder engagement, including local public meetings and the formation of the Committee, move forward in the meantime.

Additionally, we recommend that the Mid-Atlantic RPB establish a science advisory panel comprised of academics and subject matter experts working throughout the region to advise it on technical matters and to provide regular and meaningful advice at all stages of the planning process. In particular, we believe the feedback from this panel will be useful for reviewing the Regional Ocean Assessment. The public should also be invited to attend all science advisory panel meetings and to offer comment at them.

Given the importance of stakeholders and the public in designing a plan to guide their ocean waters into the future, we hold that their role be called out directly in the RPB's charter, as opposed to simply the work plan, and that the RPB charter note that any additional stakeholder engagement mechanisms be added as an appendix to the document. We also suggest that the charter's bullets directing the Executive Secretariat to, for example, "Coordinate public outreach and stakeholder engagement as part of the regional planning process" and to "establish partnerships" be clarified to ensure that it is simply the execution component of this work that are administrative duties, and not the selection of the stakeholder process or partnership that is being referenced.[39]

Our organizations thank you for the opportunity to share these recommendations with you and would be happy to discuss any of these items in greater depth. We appreciate the time you have invested in this

[38] Mid-Atlantic RPB Stakeholder Engagement: Current mechanisms and options for the future at 4, 6.
[39] DRAFT Charter for the Mid-Atlantic Regional Planning Body at 6.

work and hope to see a strong plan emerge from this initiative to help protect our ocean and coasts for now and for the future.

Sincerely,

Ali Chase
Policy Analyst
Natural Resources Defense Council

Emily Woglom
Director, Government Relations
Ocean Conservancy

Van R. Reiner
President and CEO
Maryland Academy of Sciences at The Maryland Science Center

Matt Gove
Mid-Atlantic Policy Manager
Surfrider Foundation

Cindy Zipf
Executive Director
Clean Ocean Action

Tim Dillingham
Executive Director
American Littoral Society

Margo Pellegrino
Founder
Miami2Maine

Terra Pascarosa Duff
Environmental Director
TerraScapes

John F. Calvelli
Executive Vice President, Public Affairs
Wildlife Conservation Society

PUBLIC COMMENT SESSION 1 (IDEAS FOR INITIAL REGIONAL OCEAN PLANNING GOALS AND GEOGRAPHIC FOCUS)

My name is Brent Greenfield, and I am pleased to make the following comments on behalf of the National Ocean Policy Coalition regarding the ideas put forth for initial Mid-Atlantic regional ocean planning goals and geographic focus. While more extensive comments on user group engagement will be made following the stakeholder engagement discussion, the following suggestions are prefaced with this caveat.

Although appreciated, opportunities such as today's meeting and last month's webinar cannot substitute for the information and perspective that would be gained through the formal engagement of commercial and recreational interests through direct representation on the Regional Planning Body or, at minimum, a formal Stakeholder Advisory Committee.

By proceeding in the absence of such engagement, even at this early stage, the Mid-Atlantic regional ocean planning process is threatening to inadequately reflect the input and perspectives of the regions' most significant existing and future potential economic contributors and result in unintended and adverse consequences.

With that as context, the initial draft goals should be modified in at least several respects.

First, in addition to detailing the meaning of "responsible," the goal to facilitate responsible renewable energy development should be revised to state "facilitate responsible energy development." This is necessary to reflect that certain areas represented on this body support offshore conventional and other types of energy activities, as mentioned this afternoon, as well as renewable energy development. In Virginia, for example, there is bipartisan support both at the Statehouse and in Congress for both types of development. For the same reason, the sub-bullet for the first principle that references "enhancing efficiencies in renewable energy siting" should be revised to "enhancing efficiencies in energy siting."

In addition, the goal to "ensure access for existing and traditional uses" should be revised to state "ensure access for existing, traditional, and future potential uses." This modification is needed to acknowledge the importance of ensuring that the region can obtain the significant economic and societal benefits that could result from access to new as well as existing commercial and recreational activities.

Finally, especially given the continued challenging economic environment, goals to promote opportunities for job creation and economic growth while maintaining existing jobs, as well as to promote infrastructure revitalization, should be added to the list.

As to the principles, in addition to the recommendation just made, the final bullet should be revised to state that the use of the "best existing and new ocean data" will require utilization of sound science and compliance with federal data quality laws and regulations.

With regard to the process and timeline for further developing and finalizing regional goals, such timelines must be based on the availability of sound science, data, and information, and provide commercial and recreational interests with a sufficient and reasonable opportunity to actively and directly participate in providing guidance and advice. More detailed comments on the proposed 5-year timeline will be provided during the public comment session on operational considerations.

Thank you for the opportunity to comment.

PUBLIC COMMENT SESSION 2 (STAKEHOLDER ENGAGEMENT)

My name is Brent Greenfield, and I am pleased to make the following comments on behalf of the National Ocean Policy Coalition regarding Mid-Atlantic RPB stakeholder engagement.

According to the most recent federal data, the Mid-Atlantic states comprised of Delaware, New Jersey, New York, Maryland, Pennsylvania, and Virginia generated over $3 trillion in economic output in 2012. As RPB activities could result in impacts to some of this regions' most significant economic contributors, it is vital that these and other critical interests that could generate additional economic output in the future not be shut out of the process and formal engagement opportunities.

An adequate seat at the table for user groups should mean more than just an opportunity to comment, attend a listening session, or complete a survey. Rather, the very groups who could be impacted by actions that might be taken by this body should be given a meaningful and active voice and role in this group's activities, with their input helping to guide a truly collaborative process and outcome.

Efforts to achieve a collaborative process and outcome can be enhanced and furthered if consensus means that such activities have the support and backing of the commercial and recreational interests that support or seek to support jobs and economic activity in the region. These groups represent the human elements that could be impacted, and they too should have a seat at the table with their governmental counterparts and be directly represented on this body.

In the event that the regrettable decision to exclude non-government representatives from RPB membership is left unchanged, other mechanisms for user group engagement including the establishment of a formal Federal Advisory Committee should be implemented *before the RPB conducts any further activities*.

While well-intended, efforts to create something short of a formal Federal Advisory Committee, such as the establishment of a Stakeholder Liaison Committee that would communicate with a 3rd party rather than the RPB itself, would be insufficient to ensure an outcome that adequately reflects a collaborative, consensus-based result and the critical input and perspectives of the commercial and recreational communities.

The RPB's stakeholder working group has noted that the RPB currently lacks the capacity to support a formal Federal Advisory Committee, and that the RPB "must ensure that the stakeholder engagement strategy chosen does not trigger" the Federal Advisory Committee Act. In this case, the RPB must embrace rather than avoid the applicability of the Federal Advisory Committee Act.

To be sure, the challenges of operating with limited resources are understandable. However, if circumstances are such that the RPB lacks the capacity to establish a formal Stakeholder Advisory

Committee under the Federal Advisory Committee Act, the RPB seemingly lacks the ability and should not endeavor to engage in this effort.

Thank you for the opportunity to comment.

PUBLIC COMMENT SESSION 3 (DATA AND INFORMATION)

My name is Brent Greenfield, and I am pleased to make the following comments on behalf of the National Ocean Policy Coalition regarding the Mid-Atlantic Regional Council on the Ocean's Data Portal and upcoming regional ocean assessment as capacities to support regional ocean planning.

Data and information used by this body, including any regional ocean assessments or specific components of such assessments, must be based on sound science, comply with strict integrity safeguards, laws, protocols, and requirements, include the socioeconomic component, and ensure that all of the region's potential economic uses and resources are accounted for. This must include data for those uses and resources that although not currently being utilized could be put to use in the future.

As one example, and as mentioned yesterday, there is bipartisan support in Virginia at both at the Statehouse and in Congress for conventional as well as renewable energy development off the Virginia coast. Seismic data for conventional energy resources in this area is based on data that was collected in the 1980's, and access is now being sought to obtain new seismic data using advanced technologies.

Thus, data must not be utilized to inform RPB or individual agency activities unless and until timely and relevant datasets for *all* potential commercial and recreational uses are available.

One final point is that the working group's report on MARCO products and services mentions that a regional ocean assessment "should be guided by and reflect ocean planning priorities and specific ecosystem management objectives for the region..." Such priorities and objectives should be developed based on meaningful stakeholder engagement and the input and advice that results from such engagement.

Thank you for the opportunity to comment.

PUBLIC COMMENT SESSION 4 (OPERATIONAL CONSIDERATIONS)

My name is Brent Greenfield, and I am pleased to make the following comments on behalf of the National Ocean Policy Coalition regarding operational considerations related to the regional ocean planning timeline and associated products and the model RPB Charter.

As stated yesterday, by proceeding in the absence of direct commercial and recreational representation on the RPB or at least an opportunity for formal engagement through a Stakeholder Advisory Committee, even in discussions about things like *potential* goals, timelines, and actions, the Mid-Atlantic regional ocean planning process is already threatening to inadequately reflect the input and perspectives of the regions' most significant existing and future potential economic contributors and result in unintended and adverse consequences.

Like the discussion about goals and geographic focus, stakeholder engagement, and data and information, the discussion about timelines and associated products would benefit tremendously from

this type of formal engagement, and such mechanisms should be in place before these discussions continue.

With that as context, it is also important to note that existing and future potential users of ocean and coastal resources in the Mid-Atlantic already must navigate a wide array of state and federal programs to carry out their existing or proposed activities. At the same time, they are confronting challenging economic circumstances that also demand their constant attention, time, and resources.

Timelines and decisions related to goals, objectives, and actions must account for these circumstances and be based on the availability and application of sound science, data, and information.

In addition, and as stated previously, if commercial and recreational interests are not directly represented on the RPB and circumstances are such that the RPB lacks the capacity to establish a formal Stakeholder Advisory Committee, then the RPB seemingly lacks the ability and should not endeavor to undertake the development of a formal regional ocean plan or other products whose use could result in impacts to commercial and recreational interests and the jobs and communities that they support or seek to support.

Any timeline for Mid-Atlantic regional ocean planning must take this into account, as well as ensure that the public at large and all groups have adequate time and opportunity to review and provide input on RPB materials in advance of meetings and actions.

Timelines must be developed based on the time that is needed to identify, consider, and implement goals and any related actions that are ultimately agreed upon following significant user group and public engagement efforts. Practical and achievable timelines cannot be ascertained before such engagement has taken place and such goals and related actions have been identified.

As to the draft model Charter, in addition to providing for direct commercial and recreational sector membership, local officials should also be provided with opportunities to serve directly on the RPB. With regard to commercial and recreational interests, at minimum, the Charter should provide for formal and direct engagement through a Federal Advisory Committee.

The Charter should also make clear that any decision not to address a particular use in the region is not an indication of opposition to such use occurring in the region, and that such a decision is not to be used or interpreted by any agency in a manner that would in any way restrict or prohibit such use from being authorized to take place in the region.

Other areas that the draft Charter need to address include the following:

- The terms and processes under which funding would be accepted by outside groups;
- How exactly marine planning would be "carried out consistent with and under the authority of existing statutes, regulations, and authorized programs," and which activities, regulations, statutes, and programs are implicated; and
- How agencies would "adhere to the plan and/or other [RPB] products"

Thank you for the opportunity to comment.

American Littoral Society ● Clean Ocean Action ● Maryland Academy of Sciences at The Maryland Science Center ● Maryland Coastal Bays Program ● Miami2Maine ● Natural Resources Defense Council ● New Jersey Sierra Club ● Ocean Conservancy ● Surfrider Foundation ● TerraScapes ● Wildlife Conservation Society

List of signers updated on November 4, 2013

October 8, 2013

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Submitted electronically

Re: <u>The Mid-Atlantic Regional Planning Body's Inaugural Meeting and Draft Documents</u>

Dear Ms. Bornholdt, Ms. Schultz, and Mr. Smith:

On behalf of the organizations listed above and our millions of members and activists, we wish to congratulate you and the other Mid-Atlantic Regional Planning Body (MidA RPB or RPB) representatives for holding your inaugural public meeting on September 24 and 25. Several of us were able to attend, and all of us are closely following this process and reviewing the RPB's draft materials.[1] We offer our recommendations below regarding the RPB's proposed vision statement, goals and objectives, charter and mechanisms for increased stakeholder engagement.[2] We appreciate the

[1] September 16, 2013 meeting materials that were posted online (at http://www.boem.gov/Environmental-Stewardship/Mid-Atlantic-Regional-Planning-Body/MidA-RPB-Materials.aspx) and that will be addressed in this letter are: Draft Regional Ocean Planning Goals and Geographic Focus Ideas for the Mid-Atlantic, Mid-Atlantic RPB Stakeholder Engagement: Current mechanisms and options for the future, DRAFT Charter for the Mid-Atlantic Regional Planning Body, Mid-Atlantic Regional Council on the Ocean Proposed Products and Services for use by the Mid-Atlantic Regional Planning Body and Mid-Atlantic Regional Ocean Planning 5 year Timeline: DRAFT for RPB Discussion. Additionally, this letter refers to a September 25 PowerPoint which detailed possible pieces of a vision statement and revised goals, possible objectives and a timeline for the goals.

[2] This letter builds on the letters several of our organizations submitted to the MidA RPB on May 30 and September 4, 2013.

opportunity to engage in this regional ocean planning process from the start and hope to see it result in the development of a plan that protects, maintains and restores the health of the Mid-Atlantic's valuable ocean and coastal resources and has a goal of achieving sustainable use.

I. By 2016, the MidA RPB should produce a final regional ocean plan.

Our organizations are concerned that RPB members have not embraced development of a regional ocean plan, also known as a coastal and marine spatial plan (CMS Plan), as part of their overarching mission. The body's work as envisioned by the National Ocean Policy is to extend beyond that of acting as a shared forum to bring a variety of federal, state and tribal actors together, with input from stakeholders, technical experts and the public, to coordinate and discuss future ocean development. As stated in the *Final Recommendations of the Interagency Ocean Policy Task Force* (Final Recommendations): "Regional planning bodies would function as convening and planning bodies that comprise Federal, State, and tribal representatives responsible for implementing existing authorities to create a process, *and ultimately a plan*, to better apply such existing authorities to achieve agreed upon regional goals and objectives."[3] We recommend that the mission and member commitments sections of the RPB's charter[4] indicate a desire on behalf of all parties to use the ocean planning vehicle to advance shared priorities and produce a plan.

Moreover, federal RPB members are required under Executive Order 13547 (Executive Order or Order) to "participate in the process for coastal and marine spatial planning and comply with [National Ocean] Council certified coastal and marine spatial *plans*."[5] The draft RPB charter's member commitment statement that "The Members agree, to the extent *practicable* and consistent with their underlying authorities, to participate in the process for marine planning…"[6] falls short of the Order's call for members of the federal family to develop and comply with plans "to the fullest extent consistent with applicable law"[7] and, accordingly, the statement should be revised by inserting "fullest" before "extent" and removing the word "practicable." Further, we recommend that members use all National Ocean Policy documents in developing their plan – there is no need to reference only the National Ocean Council's *Marine Planning Handbook*.[8]

The charter should also note the importance of conducting the Regional Ocean Assessment which was described at the meeting.[9] Currently, the capacity assessment and the work plan need are defined in the charter's mission, but the Regional Ocean Assessment which will drive the heart of the planning work is not listed.[10] We also suggest that the charter contain an upfront commitment to use the best available data to plan with and that the body commit to developing an iterative, adaptive process to ensure that the Regional Ocean Assessment and the plan itself remain living documents.

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[3] Final Recommendations at 62, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf. Emphasis added.

[4] DRAFT Charter for the Mid-Atlantic Regional Planning Body at 2 and 6.

[5] Executive Order 13547, *available at* http://www.whitehouse.gov/the-press-office/executive-order-stewardship-ocean-our-coasts-and-great-lakes. Emphasis added.

[6] DRAFT Charter for the Mid-Atlantic Regional Planning Body at 5. Emphasis added.

[7] Executive Order 13547, *available at* http://www.whitehouse.gov/the-press-office/executive-order-stewardship-ocean-our-coasts-and-great-lakes.

[8] DRAFT Charter for the Mid-Atlantic Regional Planning Body at 5.

[9] Our organizations were pleased to see discussion of the Regional Ocean Assessment at the meeting and intend to submit separate comments offering our recommendations on this work.

[10] DRAFT Charter for the Mid-Atlantic Regional Planning Body at 2.

In order to ensure that the time and effort invested in this process is undertaken during a supportive Administration, we further recommend that the MidA RPB match the three-year planning schedule set out by the Northeast Regional Planning Body (Northeast RPB), which calls for a final product to be submitted to the National Ocean Council for approval in 2015.[11] We recommend that the MidA RPB submit a draft plan to the National Ocean Council for review in 2015, with the goal of sign-off on the document in early 2016. The Mid-Atlantic region is a diverse region with a fair number of competing uses, but there are shared Mid-Atlantic Regional Council on the Ocean (MARCO) commitments that could be addressed – at least in part – through marine planning, for example: "Promote the identification and protection of important ocean habitats, including sensitive and unique offshore areas"; "Collaborate on a regional approach to support the sustainable development of renewable energy in offshore areas;" and "Prepare Mid-Atlantic communities for the effects of climate change on coastal and ocean resources."[12] Selecting a subset of issues to tackle through this process and adhering to a tight schedule to advance these priorities would allow the MidA RPB members to achieve a first CMS Plan, the success of which could then be built off of for future iterations of a regional ocean plan. Having a plan in place as the next generation of wind projects is developed, as short sea shipping takes off and as decisions continue to be made regarding the location and extent of offshore sand mining makes great sense.

II. Propose a regional vision statement, planning goals and objectives and a charter which prioritize ocean health and encourage sustainable use.

Our organizations' encouragement and support for the RPB stems from the understanding that this process will lead to improved ocean health and sustainable ocean use for this and future generations. The Executive Order calls for action to help "protect, maintain, and restore the health and biological diversity of ocean, coastal, and Great Lakes ecosystems and resources"; "improve the resiliency of ocean, coastal, and Great Lakes ecosystems, communities, and economies"; and "bolster the conservation and sustainable uses of land in ways that will improve the health of ocean, coastal, and Great Lakes ecosystems".[13] The Final Recommendations further state:

> *[Coastal and marine spatial planning or CMSP] is intended to improve ecosystem health and services by planning human uses in concert with the conservation of important ecological areas, such as areas of high productivity and biological diversity; areas and key species that are critical to ecosystem function and resiliency; areas of spawning, breeding, and feeding; areas of rare or functionally vulnerable marine resources; and migratory corridors. Enhanced ecosystem services and benefits can be attained through CMSP because they are centrally incorporated into the CMS Plan as desired outcomes of the process and not just evaluated in the context of individual Federal or State agency action. CMSP allows for a comprehensive look at multiple sector demands which would provide a more complete evaluation of cumulative effects. This ultimately is intended to result in protection of areas that are essential for the resiliency and maintenance of*

[11] *See*, for example, page 63 of the Northeast RPB's April 11-12, 2013 meeting materials: http://northeastoceancouncil.org/wp-content/uploads/2013/04/Meeting-Materials-MEMBER-NE-RPB-April-11-12-Meeting-Materials.pdf.

[12] Mid-Atlantic Regional Council on the Ocean Proposed Products and Services for use by the Mid-Atlantic Regional Planning Body at 1.

[13] Executive Order 13547, *available at* http://www.whitehouse.gov/the-press-office/executive-order-stewardship-ocean-our-coasts-and-great-lakes.

healthy ecosystem services and biological diversity, and to maximize the ability of marine resources to continue to support a wide variety of human uses."[14]

As such, we believe it critical that the MidA RPB's goals clearly indicate the protection and enhancement of ocean health as a desired outcome of the plan. Our organizations have previously suggested the MidA RPB adopt the Northeast RPB's draft healthy ocean and coastal ecosystems goal to:

> Develop a planning framework to protect, restore, and maintain healthy ocean and coastal ecosystems that provide social, cultural, spiritual, and economic benefits. Account for changing environmental conditions and new information as it becomes available. Respect the intrinsic value of the ocean, its biodiversity, and act as its steward/caretaker, recognizing humans as part of the ecosystem.[15]

While regional differences between the Northeast and the Mid-Atlantic exist, both regions understand the value that a healthy ocean system brings not only to ocean wildlife, but to all of us who depend on ocean resources to continue to provide the food, jobs and recreation we want and need.[16] We appreciate that this concept is reflected in the MidA RPB's revised draft goal of "Stewardship, protect and restore ecosystem health and functionality, account for key habitat,"[17] but believe the statement must go further to express the fundamental importance of ecosystem health. Also, we would want to see as a goal protection for key habitats, not just "accounting" for key habitats.

Our organizations offer the following vision statement and goals, based on the Executive Order, the Northeast RPB's draft goals and the September 25 PowerPoint, for consideration:

Vision Statement:
To ensure healthy,[18] resilient and resistant,[19] safe and productive Mid-Atlantic ocean and coastal resources so as to promote the well-being, prosperity and security of present and future generations.

Goals and Objectives:

1. Protect, maintain and restore the natural biological, chemical and physical health and integrity of the region's ocean and coastal ecosystems.[20] Respect the intrinsic value of the ocean, its biodiversity,[21] and act as its steward, recognizing humans as part of the ecosystem

[14] Final Recommendations at 44, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf. Emphasis added.
[15] *Available at* http://northeastoceancouncil.org/wp-content/uploads/2012/11/Draft-Goals-for-Public-Review.pdf.
[16] Please see the September 4 letter for examples of the economic value healthy oceans provide.
[17] September 25 PowerPoint at 4.
[18] Some have questioned whether definitions exist for terms like "healthy ecosystem" and "biodiversity." We have provided definitions for some key terms pulled from scientific literature and other sources and suggest that incorporating definitions within the RPB's documents may be one way to address potential confusion. For example, we recommend the following definition for ecosystem health: *the ability of an ecosystem in ocean and coastal waters to support and maintain patterns, important processes, and productive, sustainable, and resilient communities of organisms, having a species composition, diversity, and functional organization resulting from the natural habitat of the region, such that it is capable of supporting a variety of activities and providing a complete range of ecological benefits.*
[19] Resilience: *ability to recover from perturbations/stressors.* Resistance: *ability to resist perturbations/stressors*.
[20] Ecosystem: *a biogeographical and geophysical unit including species and habitat.*
[21] Biodiversity: *variation of life forms within a given habitat or ecosystem.*

and healthy marine resources as providing valuable ecosystem services,[22] social and cultural benefits, and support for vibrant ocean and coastal communities.

Possible objectives:

- Conduct a Regional Ocean Assessment based on the best available science and existing local and traditional knowledge[23] to identify our ocean's important features, such as the variety of seafloor habitats and the populations of native, threatened, and endangered species, and assess their current conditions.

- As part of the Regional Ocean Assessment, develop an assessment of the region's key socio-economic attributes, including the current and emerging human uses and characteristics of the region's culture and economy.

- Identify and protect important ecological functions,[24] areas and wildlife in order to ensure the system's resilience and its ability to continue to support existing and traditional human uses.

- Develop a series of ecological indicators[25] and regularly assess the natural system's baseline health to better understand changing environmental conditions and the impacts from increased human activities.

- Account for new information on environmental health and potential ocean uses as it becomes available and plan accordingly.

2. Develop a planning process which advances sustainable development[26] of the region's ocean and coastal resources. Respect the gains we have made in managing the region's ocean health and maximize compatibility among past, current and future uses of ocean and coastal waters while minimizing user conflict and impacts to environmental and cultural resources. Ensure meaningful and frequent opportunities for stakeholder and public engagement in management decisions that will affect their lives and livelihoods.

   Possible objectives:

   - Collaborate on a regional approach to support the sustainable development of offshore renewable energy and sand resources.

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[22] Ecosystem service: *services provided to humans by ecosystems*, such as clean water, food and recreational opportunities.
[23] Traditional and local knowledge: *empirical knowledge, including ways of perceiving and understanding the world, grounded in practical experience, often part of the cultural heritage of a region and passed down through generations.*
[24] Ecosystem function*: functions provided by the ecosystem, elements of the ecosystem, or ecosystem interactions*, such as nutrient cycling.
[25] Ecosystem indicator: *a variable that provides information that can be used as a proxy for other variables that are more difficult to assess, particularly in complex systems.*
[26] Sustainability: *the capacity to endure and remain diverse and productive over time, without diminished quality of life due to degradation of human or environmental health or adverse effects on social conditions*. The World Commission on Environment and Development in 1987 defined sustainability as the ability to "meet the needs of the present without compromising the ability of future generations to meet their own needs."

- Identify and advance shared visions for efficient and safe port access and for continued military testing, training and operations that respect and protect the ocean and coasts' ecological, social and cultural benefits.

- Identify performance measures, benchmarks, and indicators to be used to evaluate the plan's effectiveness.

- Evaluate the compatibility and conflicts between and among uses (existing and new) and identify ways of minimizing conflicts.

We believe this draft text builds from the conversation begun at the RPB meeting and meets the MidA RPB's stated desire that goals benefit the entire region, address the values of existing and proposed ocean uses, be achievable through the RPB process and maximize compatibility.[27]

Understanding that the RPB intends to complete its charter prior to defining goals,[28] we strongly recommend that the RPB add the following sentence to its charter's mission: "The RPB commits to working together to help ensure healthy ocean and coastal resources and encourage sustainable use in order to promote the well-being, prosperity and security of present and future generations."

With regards to developing principles,[29] we recommend the MidA RPB adopt the national guiding principles from the Final Recommendations as their own.[30] In particular, we strongly support using an ecosystem-based management approach,[31] ensuring open, transparent and frequent engagement with stakeholders and the public, adopting the precautionary approach,[32] and acknowledging that the process should be adaptive and flexible to accommodate new data and uses.

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[27] Draft Regional Ocean Planning Goals and Geographic Focus Ideas for the Mid-Atlantic at 4.

[28] The timeline of finalizing the charter for approval by November 1 and signature by November 15, 2013 was proposed at the meeting; it was suggested that goals would be prepared for public review in January-March 2014.

[29] Draft Regional Ocean Planning Goals and Geographic Focus Ideas for the Mid-Atlantic at 5.

[30] Final Recommendations at 48-9, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf.

[31] We recommend that you use the definition for EBM supported by more than 220 scientists and policy experts in the *Scientific Consensus Statement on Marine Ecosystem-Based Management*: Ecosystem-based management is an integrated approach to management that considers the entire ecosystem, including humans. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the services humans want and need. Ecosystem-based management differs from current approaches that usually focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors. Specifically, ecosystem-based management:

- emphasizes the protection of ecosystem structure, functioning, and key processes;
- is place-based in focusing on a specific ecosystem and the range of activities affecting it;
- explicitly accounts for the interconnectedness within systems, recognizing the importance of interactions between many target species or key services and other non-target species;
- acknowledges interconnectedness among systems, such as between air, land and sea; and
- integrates ecological, social, economic, and institutional perspectives, recognizing their strong interdependences.

McLeod, K.L., J. Lubchenco, S.R. Palumbi, and A.A. Rosenberg. 2005. *Scientific Consensus Statement on Marine Ecosystem-Based Management, at*: http://compassonline.org/?q+EBM.

[32] Precautionary approach: *a management and policy approach that ensures that the absence of information on the effect of an activity does not translate into an assumption of absence of harm.* When an activity or the cumulative impact of certain activities raises threats of harm to the environment or human health, precautionary measures should be employed, even if the full cause and effect of the activity is not scientifically or fully established.

III. Release the regional vision statement, planning goals and objectives to the public this November for review, host a series of public meetings in January to solicit feedback, and vote on a final version at a February RPB meeting.

Given the work and dialogue which has already occurred regarding the RPB's vision, goals and objectives, we believe the RPB could release a new version for public comment in November of this year instead of the proposed January 2014.[33] As previously suggested, we also strongly recommend the MidA RPB host a series of public meetings to engage the public in review of these documents, similar to the work recently completed by the Northeast RPB.[34] We suggest posting the documents early in November to allow the public sufficient review time before holding meetings in the early evening in January at a range of geographic locations. We recommend hosting meetings in Manhattan, Brooklyn, Riverhead, Freeport, Cape May, Long Branch, Atlantic City, Barnegat Light/ Toms River, Lewes, Dover, Philadelphia, Baltimore, Ocean City, Horn Point, Norfolk, Melfa and Arlington.[35] For members of the public unable to attend a meeting, the opportunity to provide comment via the RPB website should be provided.

Soliciting public comment in January would allow the RPB to address the topic at a late February meeting, for final vote and sign-off. Waiting seven months until April for the next RPB meeting would slow the RPB's work considerably.[36] Our organizations felt that there was a great degree of substance to discuss at the September meeting, and tackling stakeholder engagement and the revised documents at a February meeting promises to be a comparable level of work; an April meeting could address the work plan, including the Regional Ocean Assessment work. We also reiterate our recommendations that the RPB set a schedule of quarterly, in-person meetings and ensure that these meetings are open to the public and webcast, commit to posting all documents – including meeting notes and participant lists – no later than two weeks after the meeting, and provide email updates at least once a month so that the public can see the initiative's steady progress and their opportunities to engage in it.[37]

IV. The MidA RPB should advance a version of its stakeholder liaison model and establish a science advisory panel.

Identifying a formal mechanism to solicit regular, proactive input and recommendations, as well as feedback from and to respond to stakeholders in the region is *critical* to the RPB's success, and we appreciate the attention that members have dedicated to this vital component of the body's work. As noted in our May 30 and September 4 letters, our organizations suggest that any stakeholder body which is formed consist of representatives from at least the following sectors: environmental NGOs, recreational user groups (*e.g.*, surfing, swimming, boating, paddling, bird watching, diving), recreational fishing, commercial fishing, aquaculture, offshore wind energy, shipping and ports, coastal tourism, and marine

[33] September 25 PowerPoint at 6.
[34] Please reference the May 30 letter regarding public and stakeholder engagement.
[35] Arlington has been included in this list of locations so that the many members of the DC Metro community who enjoy spending time at the Mid-Atlantic shoreline would be able to easily attend a public meeting; however, it should not be selected at the expense of another location where the intended public audience sits squarely within one of the Mid-Atlantic RPB's included states. Ideally, the RPB will host meetings in all of these locations in order to ensure a robust public turnout from the segments of the public most likely to be impacted by the RPB's work.
[36] September 25 PowerPoint at 6.
[37] Please reference the May 30 letter regarding public and stakeholder engagement.

trades (*e.g.*, marinas, ship building). It may be appropriate to have multiple representatives per sector and to include scientists in this panel as well as in a science advisory panel. These members should be recognized leaders in their fields, represent geographic diversity, and act as a conduit for views shared by the broader sector they represent. As several of us stated at the meeting, environmental and recreational (including non-consumptive recreation) interests need to be represented separately on a stakeholder body; one voice should not serve both sectors. We further suggest that if an additional entity wants to be added to the stakeholder advisory panel, they be allowed to write a letter requesting consideration to the RPB.

We appreciate the other methods of stakeholder engagement that were noted, including presentations and having RPB members attend interested sectors' regularly scheduled meetings; however, these separate pieces would not substitute for a formal stakeholder body. The public should be invited to attend all formal stakeholder body meetings and to comment at them.

The Stakeholder Liaison Committee (Committee) recommended by MARCO addresses many of our concerns, however, we ask the RPB to explore the possibility that the Committee report directly to the RPB.[38] The Committee need not be asked to provide consensus advice, opinions or recommendations. We understand that the Federal Advisory Committee Act (FACA) process may offer benefits beyond what the Committee could, and it has been offered by some stakeholders as a possible option. We agree with both the National Ocean Council and Regional Planning Body members who have stated on the record that there is no requirement that FACA be used by the RPB for stakeholder engagement, but do not object to exploring it as a possibility. However, we recommend that this consideration move quickly, and that stakeholder engagement, including local public meetings and the formation of the Committee, move forward in the meantime.

Additionally, we recommend that the Mid-Atlantic RPB establish a science advisory panel comprised of academics and subject matter experts working throughout the region to advise it on technical matters and to provide regular and meaningful advice at all stages of the planning process. In particular, we believe the feedback from this panel will be useful for reviewing the Regional Ocean Assessment. The public should also be invited to attend all science advisory panel meetings and to offer comment at them.

Given the importance of stakeholders and the public in designing a plan to guide their ocean waters into the future, we hold that their role be called out directly in the RPB's charter, as opposed to simply the work plan, and that the RPB charter note that any additional stakeholder engagement mechanisms be added as an appendix to the document. We also suggest that the charter's bullets directing the Executive Secretariat to, for example, "Coordinate public outreach and stakeholder engagement as part of the regional planning process" and to "establish partnerships" be clarified to ensure that it is simply the execution component of this work that are administrative duties, and not the selection of the stakeholder process or partnership that is being referenced.[39]

Our organizations thank you for the opportunity to share these recommendations with you and would be happy to discuss any of these items in greater depth. We appreciate the time you have invested in this

[38] Mid-Atlantic RPB Stakeholder Engagement: Current mechanisms and options for the future at 4, 6.
[39] DRAFT Charter for the Mid-Atlantic Regional Planning Body at 6.

work and hope to see a strong plan emerge from this initiative to help protect our ocean and coasts for now and for the future.

Sincerely,

Ali Chase
Policy Analyst
Natural Resources Defense Council

Emily Woglom
Director, Government Relations
Ocean Conservancy

Van R. Reiner
President and CEO
Maryland Academy of Sciences at The Maryland Science Center

Matt Gove
Mid-Atlantic Policy Manager
Surfrider Foundation

Cindy Zipf
Executive Director
Clean Ocean Action

Tim Dillingham
Executive Director
American Littoral Society

Margo Pellegrino
Founder
Miami2Maine

Terra Pascarosa Duff
Environmental Director
TerraScapes

John F. Calvelli
Executive Vice President, Public Affairs
Wildlife Conservation Society

Dave Wilson
Executive Director
Maryland Coastal Bays Program

Jeff Tittel
Director
New Jersey Sierra Club

November 8, 2013

Ms. Maureen Bornholdt
Mid-Atlantic Regional Planning Body Federal Co-Lead
Renewable Energy Program Manager
Bureau of Ocean Energy Management
1849 C Street, NW
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Ms. Gwynne Schultz
Mid-Atlantic Regional Planning Body State Co-Lead
Senior Coastal and Ocean Policy Advisor
Maryland Department of Natural Resources
580 Taylor Avenue
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Mr. Gerrod Smith
Mid-Atlantic Regional Planning Body Tribal Co-Lead
Chief Financial Officer/Natural Resource Advisor
Shinnecock Indian Nation
PO Box 5006
Southampton, NY 11969

Submitted Electronically via MidAtlanticRPB@boem.gov

RE: Mid-Atlantic Regional Planning Body Activities

Dear Ms. Bornholdt, Ms. Schultz, and Mr. Smith:

The National Ocean Policy Coalition ("Coalition") is an organization of diverse interests representing sectors and entities that support tens of millions of jobs, contribute trillions of dollars to the U.S. economy, and seek to ensure that actions under the National Ocean Policy are implemented in a manner that best benefits the National interest, including protection of the commercial and recreational value of the oceans, marine-related natural resources, and terrestrial lands of the United States.

At its inaugural in-person meeting in September, the Mid-Atlantic Regional Planning Body ("RPB") discussed the development of stakeholder engagement mechanisms, goals and principles, data and information sources, timelines, and an RPB Charter. As it considers next steps for these vital areas, the Coalition provides the comments below for the RPB's consideration.

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I. User Group Engagement

In 2012, the six states located in the RPB's geographic area generated over $3 trillion in economic output. To ensure that the RPB's activities are well-informed and do not lead to unintended consequences, it is critical that the region's existing and future potential economic contributors have meaningful opportunities to directly and formally engage the RPB at every stage. Public comment periods, listening sessions, surveys, a single "ombudsman" seat on the RPB for non-government interests, and liaison committees that interact with third parties are not sufficiently meaningful to ensure a collaborative outcome aimed at securing the buy-in, support, and consensus of concerned regional economic stakeholders. Limiting user group engagement to such insufficient mechanisms increases the likelihood that any resulting RPB products may unnecessarily harm the region's economy, communities, and livelihoods.

The Coalition therefore respectfully reiterates its request that the RPB -- before it conducts further activities -- provide commercial and recreational interests with a meaningful opportunity to participate directly on the RPB or at minimum through a formal Stakeholder Advisory Committee ("SAC") established under the Federal Advisory Committee Act ("FACA"). Proceeding otherwise will further erode confidence in this process and increase the likelihood that it ultimately results in adverse impacts.

Lack of resources is not a compelling reason to avoid creation of a Federal Advisory Committee ("FAC"). As defined in 5 U.S.C. App. 2, § 3, a FAC is any committee, board, commission, council, conference, panel, task force, or other similar group, which is established by statute, or established or utilized by the President or by an agency official, for the purpose of obtaining ***advice or recommendations*** for the President or one or more agencies or officers of the Federal Government (but excluding any committee that is comprised wholly of officers or employees of the Federal Government). Having the Mid-Atlantic Regional Council on the Ocean serve as a conduit between a liaison committee and the RPB in an attempt to avoid FACA laws is ill-advised and will not serve to meet the needs of a diverse stakeholder group.

In the event that the RPB continues to pursue the establishment of a liaison committee, user groups and the public must first be provided with an adequate opportunity to review and comment on its proposed establishment, structure, and selection process.

II. Goals and Principles

As the Coalition stated at the RPB's September meeting, goals for the Mid-Atlantic region should promote job creation, economic growth, infrastructure revitalization, and access for both existing and future uses. All regional stakeholders, including commercial and recreational interests, must have meaningful opportunities to shape these goals.

To account for the fact that certain areas represented on the RPB support all forms of offshore energy production, energy-specific references should also not embrace one form of production over another. The exclusion thus far of references to certain types of energy exploration and production activities is troubling. In addition, the RPB must clarify the meaning of "responsible" in describing certain uses and

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"values" in examining existing and proposed uses of the ocean, since any activities that follow applicable laws, regulations, and best practices can be considered responsible.

As to the initial idea for a principle to "[u]se best existing and new ocean data to provide shared scientific foundation for ocean planning and improve decision-making," the RPB should also make clear that any data used must be grounded in sound science and compliant with all relevant federal data quality laws, regulations, and standards.

III. Data and Information

As stated above, data and information used by the RPB must be based on sound science and compliant with all relevant federal data quality laws, regulations, and standards. In addition, any data and information that is utilized should include the socioeconomic component and must account for all of the region's potential economic uses. Up-to-date and relevant data for all potential commercial and recreational uses, as identified by all stakeholders in the region, must be available before the RPB or individual RPB member entities engage in activities or make decisions concerning access to or use of the region's resources. Moving forward in the absence of such data will set the stage for additional unintended conflicts and consequences.

In addition, in the event that a Mid-Atlantic regional ocean assessment is conducted, it must be guided by priorities and objectives that are developed based on meaningful stakeholder engagement and the input and advice that results from such engagement.

IV. Operational Considerations

As mentioned at the outset, mechanisms for the formal and direct engagement of commercial and recreational interests should be in place before the RPB conducts further activities, including discussions about potential goals, objectives, and timelines.

In addition, timelines and decisions related to goals, objectives, and actions must be based on the availability and application of sound science, data, and information, and ensure that all groups and the public at large have adequate time and opportunity to review and inform any such timelines and decisions before they are adopted. Also, limited agency resources must be considered, and great care must be taken to ensure that agency core missions and existing focus areas are not hindered by the pursuit of new actions under this initiative.

Decisions and timelines must also be realistic and account for the fact that existing and future potential Mid-Atlantic ocean and coastal resource users already commit significant amounts of time and resources to navigate through a wide array of governmental statute-driven processes in order to operate or obtain approval for proposed actions.

Timelines must also be developed based on the time that is needed to identify, consider, and implement goals and any related actions that are ultimately agreed upon following significant user group and public

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engagement efforts. Practical and achievable timelines cannot be ascertained before such engagement has taken place and such goals and related actions have been identified.

As to the RPB's Charter, it should provide for direct commercial and recreational sector and local government RPB membership. At minimum, the Charter should require the establishment of a Stakeholder Advisory Committee established under the Federal Advisory Committee Act.

In addition, the Charter should state that any decision not to address a particular use is not an indication of opposition to such use, and that such a decision is not to be interpreted or used by any entity in a manner that would in any way restrict or prohibit such use. The RPB should also clearly state that in cases where a particular use is not addressed by the RPB, agencies remain free to make decisions about such an activity without being bound by the contents of any RPB products.

Lastly, the Charter should also provide answers to unresolved issues, such as the terms and processes under which funding might be accepted by outside groups, how marine planning would be "carried out consistent with and under the authority of existing statutes, regulations, and authorized programs" that involve diverse purposes, scopes, and activities (and which activities, regulations, statutes, and programs are implicated), and specifically how agencies would be expected to "adhere to the plan and/or other [RPB] products" in subsequent agency actions. Answers to these questions are necessary for affected stakeholders to further assess the potential implications of this initiative for their activities and communities.

The Coalition is committed to staying engaged in the RPB's activities in the Mid-Atlantic and appreciates your consideration of our comments.

Sincerely,

Brent D. Greenfield
Executive Director
National Ocean Policy Coalition

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MidAtlanticRPB, BOEM <boemmidatlanticrpb@boem.gov>

Re: Letter to Mid-Atlantic RPB

1 message

MidAtlanticRPB, BOEM <boemmidatlanticrpb@boem.gov> Tue, Nov 12, 2013 at 8:43 AM
To: brent.greenfield@oceanpolicy.com
Cc: "gschultz@dnr.state.md.us" <gschultz@dnr.state.md.us>, Maureen Bornholdt <maureen.bornholdt@boem.gov>, "wabush1@aol.com" <wabush1@aol.com>

Thank you for providing these comments on behalf of the National Ocean Policy Coalition.

We are forwarding them to the members of the MidA RPB for consideration as we discuss our next steps. We will also post them to the written public comments section on the MidA RPB webpage.

Please continue to contact us with any additional ideas or questions you may have.

On Fri, Nov 8, 2013 at 4:59 PM, <brent.greenfield@oceanpolicy.com> wrote:

> Attached please find a National Ocean Policy Coalition comment letter to the Mid-Atlantic Regional Planning Body.
>
> Please contact me at (713) 337-8821 or brent.greenfield@oceanpolicy.com if you have any questions.
>
> Sincerely,
> Brent
>
> Brent D. Greenfield
> National Ocean Policy Coalition
> 2211 Norfolk
> Suite 410
> Houston, Texas 77098
> (713) 337-8821 (o)
> (281) 839-2346 (f)
> www.oceanpolicy.com

MidAtlanticRPB, 1:00 PM (3 hours ago)
BOEM boemmidatlanticrpb@boem.gov
to Alison, MidAtlanticRPB, maureen.bornho., gschultz, wabush1

Thank you for providing these recommendations on behalf of your organizations and their members.

We are forwarding your letter to the members of the MidA RPB for consideration as we prepare for the upcoming webinar and listening sessions.

We will also post your letter to the written public comments section on the MidA RPB webpage.

Please continue to contact us with any additional ideas or questions you may have.

On Wed, Feb 12, 2014 at 11:24 AM, Chase, Alison <achase@nrdc.org> wrote:

Below and attached please find a letter from several organizations regarding the Mid-Atlantic Regional Planning Body's work. Please feel free to contact me with any questions on these documents at 212.727.4551.

Sincerely,

Ali Chase

Citizens Campaign for the Environment • Clean Ocean Action • Maryland Coastal Bays Program • Miami2Maine • The National Aquarium • Natural Resources Defense Council • Ocean Conservancy • Surfrider Foundation • Wildlife Conservation Society

February 12, 2014

Mid-Atlantic Regional Planning Body Co-Leads:

Ms. Maureen Bornholdt
Renewable Energy Program Manager
Bureau of Ocean Energy Management
U.S. Department of the Interior
1849 C Street, NW
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Ms. Gwynne Schultz
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Mr. Gerrod Smith
Chief Financial Officer
Shinnecock Indian Nation
P.O. Box 5006
Southampton, New York 11969

Submitted electronically

Re: The Mid-Atlantic Regional Planning Body's Upcoming Webinar and Listening Sessions on the Draft Framework

Dear Ms. Bornholdt, Ms. Schultz, and Mr. Smith:

Thank you and the other Mid-Atlantic Regional Planning Body (MidA RPB or RPB) representatives for initiating a public outreach process to seek comment on the *Draft Mid-Atlantic Regional Ocean Planning Framework* (Framework).[1] Many of us will be attending the webinar and the listening sessions, and we look forward to sharing our feedback on the document with you at this time. In advance of the webinar, we want to share some recommendations for making the webinar and listening sessions even more successful and note a few additional topics beyond the Framework itself that we hope you will address.

As we have previously communicated, we recommend that for all official public meetings – in-person and webinars – a participant list that includes names and organizations be provided.[2] This document should be available upon arrival at the in-person meetings, such as the listening sessions, based on RSVPs and updated and posted online after the meetings and webinars. For webinars, participant names should be shown on screen. We further recommend that, in addition to continuing to allow participants the option to call in and voice questions in their own words, all questions posed by webinar participants be visible on screen so that everyone in attendance can see what issues are being raised and by whom. Allowing for a shared understanding of the individuals and organizations present at these meetings will help advance your efforts to ensure transparency and improve stakeholder communication.

We urge you to compile the comments from the webinar and those raised at the listening sessions into a summary document to be released before the Spring in-person MidA RPB meeting. If the Framework is revised prior to the meeting, we recommend that the summary document also describe the MidA RPB's process and rationale for making each substantive change. (If the Framework is not revised until later, the rationale for changes made should still be provided.) As a guide, we suggest the Washington Department of Ecology's summary of scoping on the Pacific Coast Marine Spatial Plan.[3] This document not only provides a rationale for changes that were made, but also includes an appendix which responds to each comment given. This kind of feedback on how changes are incorporated will result in greater stakeholder and public support, as it is made clear the impacts that individuals' time and efforts have made and allows for a greater understanding the reasoning behind decisions.

As the final Framework is intended to be a "blueprint for a more detailed, strategic MidA RPB work plan" and provides a "starting point" for coordinated ocean planning work, it is critical that participants view the listening sessions as the beginnings of a dialogue on what the MidA RPB's final work plan should contain.[4] It is important to have robust engagement from the state RPB members at the meetings so that the sessions are less about formal public comment and more about discussion. We urge you to answer questions to the extent possible at the upcoming sessions, so that the public has a better grasp of how you see this work unfolding and the directions it might go in.

We also recommend that the MidA RPB address several fundamental questions beyond the scope of the Framework on the webinar, in particular an update on the RPB's charter. Many of us attended the September 2013 RPB meeting and commented on the RPB's charter; we followed up with the attached letter, which addressed several points,[5] including:

- The mission and member commitments sections of the RPB's charter[6] should indicate a desire on behalf of all parties to use the ocean planning vehicle to advance shared priorities and produce a coordinated ocean plan by 2016.[7]

- We recommend adding the following sentence to the charter's mission: "The RPB commits to working together to help ensure healthy ocean and coastal resources and encourage sustainable use in order to promote the well-being, prosperity and security of present and future generations."

- The importance of conducting the Regional Ocean Assessment should be stated in the charter's mission, and upfront commitments should be made to use the best available data in planning and develop an iterative, adaptive process to ensure that the Regional Ocean Assessment and the coastal and marine spatial plan itself remain living documents.

- The role of stakeholders and the public in planning should be identified in the RPB's charter, and the RPB charter should note that any additional stakeholder engagement mechanisms be added as an appendix to the document.

We recommend that a summary document of comments submitted regarding the charter and RPB responses also be prepared, for the same reasoning as provided earlier.

We appreciate the Mid-Atlantic Regional Council on the Ocean's (MARCO) efforts to establish the new Stakeholder Liaison Committee (SLC) and are looking forward to learning more regarding the makeup and role of this body at the March 10, 2014 meeting. As previously noted, we recommend that this meeting and all SLC meetings be open to the public.[8] The SLC meetings and those of the RPB should be included in the work plan and announced at the listening sessions, so that stakeholders and members of the public can plan ahead to continue their engagement. We also recommend that the roles of MARCO and the RPB relative to each other be described at the listening sessions, and that any efforts to establish a MidA RPB science advisory panel – to advise this body on technical matters and to provide regular and meaningful advice at all stages of the planning process – be addressed.

On behalf of our organizations and their members, we appreciate your work and the opportunity to comment and engage in the Mid-Atlantic's coordinated ocean planning process to develop a plan that protects, maintains and restores the health of the Mid-Atlantic's valuable ocean and coastal resources for now and for the future. We look forward to seeing you at the upcoming listening sessions.

Sincerely,

Ali Chase
Policy Analyst
Natural Resources Defense Council

Matt Gove
Mid-Atlantic Policy Manager
Surfrider Foundation

Adrienne Esposito
Executive Director
Citizens Campaign for the Environment

Eric Schwaab
Senior VP/ Chief Conservation Officer
The National Aquarium

Cindy Zipf
Executive Director
Clean Ocean Action

Anne Merwin
CMSP Program Director

Ocean Conservancy

Dave Wilson
Executive Director
Maryland Coastal Bays Program

Margo Pellegrino
Founder
Miami2Maine

Merry Camhi
Director, New York Seascape
Wildlife Conservation Society

Alison Chase
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[1] *Available at* http://www.boem.gov/Draft-Mid-Atlantic-Regional-Ocean-Planning-Framework/.

[2] NRDC, et al. Letter re: Discussion Points from the Mid-Atlantic Regional Planning Body's August 1st Webinar to: Maureen Bornholdt, Gwynne Schultz, and Gerrod Smith. 4 September 2013.

[3] Washington Department of Ecology. *Marine Spatial Plan for Washington's Pacific Coast: Summary of SEPA Scoping and Response to Comments*. January 2013. *Available at* http://www.msp.wa.gov/wp-content/uploads/2014/01/MSP_scoping_summary_2014.pdf.

[4] Frequently Asked Questions about the *Draft Mid-Atlantic Regional Ocean Planning Framework* at 2. *Available at* http://www.boem.gov/Environmental-Stewardship/Mid-Atlantic-Regional-Planning-Body/FAQs-about-MidA-RPB-Draft-Framework-2014.aspx.

[5] NRDC, et al. Letter re: The Mid-Atlantic Regional Planning Body's Inaugural Meeting and Draft Documents to: Maureen Bornholdt, Gwynne Schultz, and Gerrod Smith. 8 October 2013.

[6] DRAFT Charter for the Mid-Atlantic Regional Planning Body at 2 and 5. *Available at*http://www.boem.gov/Environmental-Stewardship/Mid-Atlantic-Regional-Planning-Body/MidA-RPB-Materials.aspx.

[7] Additionally, the draft RPB charter's member commitment statement that "The Members agree, to the extent *practicable* and consistent with their underlying authorities, to participate in the process for marine planning…" (p. 5, emphasis added) falls short of Executive Order 13547's call for members of the federal family to develop and comply with plans "to the fullest extent consistent with applicable law" and, accordingly, the statement should be revised by inserting "fullest" before "extent" and removing the word "practicable." All National Ocean Policy documents should be used in developing a coastal and marine spatial plan.

[8] NRDC, et al. Letter re: Public and Stakeholder Engagement in the Mid-Atlantic Regional Planning Body Process to: Maureen Bornholdt, Sarah Cooksey, and Gerrod Smith. 30 May 2013.

Re: "Mid-Atlantic Regional Planning Body"--comments from Green Delaware

1 message

MidAtlanticRPB, BOEM <boemmidatlanticrpb@boem.gov> Wed, Feb 19, 2014 at 12:32 PM

To: Alan Muller--Green Delaware <greendel@dca.net>
Cc: BOEM MidAtlanticRPB <MidAtlanticRPB@boem.gov>, Maureen Bornholdt <maureen.bornholdt@boem.gov>, brent.greenfield@oceanpolicy.org, "Amy Roe (Delaware Sierra Club)" <amywroe@gmail.com>, "Mark Martell (Delaware Audubon)" <mmartell@icg.com>, John.Kowalko@state.de.us

Dear Mr. Muller,

Thank you for providing these comments to the Mid-Atlantic Regional Planning Body (MidA RPB) co-leads on behalf of your organizations.

We are forwarding your message to the members of the MidA RPB for consideration as we prepare for the upcoming listening sessions, which we encourage you to attend.

We will also post your letter to the written public comments section on the MidA RPB webpage.

Please continue to contact us with any additional ideas or questions you may have.

Sincerely,

Maureen A. Bornholdt

on behalf of the

Mid-Atlantic Regional Planning Body Co-Leads

On Tue, Feb 18, 2014 at 12:12 PM, Alan Muller--Green Delaware <greendel@dca.net> wrote:

February 13, 2014

Ms. Maureen Bornholdt
Mid-Atlantic Regional Planning Body Federal Co-Lead
Renewable Energy Program Manager
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Ms. Gwynne Schultz
Mid-Atlantic Regional Planning Body State Co-Lead
Senior Coastal and Ocean Policy Advisor
Maryland Department of Natural Resources
580 Taylor Avenue
Annapolis, MD 21401

Mr. Gerrod Smith
Mid-Atlantic Regional Planning Body Tribal Co-Lead
Chief Financial Officer/Natural Resource Advisor
Shinnecock Indian Nation
PO Box 5006
Southampton, NY 11969
Submitted Electronically via

Dear Ms. Bornholdt, Ms. Schultz, and Mr. Smith:

We have been receiving emails in connection with the "Mid-Atlantic Regional Planning Body" for some time, to which, I admit, we have not paid a great deal of attention. This is because it has not been obvious to us what the real significance of this is.

The language in your documents seems, for the most part, vague, generic, and hypothetical.

The transcript of the August 1, 2013 "Webinar" contains this:

"Good morning and thank you for joining us today to learn more about the progress and next steps of the Mid-Atlantic Regional Planning Body. I believe we're all joining together today because of our deep love of and connection to the ocean. This connection may stem from our appreciation the fish and wildlife and other natural resources that the ocean supports, the cultural treasures that are important to understanding our past and that many of our livelihoods depend on the resources that are in, above or below the ocean. I also believe that we all joined today's webinar because we know there are better ways to manage the ocean. There are more opportunities to streamline government decision making and improve efficiency. We also want to make sure that this ocean planning process does not in some way negatively impact us, our constituents or the businesses in the regions that depend on the ocean."

Later follows a--not very convincing--discussion of why the United States Government lacks the resources to establish a "stakeholder" advisory committee.

What is all this really about, in plain language, and why should the public be interested? (My inference is that this is about establishing an industry-friendly regulatory framework for offshore energy development, including wind turbines, transmission infrastructure, and hydrocarbon exploration and production. Is this correct?)

Looking at the "Mid-Atlantic Regional Planning Body Roster of Members and Alternates, January 2014" I do not see strong representation of "environmental" concerns or "user" concerns.

It appears from documents posted that various NGOs interested in "ocean policy" have requested repeatedly that advisory bodies be established and given a substantive role, yet the responses to these requests have been, up to this point, insubstantial.

The history of the Minerals Management Service (now doing business as BOEM) does not offer confidence that offshore industrial activities would be conducted with adequate care. We would, of course, like to see this change and hope the situation is improving. Yet, expansion of offshore

extraction should come after, not before, such improvements have been demonstrated.

Many of the activities BOEM is about promoting, if not carried out with extreme care, have potential to do great harm to Mid-Atlantic coastal resources. Some are so fundamentally dangerous that they should be excluded categorically. Continuing spills, leaks, collisions, explosions, large-scale flaring and venting of gaseous and liquid hydrocarbon, and so on, suggest that acceptable industry practices and effective regulatory regimes are not yet in place. Addressing these fundamental shortcomings would be an appropriate activity.

Up to this point, I do not see that the various "outreach" and "public engagement" activities you are carrying out reflect a substantive commitment to transparency in policy making or implementation, or to addressing substantive concerns. Therefore, encouraging the public to participate in them is questionable from our point of view.

Yours very truly,

Alan Muller

From: **MidAtlanticRPB, BOEM** <boemmidatlanticrpb@boem.gov>
Date: Fri, Jun 6, 2014 at 2:29 PM
Subject: Re: Mid-Atlantic planning framework
To: Ben Furimsky <ben@flyfishingshow.com>

Thank you for your message about regional ocean planning and recreational fishing. The Mid-Atlantic RPB will consider all comments received, and will post them on the website.

During the Mid-Atlantic RPB meeting in May, the RPB discussed a strategy to further engage all Mid-Atlantic stakeholders in regional ocean planning, identified next steps and a timeline for regional ocean planning products and processes, and shared information about activities underway by RPB member institutions that are relevant for regional ocean planning. Meeting materials are posted on the website: http://www.boem.gov/Mid-Atlantic-Regional-Planning-Body/. The draft stakeholder engagement strategy outline is available on the website for public comment until July 15. Please check the website for additional information and updates, and please continue to share any comments you might have.

On Fri, Jun 6, 2014 at 11:19 AM, Ben Furimsky <ben@flyfishingshow.com> wrote:

Hi,
I was reading about the planning framework for the Mid-Atlantic ocean waters that is being set up. I believe this is a great step forward and consistency throughout the region is very important, especially in the case of many of our fish that are migratory. I also believe it is very important to include states to the north and south of our region because there are states that wipe out fish populations due to poor regulations before the migratory fish enter our region. I am writing to make sure you consider recreational fishing separate from any commercial fishing. Recreational anglers bring in many more dollars to the area. It is also important to note that a growing number of anglers are only out for sport and release all fish. While we can't deny there is some mortality in catch and release, it still helps to preserve the quality of a fishery in a non-consumptive way. I look forward to the results.

Thanks,
Ben Furimsky
Co-Director
Fly Fishing Show
ben@flyfishingshow.com

From: **MidAtlanticRPB, BOEM** <boemmidatlanticrpb@boem.gov>
Date: Tue, Jun 24, 2014 at 3:42 PM
Subject: Re: Letter to the Mid-Atlantic Regional Planning Body re: the May 20-21 Meeting
To: "Chase, Alison" <achase@nrdc.org>
Cc: "MidAtlanticRPB@boem.gov" <MidAtlanticRPB@boem.gov>, "maureen.bornholdt@boem.gov" <maureen.bornholdt@boem.gov>, "gschultz@dnr.state.md.us" <gschultz@dnr.state.md.us>, "treyleonard@gmail.com" <treyleonard@gmail.com>

Dear Ms. Chase,

Thank you for the June 23, 2014, letter to the Mid-Atlantic Regional Planning Body Co-Leads on behalf of organizations interested in working with us as we continue our efforts on regional ocean planning.

Your letter is very thoughtful and it raises many important issues. We will forward your letter to the members of the MidA RPB for consideration as we discuss our next steps. In addition, we will post your letter to the written public comments section on the Mid-A RPB webpage.

We also appreciate the comments you made during our May meeting in Baltimore. Please continue to contact us with any additional ideas or questions you may have.

Sincerely,

Maureen A. Bornholdt

Gwynne Schultz

Kelsey Leonard

On Mon, Jun 23, 2014 at 3:10 PM, Chase, Alison <achase@nrdc.org> wrote:
Hi Everyone –

My apologies, but one organization was missing from the previous letter. Attached please find the final version with all signers. No other changes have been made to the letter. Many thanks – Ali

From: Chase, Alison
Sent: Monday, June 23, 2014 12:18 PM
To: 'MidAtlanticRPB@boem.gov'
Cc: 'maureen.bornholdt@boem.gov'; 'gschultz@dnr.state.md.us'; 'treyleonard@gmail.com'
Subject: Letter to the Mid-Atlantic Regional Planning Body re: the May 20-21 Meeting

Below and attached please find a letter from several organizations regarding the Mid-Atlantic Regional Planning Body's work. Please feel free to contact me with any questions on these documents at 212.727.4551.

Sincerely,

Ali Chase

American Littoral Society • Anacostia Watershed Society • Maryland Academy of Sciences at The Maryland Science Center • Maryland Coastal Bays Program • Miami2Maine • National Aquarium • Natural Resources Defense Council • Ocean Conservancy • Operation SPLASH • Surfrider Foundation • TerraScapes • Wildlife Conservation Society

June 23, 2014

Mid-Atlantic Regional Planning Body Co-Leads:

Ms. Maureen Bornholdt
Renewable Energy Program Manager
Bureau of Ocean Energy Management
U.S. Department of the Interior
1849 C Street, NW
Washington, D.C. 20240

Ms. Gwynne Schultz
Senior Coastal and Ocean Policy Advisor
Maryland Department of Natural Resources
580 Taylor Avenue, E2
Annapolis, Maryland 21401

Ms. Kelsey Leonard
Shinnecock Indian Nation
P.O. Box 5006
Southampton, New York 11969

Submitted electronically

Re: The Mid-Atlantic Regional Planning Body's May 20-21 Meeting

Dear Ms. Bornholdt, Ms. Schultz, and Ms. Leonard:

On behalf of our organizations listed above and their millions of members and activists, we congratulate you and the other Mid-Atlantic Regional Planning Body (MidA RPB or RPB) representatives on a successful May meeting and, in particular, on approving a final *Mid-Atlantic Regional Ocean Planning Framework* (Framework).[1] We appreciated the opportunity to review a revised Framework draft, as well as the rest of the briefing book materials,[2] in advance of the meeting; it greatly helped those of us who were able to attend come prepared to contribute to the discussion.[3]

We offer the below recommendations on the other briefing book items, building on the ideas that many of our organizations shared at the meeting and look forward to a continued discussion with you on these recommendations.

I. The MidA RPB should develop its Regional Ocean Action Plan by 2016.

Thank you for committing to develop a Regional Ocean Action Plan (Plan) to achieve the Framework's healthy ocean and sustainable use goals and objectives. We were pleased to hear the announcement at Capitol Hill Ocean Week that the Administration supports finalization of a Mid-Atlantic Plan in 2016 and we urge all of you to help meet that commitment. Coordinated ocean plans are a key aspect of the new stewardship approach to ocean management that has taken shape under this Administration; please tighten up the Workplan's draft timeline[4] so that the Plan – which should include implementation actions – is submitted to the National Ocean Council (NOC) for its approval in 2016.

In addition, as many of us expressed at the May meeting, we want to see the Plan identify – based on the Regional Ocean Assessment (ROA) – ocean areas that are appropriate for different uses and those that need protection in order to ensure that the ecosystem is healthy.

To lay the proper groundwork for the Plan, the ROA should spatially show where important ecological areas are: for example, marine mammal migratory pathways and important fish habitat. It should also show where existing and future offshore uses occur/are likely to occur, for example, based on characteristics such as substrate and wind speed. The document should also identify the impacts of various uses, from shipping to offshore renewables, on the environment and recommend where and when activities should occur to avoid or minimize impacts. Based on an understanding of where uses are occurring or anticipated and the interactions, the ROA should analyze how well different spatial configurations of uses would meet the Framework's goals and objectives, analyze cumulative impacts, and note where activities would be able to coexist.

The *Final Recommendations of the Interagency Ocean Policy Task Force* (Final Recommendations) offers important guidance. The Final Recommendations state, "The regional assessment would include: relevant biological, chemical, ecological, physical, cultural, and historical characteristics of the planning area; ecologically important or sensitive species/habitats/ecosystems; and areas of human activities. The assessment would also include an analysis of ecological condition or health and of cumulative risks as well as forecasts and models of cumulative impacts."[5] The Final Recommendations also call for the RPB to "… identify a range of alternative future spatial management scenarios based upon the information gathered on current, emerging, and proposed human uses, ecosystem conditions, and ecosystem services. Comparative analyses would assess, forecast, and analyze the tradeoffs and cumulative effects and benefits among multiple human use alternatives. The alternatives and the supporting analyses would provide the basis for a draft … Plan."[6]

The Plan should build from the ROA and select an optimal scenario for the region's development that maximizes the benefits of where and when things occur and identifies actions that each of the agencies can take – using existing authorities – to ensure this. The Final Recommendations state the Plan should "… describe the spatial determinations for conservation and uses, at the appropriate scale, and include any necessary visual representations. The … Plan would describe the strategies, methods, and mechanisms for integrated or coordinated decision-making, including addressing use conflicts. [It] would further describe the continuing processes by which implementation would proceed, including mechanisms to ensure that individual partner and collaborative decision-making are reviewed for consistency with plan priorities and objectives."[7]

The Plan needs to also identify performance measures, benchmarks and indicators to evaluate the Plan's effectiveness in achieving its goals and objectives. This work includes development of a series of ecological indictors to assess regularly the natural system's baseline health in order to better understand the changing environmental conditions and the impacts from increased human activities. Specifically, the Final Recommendations call for "Performance measures [that] would assess both conservation and socio-economic objectives of the [regional ocean plan]. Measures of conservation may include, but are not limited to, indicators of ecosystem health such as the status of native species diversity and abundance, habitat diversity and connectivity, and key species (*i.e.,*species known to drive the structure and function of ecosystems)."[8] This concept is also expressed in the new Framework's principle regarding adaptability: "The MidA RPB will embrace a flexible and adaptive approach in accommodating changing environmental and economic conditions, advances in science and technology,

and new or revised laws and policies. The MidA RPB will track progress towards meeting established planning objectives and use the information gained to modify and adapt MidA RPB actions."[9]

II. The final Plan should identify and protect important ecological areas.

One key component to Plan development is identifying a network of areas important for spawning, breeding, feeding and migrating ocean fish and wildlife to ensure that the ecosystems continue to function and are resilient in the face of new challenges like increasing ocean uses, ocean acidification and climate change. The Final Recommendations state:

> With assistance from scientific and technical experts, the regional planning body would investigate, assess, forecast, and analyze the following:
>
> - Important physical and ecological patterns and processes (*e.g.*, basic habitat distributions and critical habitat functions) that occur in the planning area, including their response to changing conditions;
>
> - The ecological condition and relative ecological importance or values of areas within the planning area, *including identification of areas of particular ecological importance*, using regionally-developed evaluation and prioritization schemes that are consistent with national guidance provided by the NOC;
>
> - The economic and environmental benefits and impacts of ocean, coastal, and Great Lakes uses in the region;
>
> - *The relationships and linkages within and among regional ecosystems, including neighboring regions both within and outside the planning area, and the impacts of anticipated human uses on those connections*;
>
> - The spatial distribution of, and conflicts and compatibilities among, current and emerging ocean uses in the area;
>
> - Important ecosystem services in the planning area and their vulnerability or resilience to the effects of human uses, natural hazards, and global climate change;
>
> - The contributions of existing placed-based management measures and authorities; and
>
> - Future requirements of existing and emerging ocean, coastal, and Great Lakes uses.[10]

In the final Plan, the RPB should steer project siting to less sensitive areas. The Final Recommendations note: "[Spatial planning] ultimately is intended to result in protection of areas that are essential for the resiliency and maintenance of healthy ecosystem services and biological diversity, and to maximize the ability of marine resources to continue to support a wide variety of human uses."[11] Currently, despite the extent of ecologically and economically valuable offshore habitat within the region, there are virtually no habitat areas designated for year-round protection.[12] The RPB has an opportunity to

rectify this situation by identifying in the Plan various actions that agencies will take under existing authorities to protect these special ecological places.

We look forward to working with the newly-established Regional Ocean Action Plan Workgroup to flesh out further the Plan's "nature and purpose … what additional information and actions are needed to develop it".[13]

III. The MidA RPB should finalize the Workplan and Charter in 2014.

The Workplan should be completed this year to clarify and direct the RPB's activities – many of which are already ongoing, such as the ROA. Our organizations understand that the Workplan may need to be modified throughout the process to incorporate revisions to planning products; however, we hope that the primary actions, timelines and capacities to advance the Framework's goals of healthy ocean ecosystems and sustainable use, and their associated objectives, will be finalized in 2014. *Moreover, forward movement on the ROA and the Plan development should not await nor be slowed down pending finalizing of the Workplan*.

As the RPB develops the Workplan, we recommend adding in specific tasks, noting which agencies are doing what work, and the planned-for results, similar to what the Northeast Regional Planning Body has done.[14] We hope to review a draft of the Workplan in advance of the next meeting this Fall and to see it finalized at the meeting, after opportunity for comment.

We appreciated the update on the Charter's status at the RPB meeting and share your hope that the document will be finalized soon. While the RPB has done much to engage the public and seek feedback, the Charter is one category where we believe that outreach has fallen seriously short. We appreciate the RPB's assurances that many of our recommendations on Charter edits have been incorporated, but would appreciate an update on which changes have been adopted and, if not, why, when the final Charter is made available.[15] We recommend that future opportunities for document feedback follow the most recent example of the Framework revision process instead.

IV. To review and advise the MidA RPB's products, the RPB should develop a science engagement strategy.

Our organizations appreciate the RPB's stakeholder outreach efforts to date, in particular the public outreach that the RPB conducted with listening sessions and through sharing various iterations of the draft Framework. We recommend that the RPB continue to reach out to all parties and look forward to commenting on the *Mid-Atlantic Regional Ocean Planning Stakeholder Engagement Strategy Draft Outline* (Strategy Draft Outline).[16]

One particular community that should be expeditiously engaged further in this process is the science community. We recommend holding a webinar for this community in the coming months and identifying

components of the RPB's work where they might be able to engage. As previously noted, our organizations believe that a science advisory panel comprised of academics and subject matter experts should be established to provide feedback on the ROA and other work products.[17] The Final Recommendations envision the science community's engagement: "The regional planning body would consult scientists, technical experts, and those with traditional knowledge of or expertise in coastal and marine sciences and other relevant disciplines throughout the process to ensure that [planning] is based on sound science and the best available information. To this end, the regional planning body would establish regional scientific participation and consultation mechanisms to ensure that the regional planning body obtains relevant information."[18] As it currently stands, despite the fact that the Framework notes a need to "Consult scientists, technical, and other experts in conducting regional ocean planning and developing ocean planning products", the Strategy Draft Outline does not mention this particular stakeholder subset.[19] We recommend moving quickly to establish an outreach effort to the science community and an advisory panel to assist the RPB's work so that they can be ready to review drafts of the ROA and other products.

Conclusion

As the RPB well knows, only a healthy ocean can continue to provide the food, jobs and recreation we want and need. The Mid-Atlantic's ocean resources support more than 670,000 jobs, with the tourism and recreation sector representing almost three-quarters of these.[20] In 2012, 2.3 million recreational anglers took 14 million fishing trips in the Mid-Atlantic region.[21] These jobs rely on clean coastal waters and beaches and healthy and abundant fish and wildlife.

We are at a unique historical juncture where the plans we set in place now will determine how well the Mid-Atlantic's ocean waters and wildlife – already under stress from pollution, destruction of productive marine habitats, climate change and ocean acidification – continue to function and provide for us as increased shipping, offshore wind, sand mining and other uses escalate. The sooner we have a final Plan, the sooner agencies can refine their ways of doing business to better align with the region's shared goals, including advancing our ocean ecosystem health. If we fail to plan, we are essentially planning to fail.

We appreciate the RPB's efforts and look forward to working with you as you continue your deeply important work to develop a final Plan to guide the region's ocean protection and sustainable use.

Sincerely,

Ali Chase

Policy Analyst

Natural Resources Defense Council

Matt Gove

Mid-Atlantic Policy Manager

Surfrider Foundation

Eric Schwaab
Senior VP/Chief Conservation Officer

National Aquarium

Van R. Reiner
President and CEO
Maryland Academy of Sciences at The Maryland Science Center

Tim Dillingham
Executive Director
American Littoral Society

Anne Merwin
Director
Coastal & Marine Spatial Planning
Ocean Conservancy

Dave Wilson

Executive Director

Maryland Coastal Bays Program

James Foster

President

Anacostia Watershed Society

Merry Camhi, PhD
Director
New York Seascape
Wildlife Conservation Society

Terra Pascarosa Duff
Environmental Director
TerraScapes

Margo Pellegrino

Founder

Miami2Maine

Rob Weltner
President
Operation SPLASH

_____

Alison Chase
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40 West 20th Street
New York, NY 10011
Phone: 212.727.4551
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achase@nrdc.org

[1] *Available at* http://www.boem.gov/Mid-Atlantic-Regional-Ocean-Planning-Framework/.

[2] *Available at* http://www.boem.gov/MidA-RPB-May-20-21-2014-Meeting-Materials/.

[3] The *Executive Summary of the Mid-Atlantic Regional Planning Body's Public Listening Sessions on the Draft Framework* was helpful for those of us unable to attend all of the coastal meetings andwe recommend that future outreach efforts include both a similar summary document and the MidA RPB's process and rationale for making each substantive change, based on this feedback. Knowing why RPB members decided for or against recommended changes would allow our comments to be more substantive and directed.

[4] The *Process Recommendations for Mid-Atlantic RPB Consideration* calls for development of a Plan by mid-2017, with work on an implementation/ adaptation plan for the Plan to begin only after.*Available at* http://www.boem.gov/MidA-RPB-May-20-21-2014-Meeting-Materials/.

[5] Final Recommendations at 59, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf.

[6] Final Recommendations at 57, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf.

[7] Final Recommendations at 59, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf.

[8] Final Recommendations at 64, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf. Also, at 59, "As part of monitoring and evaluation, regional planning bodies would define a clear set of regional performance measures to be used to assess whether or not the region is meeting national and regional objectives and goals."

[9] Framework at 5. *Available at* http://www.boem.gov/Mid-Atlantic-Regional-Ocean-Planning-Framework/.

[10] Final Recommendations at 57, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf. Emphasis added.

[11] Final Recommendations at 44, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf.

[12] Chasis, S. and C. Bower. 2013. Legal Mechanisms and Opportunities to Advance Ocean Habitat Protection in the Mid-Atlantic. *Sea Grant Law and Policy Journal*, *6* (1), 147-164. *Available at* http://nsglc.olemiss.edu/sglpj/vol6no1/7-Chasis.pdf.

[13] *Process Recommendations for Mid-Atlantic RPB Consideration*, *available at*http://www.boem.gov/MidA-RPB-May-20-21-2014-Meeting-Materials/.

[14] Northeast Regional Planning Body. *Framework for Ocean Planning in the Northeast United States*, *available at* http://neoceanplanning.org/wp-content/uploads/2014/02/NE-Regional-Ocean-Planning-Framework-February-2014.pdf.

[15] *See*, for example, the letters several of our organizations submitted to the MidA RPB on November 4, 2013 and February 12, 2014.

[16] *Available at* http://www.boem.gov/MidA-RPB-May-20-21-2014-Meeting-Materials/.

[17] *See*, for example, the letters several of our organizations submitted to the MidA RPB on September 4, 2013, November 4, 2013 and February 12, 2014.

[18] Final Recommendations at 56, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf.

[19] Framework at 2. *Available at* http://www.boem.gov/Mid-Atlantic-Regional-Ocean-Planning-Framework/.

[20] National Oceanic and Atmospheric Administration, ENOW Data Wizard. Mid-Atlantic, 2011.*Available at* http://www.csc.noaa.gov/ENOWDataWizard/index.jsp?RegionList=-4&vYears=2011.

[21] National Marine Fisheries Service. 2014. *Fisheries Economics of the United States, 2012*. U.S. Department of Commerce, NOAA. *Available at* http://www.st.nmfs.noaa.gov/economics/publications/feus/fisheries_economics_2012. Please note that the results from this survey cannot be directly compared to the ENOW data; the analyses use different data and models. Please note that the NMFS report includes self-employed fishermen.

From: **MidAtlanticRPB, BOEM** <boemmidatlanticrpb@boem.gov>
Date: Thu, Sep 4, 2014 at 8:05 AM
Subject: Re: OA, OA Data, & Climate Change
To: MARY FALL WADE <mfwade_99@hotmail.com>

Thank you for submitting suggestions concerning important ocean issues. The MidA RPB will consider all comments received as we discuss our next steps. In addition, we will post your message on the written public comments section on the MidA RPB webpage.

One of the MidA RPB's objectives is to "Facilitate enhanced understanding of current and anticipated ocean ecosystem changes in the Mid-Atlantic. These include ocean-related risks and vulnerabilities associated with ocean warming (including sea level rise, coastal flooding/inundation), ocean acidification (including effects on living marine resources), and changes in ocean wildlife migration and habitat use." There are a number of federal agencies represented on the MidA RPB (NOAA, BOEM, and EPA) that will help inform the development of actions under this objective. You might be aware that NOAA is a partner with the OA-ICC, and NOAA, BOEM and EPA are part of an interagency work group on ocean acidification. These federal partners have mandates for research and/or management of resources likely to be impacted by ocean acidification.

Please continue to contact us with any additional ideas you may have. As a reminder, the MidA RPB is working on draft products that will be shared for public review and input later this fall. Please check the website (http://www.boem.gov/Mid-Atlantic-Regional-Planning-Body/) for updates and additional information.

On Tue, Sep 2, 2014 at 10:08 PM, MARY FALL WADE <mfwade_99@hotmail.com> wrote:
Dear Mid-Atlantic RPB:

I am curious why you aren't partnering with GOA-OA or the OA-ICC for ocean acidification? Are policy makers taking OA into account when planning for aquaculture and MPAs?

In addition to using some of the IAEA's OA-ICC's data on OA, it seems some of their research on climate change could potentially be pertinent?

- OA-ICC: http://www.iaea.org/ocean-acidification/page.php?page=2181
- Coping with Climate Change: http://www.iaea.org/newscenter/focus/climatechange/
- Isotopes in Hydrology, Marine Ecosystems, and Climate Change Studies : http://www-naweb.iaea.org/na/about-na/na-ddgs-symposium-isotopes.html
- Isotopic Tools for Protecting the Seas: http://www-naweb.iaea.org/na/resources-na/factsheets/Environment/Isotopic%20Tools%20for%20Protecting%20the%20Seas.pdf
- Protecting the Marine Environment: http://issuu.com/iaea_bulletin/docs/oceans
- Policy Brief on Ensuring Survival: Oceans, Climate, and security: http://issuu.com/christinadianparmionova/docs/policy_brief_on_oceans_and_climate

MARY FALL WADE
mfwade_99@hotmail.com
https://www.linkedin.com/pub/mary-fall-wade/48/117/561

From: **MidAtlanticRPB, BOEM** <boemmidatlanticrpb@boem.gov>
Date: Fri, Sep 5, 2014 at 9:08 AM
Subject: Re: Resources for People Who Want to Learn More About OA
To: MARY FALL WADE <maryfallwade@gmail.com>

Thank you for providing information about ocean acidification as it relates to ocean planning. We appreciate the information and will post your message containing all of the resources onto the MidA RPB's webpage under Written Public Comments. The MidA RPB will consider all input received as we discuss our next steps, and will consider posting additional information to the website in a future revision.

Please continue to contact us with any additional ideas you may have. As a reminder, the MidA RPB is working on draft products that will be shared for public review and input later this fall. Please check the website (http://www.boem.gov/Mid-Atlantic-Regional-Planning-Body/) for updates and additional information.

On Thu, Sep 4, 2014 at 10:54 AM, MARY FALL WADE <maryfallwade@gmail.com> wrote:
Hello Mid-Atlantic RPB:

For members of the general public and policy makers who want to learn more about ocean acidification and its role in MSP, I would like to highlight the OA-ICC news stream from the OA-ICC which I find particularly useful. The news stream also lists upcoming meetings and such. As an example, I would like to highlight the following articles:

- Ocean Acidification from Domestic to International: This discusses the US Inter-Agency Work Group on OA composed of NOAA, NASA, the US Navy, US Fish and Wildlife Service, and BOEM: http://news-oceanacidification-icc.org/2014/09/04/ocean-acidification-from-domestic-to-international/
- Clownfish that Inspired Finding Nemo Closer to Endangered Species Act Protection: This discusses a few of the threats from ocean acidification, including threats to the orange clownfish, which galvanized public support as the species was popularized in the Finding Nemo movie: http://news-oceanacidification-icc.org/2014/09/04/clownfish-that-inspired-finding-nemo-closer-to-endangered-species-act-protection/

Also of note is the OA-ICC's Communication Resources which includes OA resources for a variety of audiences:

- Resources for Policy Makers: http://www.iaea.org/ocean-acidification/page.php?page=2232
- Resources for the General Public: http://www.iaea.org/ocean-acidification/page.php?page=2231

In addition, the NOAA OA Story Map is rather informative:

- http://weather.maps.arcgis.com/apps/MapTour/index.html?appid=0ac58c426e6749bfb3b3314ba7d6a646&webmap=a390999867714bed9127456ef50e9f68

Finally, the GOA-ON webpage explains the international OA framework:

- GOA-ON Homepage: http://www.goa-on.org/GOA-ON.html
- Global Ocean Acidification Observation Network: Requirements and Governance Plan (attached)

It took me awhile to locate these resources, so I thought I would provide them for others so they do not have to dig around on the web to find them. Perhaps some of these resources could be included on the BOEM Related Resources page, in MarineCadastre, or perhaps NOAA's CMSP Data Registry could give OA a nod and indicate that OA is a CMSP consideration and OA data consolidation is in the works? Eventually, guidance on modeling OA to inform adaptive MSP would be very useful. It would better help people like me understand the CMSP-OA nexus (Washington State's efforts with regard to the CMPS-OA nexus are discussed briefly here: http://news-oceanacidification-icc.org/2013/01/18/coastal-legislators-top-jan-25-marine-advisory-council-agenda/#more-12092), OA and aquaculture, as well as OA and climate change.

Thank you,

Mary Fall

MARY FALL WADE
maryfallwade@gmail.com
https://www.linkedin.com/pub/mary-fall-wade/48/117/561

Begin forwarded message:

From: Ocean acidification <oaiccproject@gmail.com>
Subject: Ocean acidification
Date: September 4, 2014 at 9:13:52 AM EDT
To: maryfallwade@gmail.com

Ocean acidification

- Ocean acidification: state-of-the science considerations for Small Island Developing States
- Clownfish that inspired Finding Nemo closer to Endangered Species Act Protection
- Ocean acidification from domestic to international
- Space-time variability of alkalinity in the Mediterranean Sea
- Life in the slow lane

Ocean acidification: state-of-the science considerations for Small Island Developing States

Posted: 04 Sep 2014 02:05 AM PDT

The United States of America and New Zealand, in partnership with the Secretariat of the Pacific Regional Environment Programme, hosted a two-day International Workshop on Ocean Acidification: State-of-the-Science Considerations for Small Island Developing States (SIDS) on August 28 and 29, 2014, in Apia, Samoa. The workshop was an official parallel event to the Third International [...]

Email this

Clownfish that inspired Finding Nemo closer to Endangered Species Act Protection

Posted: 04 Sep 2014 01:56 AM PDT

Species threatened by global warming, ocean acidification, aquarium trade SAN FRANCISCO— The National Marine Fisheries Service announced today that the orange clownfish — a species popularized for a generation of children by the movie Finding Nemo — may warrant protection under the U.S. Endangered Species Act because of threats from global warming and ocean acidification. [...]

Email this

Ocean acidification from domestic to international

Posted: 04 Sep 2014 01:46 AM PDT

Since the industrial revolution began, we have released 2 trillion tons of carbon dioxide (CO_2) into the atmosphere, and about one-third of it went into the ocean. We initially thought that the ocean taking up CO_2 was a good thing – because it took it out of the atmosphere. Unfortunately, we were wrong. There has [...]

Email this

Space-time variability of alkalinity in the Mediterranean Sea

Posted: 04 Sep 2014 01:37 AM PDT

The results indicate that the Mediterranean Sea shows alkalinity values that are much higher than those observed in the Atlantic Ocean on a basin-wide scale. A marked west-to-east surface gradient of alkalinity is reproduced as a response to the terrestrial discharges, the mixing effect with the Atlantic water entering from the Gibraltar Strait and the [...]

Email this

Life in the slow lane

Posted: 04 Sep 2014 01:29 AM PDT

The paper: Cornwall C. E. et al., 2014. “Diffusion boundary layers ameliorate the negative effects of ocean acidification on the temperate coralline macroalga Arthrocardia corymbosa”. PLOS ONE 9:e97235. The speed of water flowing around coralline algae, a critical member of coral reef and coastal seaweed communities, affects their response to ocean acidification. Anthropogenic ocean acidification [...]

Email this

Global Ocean Acidification Observing Network: Requirements and Governance Plan

First Edition

JA Newton, RA Feely, EB Jewett, P Williamson, J Mathis

EXECUTIVE SUMMARY

The scientific and policy needs for coordinated, worldwide information-gathering on ocean acidification and its ecological impacts are now widely recognized. The importance of obtaining such measurements has been endorsed by the UN General Assembly[1], and by many governmental and non-governmental bodies who have recently assisted the scientific community in developing the Global Ocean Acidification Observing Network (GOA-ON). The design and foundation of the Network comes from two international workshops held at the University of Washington, Seattle, USA, in June 2012 and at the University of St. Andrews, UK, in July 2013 involving over a hundred participants and over 30 nations.

The policy need relates to the requirement for robust evidence on ocean acidification and its worldwide impacts, to inform appropriate management action at both national and international levels. The scientific need is for large-scale, long-term data, to improve understanding of relevant chemical and biological processes; assist in the design and interpretation of experimental studies; and thereby improve predictive skills.

Three high level goals of the Network aim to provide measurements for management while also delivering scientific knowledge: to improve our understanding of global ocean acidification conditions (Goal 1); to improve our understanding of ecosystem response to ocean acidification (Goal 2); and to acquire and exchange the data and knowledge necessary to optimize the modeling of ocean acidification and its impacts (Goal 3).

This GOA-ON Requirements and Governance Plan provides both broad concepts and key critical details on how to meet these goals. In particular, it defines: the Network design strategy; ecosystem and goal-specific variables; spatial and temporal coverage needs; observing platform-specific recommendations; data quality objectives and requirements; initial GOA-ON products, outcomes, and applications; GOA-ON's proposed governance structure; and Network support requirements.

International OA data sharing arrangements are proposed based on defined data and metadata standards and open access to observing data. While the ocean carbon

[1] Paragraph 153 of Resolution 68/70, passed 9 December 2013: "… encouraged States and competent international organizations and other relevant institutions, individually and in cooperation, to urgently pursue further research on ocean acidification, especially programmes of observation and measurement…"

community has a relatively mature data-sharing process, it is recognized that the addition of coastal sites, as well as biological and ecological data to this framework will take time and effort to structure.

The effort of GOA-ON to develop the optimal observing system to detect ecosystem impacts of ocean acidification on various types of ecosystem (including tropical, temperate, and polar regional seas; warm and cold-water corals; and nearshore, intertidal and estuarine habitats), and in the context of other stressors, has only started recently. Further work will be needed to refine detailed protocols for relevant biological observations on a habitat- or regionally-specific basis. The potential scope for such observations is extremely wide; it is therefore essential that GOA-ON builds on, and is conceptually part of, the Framework for Ocean Observation developed by the Global Ocean Observing System (GOOS) and the International Ocean Carbon Coordination Project (IOCCP), while also working closely with the Intergovernmental Oceanographic Commission (IOC of UNESCO), the Ocean Acidification International Coordination Center (OA-ICC of IAEA), and other relevant bodies.

The GOA-ON website, http://www.goa-on.org/, has been developed to include the latest version of the interactive map of global ocean acidification observing activities. This map represents the best information available on the current inventory of GOA-ON observing assets, and provides a tangible means for increasing awareness and coordination between network partners and others with interests as well as access to ocean acidification data being collected around the globe.

Future actions of the Network include facilitating additional measurement efforts in geographic areas of high concern, together with associated capacity-building; strengthening of linkages with experimental and theoretical studies; maintaining and extending communications with the ocean observing community; establishing effective and quality-controlled international data management and data sharing, through distributed data centers; and encouraging the development of synthesis products based on GOA-ON measurements. All this will require that the Network secure the necessary level of support and resources to achieve these actions.

1. Background and Introduction

The two main needs for worldwide information-gathering on ocean acidification[2] and its ecological impacts have been articulated by several bodies and organizations in the past five years. This includes the United Nations General Assembly who noted the work of the Intergovernmental Panel on Climate Change and "encouraged States and competent international organizations and other relevant institutions, individually and in cooperation, to urgently pursue further research on ocean acidification, especially programmes of observation and measurement.[3]" Firstly, a well-coordinated, multidisciplinary and multi-national approach for ocean acidification observations and modeling would provide authoritative evidence to policy-makers on fundamental changes to marine ecosystems occurring from pole to equator, and from estuaries to ocean depths. Second, the collation and analysis of global-scale datasets documenting these chemical changes and associated biological responses would greatly increase understanding of the processes involved, allowing us to firmly establish impacts attributable to ocean acidification, assess the importance of associated climate change feedbacks, and improve the reliability of projections of future biogeochemical and ecological conditions, and their societal consequences.

National observational programs and activities to address such issues now exist or are under development in several countries. Their value, however, is greatly enhanced when they are brought together at global and regional levels, and explicitly linked with other field studies, manipulative experiments, and modeling

This report, based on two international workshops, provides a consensus vision and strategy for such coordination through the Global Ocean Acidification Observing Network (GOA-ON). The first workshop, held at the University of Washington in Seattle, USA (during 26-28 June 2012), defined the goals and requirements of a global observing network for both carbon and ocean acidification in the context of an overall framework for ocean observing responding to societal needs. This Seattle workshop was supported by the NOAA Ocean Acidification Program, the International Ocean Carbon Coordination Project (IOCCP), the Global Ocean Observing System, including the U.S. Integrated Ocean Observing System (IOOS), and the University of Washington.

Building on that effort, a second GOA-ON workshop was held at the University of St. Andrews, UK (during 24-26 July 2013). The overarching goal of the second meeting was to refine the vision for the structure of GOA-ON, with emphasis on standardizing the monitoring of ecosystem impacts of OA in shelf and coastal seas.

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[2] The International Panel on Climate Change (IPCC) Workshop on Impacts of Ocean Acidification on Marine Biology and Ecosystems (2011, p. 37) defines Ocean Acidification (OA) as "*a reduction in the pH of the ocean over an extended period, typically decades or longer, which is caused primarily by uptake of carbon dioxide from the atmosphere, but can also be caused by other chemical additions or subtractions from the ocean.*" The interests of GOA-ON focus on the changes in ocean chemistry and biology driven by anthropogenic increases of atmospheric CO_2 in the context of their future societal implications and their interactions with other perturbations.

[3] Extracted from Resolution 68/70 of the United Nations General Assembly (passed on 9 December 2013)

Support for this workshop was provided by the UK Ocean Acidification research programme (UKOA, co-funded by Natural Environment Research Council, Defra and DECC); the International Ocean Carbon Coordination Project; the Ocean Acidification International Coordination Centre of the International Atomic Energy Agency; the UK Science & Innovation Network (co-funded by BIS and FCO); the NOAA Ocean Acidification Program, the Global Ocean Observing System, the Intergovernmental Oceanographic Commission of UNESCO, and the University of Washington. This report is expected to be a "living" document to be refined and updated periodically as the GOA-ON matures over the next several decades. The revisions to the document will be based on community input and consensus based recommendations of future GOA-ON workshops.

Participants in both workshops designed GOA-ON to monitor biogeochemical changes at sufficient detail to discern trends in acidification and determine relative attribution of the primary physical and chemical processes governing such changes. The consensus was that GOA-ON must also include a means of tracking changes in large-scale biological processes (changes in productivity, species distributions, etc.), which may be affected by ocean acidification, as well as other factors. GOA-ON will build on the existing global oceanic carbon observatory network of repeat hydrographic surveys, time-series stations, floats and glider observations, and volunteer observing ships in the Atlantic, Pacific, Arctic, Southern, and Indian Oceans.

Recognition of the importance of the continuity and quality of these foundational observations will help to assure their future support, while also providing the basis for a more comprehensive, multidisciplinary ocean acidification observing network. The further development of GOA-ON will require the adoption of advanced new technologies that will reliably provide the community with the requisite biogeochemical measures necessary to track ocean acidification synoptically (e.g. new carbon chemistry sensors developed and adapted for moorings, volunteer observing ships, floats and gliders, with close linkage to satellite-based remote sensing). Such technologies provide critically important information on the changing conditions in both open-ocean and coastal environments that are presently under-sampled.

As indicated above, GOA-ON is not just a pH monitoring program. A fully-realized network needs to have the capability to not only track changes in other chemical parameters, such as $CaCO_3$ saturation states and chemical speciation in the ocean, but also biological production rates and species functional group distributions. These additional measurements are needed to improve confidence in projected future ocean acidification, and better discern ecosystem responses. New technologies for monitoring dissolved inorganic carbon, total alkalinity and pH would be beneficial for tracking changes in the marine inorganic carbon system, including those resulting from non-CO_2 sources of acidification.

The biological measurements are admittedly more difficult and complex to measure repeatedly or remotely. However, measurements of net primary production and community metabolism, either directly or from carbon, nutrient or oxygen inventories, along with an understanding of hydrodynamics are important in order to identify biological impacts and adaptations to ocean acidification, especially in coastal zones where globally-driven changes in ocean acidification are augmented by local processes.

Implementation of GOA-ON requires coordination and integration both internally, within the network, and externally, through linkage to existing international research and observational programs. Leveraging existing infrastructure and monitoring (for carbon-related work and broader ecological activities) will improve efficiency; however, new infrastructure will be necessary given that considerable observational gaps remain. In addition to helping to sustain existing infrastructure and its capabilities, we must also identify and prioritize new time series stations, repeat surveys and underway measurements that are urgently needed in under-sampled marine environments. No single nation can address all these issues on a truly global basis: GOA-ON must therefore be developed as a collaborative international enterprise, stimulating additional effort and sharing expertise between nations to advance infrastructure development.

Capacity building and training of new scientists is essential to the GOA-ON effort. Guidance and workshops on methods and techniques for those new to OA observing must also be developed. The GOA-ON website will provide access to such products (e.g., guidance documents, training manuals). Such information will be incorporated into future versions of this document.

2. Paths to Creation of the Global OA Observing Network

The international efforts which led to the first GOA-ON workshop in Seattle are pictured in Figure 1. A Working Group on Ocean Acidification (with broad international representation) was jointly established in 2009 by the non-governmental Surface Ocean Lower Atmosphere Study (SOLAS) and the Integrated Marine Biogeochemistry and Ecosystem Research project (IMBER). This Working Group produced the initial proposal for the Ocean Acidification International Coordination Centre (OA-ICC) and associated activities, including a global observing initiative. The OA-ICC was announced at the Rio +20 United Nations Conference on Sustainable Development held in Rio de Janeiro, June 2012, and began its work in early 2013 under the auspices of the International Atomic Energy Agency (IAEA).

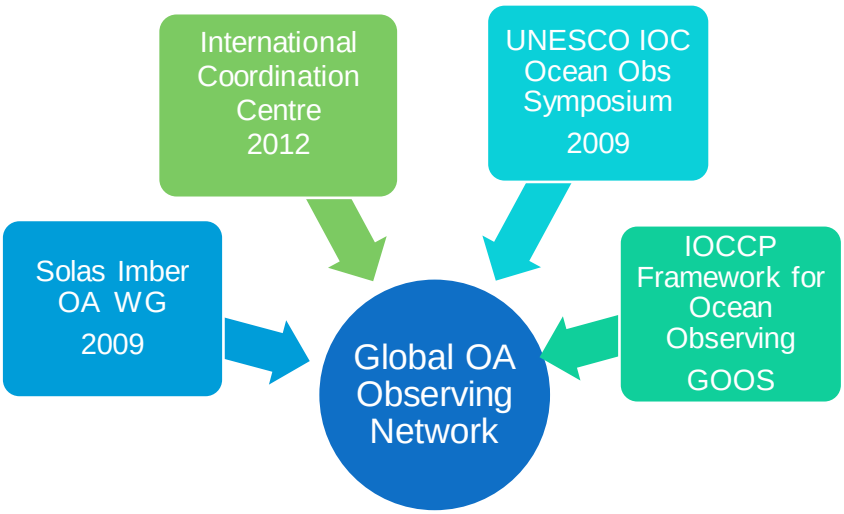

Figure 1. Schematic diagram of the international drivers that contributed to the development of a global observing network for ocean acidification and the first GOA-ON workshop.

An additional key factor in the genesis of GOA-ON was the OceanObs '09 Conference (Venice, September 2009; Hall, Harrison & Stamer, 2010), involving a very wide range of sponsors and endorsers, and resulting in the publication of several plenary papers, community white papers and other contributions relating to the observing requirements for ocean acidification; these included Feely et al. (2010) and Iglesias-Rodriguez et al. (2010), providing a solid structural framework for the GOA-ON described in this document.

In a closely-linked initiative, the International Ocean Carbon Coordination Project (IOCCP) developed a cooperative agreement with the Global Ocean Observing System (GOOS), and released the Framework for Ocean Observing, led by the Intergovernmental Oceanographic Commission of UNESCO (Lindstrom et al., 2012). All of the entities referenced above continue to provide the basic foundation for the network. Other regional-scale activities contribute to and complement GOA-ON activities, e.g., OSPAR/ICES (ICES, 2013; Hydes et al., 2013).

3. Workshop Goals and Community Input

The common goals of the international workshops at Seattle and St. Andrews were to:

1. Provide the rationale and design of the components and locations of a global network for ocean acidification observations that includes repeat hydrographic surveys, underway measurements on ships of opportunity (SOOP), moorings, floats and gliders and leverages existing networks and programs wherever possible;

2. Identify a minimum suite of measurement parameters and performance metrics, with guidance on measurement quality goals, for each major component of the observing network;
3. Develop a strategy for data quality assurance and data reporting; and
4. Discuss requirements for international program integration and governance.

At both workshops, participants included ocean carbon chemists, oceanographers, biologists, data managers, and numerical modelers. See Appendix 1 for participant lists and Appendix 2 for the workshop agendas.

At the **Seattle workshop** there were 62 participants from 22 countries and 1 international body. Countries represented were: Australia, Bermuda, Canada, Chile, China PR, France, Germany, Iceland, India, Israel, Italy, Japan, Rep Korea, Mexico, New Zealand, Norway, South Africa, Sweden, Taiwan, United Kingdom, United States, and Venezuela.

At the **St. Andrews workshop** there were 87 participants from 26 countries and 4 international bodies. Countries represented were: Australia, Bermuda, Brazil, Canada, Chile, China PR, France, Germany, Iceland, India, Ireland, Israel, Italy, Japan, Rep Korea, Malaysia, New Zealand, Norway, Philippines, South Africa, Spain, Sweden, Taiwan, Thailand, United Kingdom, and United States.

Prior to each workshop, participants and their colleagues were requested to identify existing (red) and planned (green) OA observing assets, as shown in Figure 1, to provide the basis for the Network. As addressed later in this document (section 14), this map will be a resource on the GOA-ON portal, updated as current information changes and to incorporate new information from additional GOA-ON members. This resource will be highlighted in workshops and conferences to increase awareness of this information and to encourage wide participation.

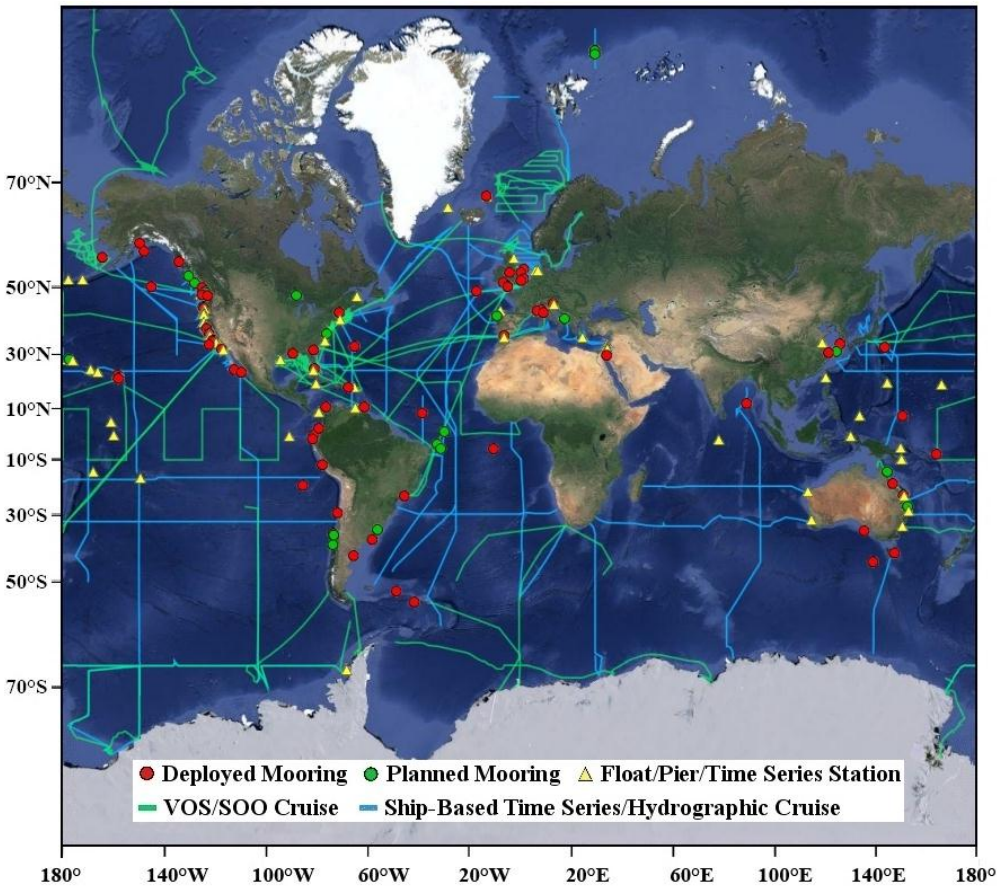

Figure 2. Map of current and planned Global Ocean Acidification Observing Network (GOA-ON) components (weekly updated; last updated December 2013; http://www.goa-on.org/).

4. Global OA Observing Network Justification and Goals

There was strong consensus in both workshops on why an ocean acidification observing system was needed, why it must be global in scale, why it should be integrated across physical, chemical, and biological observations and the goals of the GOA-ON.

4.1 Why is a Global OA Observing Network needed?

- We need information and data products that can inform policy and the public with respect to ocean acidification and implications for the overall ecosystem health (status) of the planet.
- Ocean acidification processes are occurring at global scales; therefore, we need to go beyond local measurements and observe ocean acidification on global scales in order to understand its drivers correctly.
- Insufficient observations and understanding exists to develop robust predictive skills regarding ocean acidification and impacts. While we need enhanced coverage at local scales, successful international coordination of

these observations will allow for nesting of these local observations within a global context.

4.2 What does the Global OA Observing Network need to provide?

The goals of the GOA-ON are established to:

- **Goal 1:** Improve our understanding of **global ocean acidification** conditions.
  - Determine status of and spatial and temporal patterns in carbon chemistry, assessing the generality of response to ocean acidification;
  - Document and evaluate variation in carbon chemistry to infer mechanisms (including biological mechanisms) driving ocean acidification;
  - Quantify rates of change, trends, and identify areas of heightened vulnerability or resilience.

- **Goal 2:** Improve our understanding of **ecosystem response to ocean acidification**.
  - Track biological responses to OA, commensurate with physical and chemical measurements and in synergy with relevant experimental studies and theoretical frameworks;
  - Quantify rates of change and identify areas as well as species of heighted vulnerability or resilience.

- **Goal 3:** Acquire and exchange data and knowledge necessary to **optimize modeling of ocean acidification and its impacts**.
  - Provide spatially and temporally-resolved chemical and biological data to be used in developing models for societally-relevant analyses and projections;
  - Use improved knowledge gained through models to guide Goals 1 and 2 in an iterative fashion.

5. System Design of the Global OA Observing Network: Conceptual

Conceptually, GOA-ON addresses each of these three goals through the use of a nested design encompassing observations from a very wide range of marine environments (from open ocean to coastal waters, including estuaries and coral reefs), and using a variety of integrated and interdisciplinary observing strategies appropriate to the environment of interest.

5.1. Global OA Observing Network Nested System Design

To address the goals, a **nested design** is proposed for measurements at stations:

- *Level 1:* critical minimum measurements; measurements applied to *document* ocean acidification dynamics.
- *Level 2:* an enhanced suite of measurements that promote understanding of the primary mechanisms (including biologically mediated mechanisms) that

govern ocean acidification dynamics; measurements applied towards *understanding* those dynamic processes.

- *Level 3:* Opportunistic or experimental measurements that may offer enhanced insights into ocean acidification dynamics and impacts; measurements under *development* that may be later adapted to Level 2.

The system design of the Network is further nested because observing investments designed to address Goal 2 should be implemented at a subset of the Goal 1 stations.

5.2 Global OA Observing Network Design Attributes

- GOA-ON will comprise observing assets within multiple ecosystem domains, including the ***open ocean, shelf seas, coasts (including the nearshore and estuaries), and warm and cold-water coral habitats****.* The open ocean, shelf seas, and coasts can also be subcategorized into polar, temperate and tropical regions with their associated ecosystem types.
- The Network will make use of a variety of observing platforms, classified here into three categories that share similar capabilities. These are: *1)* ***ship-based sampling*** *including survey cruises, the Ship of Opportunity Program (SOOP), [also called the Voluntary Observing Ship (VOS) program]; 2)* ***fixed platforms****, including moorings and piers; and 3)* ***mobile platforms****, including marine gliders (both profiling and wave) and floats (possibly others, such as animals).*
- Use will be made of existing platforms wherever possible and appropriate.
- The Network will be interdisciplinary in approach, including in particular: *carbon chemistry, meteorology, oceanography, biogeochemistry, ecology, and biology.* Such integration will be much more effective from a system design standpoint if carried out from the start. For instance, while typically ocean chemistry is measured to assess effects on biology, an equally critical question is "How is biology affecting ocean chemistry?" and the design of the Network must reflect such needs.

6. System Design of the Global OA Observing Network: Data Quality

The measurement quality goals of the GOA-ON may differ from site to site depending on the intended use of the observations, with differing intended uses requiring different measurement uncertainties (Box 1).

Box 1. MEASUREMENT UNCERTAINTY AND GOA-ON

A key goal for any observing network is to ensure that the measurements made are of appropriate quality for their intended purpose, and that they are comparable one with another- even though such measurements are made at different times, in different places, and in many cases by different instruments, maintained by different groups. It is thus as important to communicate the uncertainty related to a specific measurement, as it is to report the measurement itself. Without knowing the uncertainty, it is impossible for the users of the result to know what confidence can be placed in it; it is also impossible to assess the comparability of different measurements of the same parameter (de Bièvre & Günzler, 2003).

The term *uncertainty* (of measurement) has a particular technical meaning (ISO, 1993; Ellison & Williams 2012). It is a parameter associated with the result of a measurement that permits a statement of the dispersion (interval) of reasonable values of the quantity measured, together with a statement of the confidence that the (true) value lies within the stated interval. It is important not to confuse the terms *error* and *uncertainty*. Error refers to the difference between a measured value and the *true* value of a specific quantity being measured. Whenever possible we try to correct for any known errors; for example, by applying calibration corrections. But any error whose value we do **not** know is a source of uncertainty.

It is therefore essential to ascertain (and report) the *uncertainty* of measurements made as part of GOA-ON, and to characterize GOA-ON measurement quality goals in terms of such uncertainties. Hence GOA-ON must establish clear guidelines for estimating this uncertainty for each of the separate measurement procedures to be used in the Network, and ultimately must also emphasize the need for formal quality assurance procedures in the various participating laboratories responsible for the instruments comprising GOA-ON to ensure that the various measurements quality goals are met.

Throughout this document, the term "uncertainty" should be taken to mean the standard uncertainty of measurement; that is with the associated confidence interval equivalent to that for a standard deviation.

6.1 Data Quality Objectives

Conventionally, long-term sustained carbon observations have been the purview of carbon inventory and flux studies focused on documenting small changes within 'blue water', oligotrophic oceanographic settings over decadal time-scales. Such measurements demand an exacting quality necessary for identifying small changes over decadal time-scales. However, participants recognized that differing measurement quality goals are appropriate for the observations proposed here for observing ocean acidification depending on the intended application, the relative 'signal-to-noise' with respect to the environment and the processes being examined. For example, the uncertainty of measurement required for observations intended to track multi-decadal changes at a long-term time-series open ocean station is inherently different from the needs of data collected for determining the relative contributions of the acidification components within an estuary or to inform assessments of biological response. Each application has associated measurement quality goals that need to be met. Analogous to terminology adopted in atmospheric sciences, it was agreed at the Seattle workshop that the Network would provide separate measurement quality goals specific to "climate" and "weather", defined here (Box 2) both in general and in the context of ocean acidification.

Box 2. MEASUREMENT QUALITY GOALS FOR GOA-ON

"Climate"

- Defined as measurements of quality sufficient to assess long term trends with a defined level of confidence
- With respect to ocean acidification, this is to support detection of the long-term anthropogenically-driven changes in hydrographic conditions and carbon chemistry over multi-decadal timescales

"Weather"

- Defined as measurements of quality sufficient to identify relative spatial patterns and short-term variation
- With respect to ocean acidification, this is to support mechanistic interpretation of the ecosystem response to and impact on local, immediate OA dynamics

6.2 Data Quality Requirements

For GOA-ON to succeed at delivering its goals, observations must be of a verifiable quality and consistency. Three critical data quality requirements must be followed:

- Observations provided to the Network (whether measured, estimated, or calculated) will be accompanied by a statement of their uncertainty

- Observations will be calibrated to a community-accepted set of reference materials, when available
- All constants applied in the derivation of calculated parameters will be documented and reported, along with the units and scale. The uncertainties of such constants will need to be incorporated into the estimate of the uncertainty of each derived parameter.

7. System Design of the Global OA Observing Network: Measurements

7.1 Measurements for GOAL 1: understanding global OA conditions

Contributors to the GOA-ON will provide the hydrographic conditions and carbon chemistry data necessary to provide for:

i. At a minimum, a basic understanding of the local, immediate spatial and temporal OA dynamics (weather).
ii. Optimally, detection of the long-term anthropogenically-driven changes in hydrographic conditions and carbon chemistry over multi-decadal timescales (climate).

At each GOA-ON measuring site, a complete description of the seawater carbonate system will be needed. Such a description can be achieved in a variety of ways, involving alternate combinations of measurable parameters together with values for various equilibrium constants. Measurement quality goals are given below in terms of constraining the measurement uncertainty for the observed parameters used for calculating the saturation state of aragonite (a form of calcium carbonate).

7.1.1 GOAL 1 Level 1 Measurements

The following five parameters were considered to be the minimum suite of Goal 1 Level 1 measurement, applicable to all marine environments:

- Temperature
- Salinity
- Pressure(water depth at which measurement is made)
- Oxygen concentration
- Carbon-system constraint, achievable in a number of ways, including combinations of direct measurements and estimates of other parameters, such as nutrients (see further discussion below).

In addition, two further parameters were considered necessary, except where the platform is not appropriate or available for such measurements:

- Fluorescence
- Irradiance

The **weather** objective requires the carbonate ion concentration (used to calculate saturation state) to have a relative standard uncertainty of 10%. This implies an uncertainty of approximately 0.02 in pH; of 10 μmol kg^{-1} in measurements of total alkalinity and total dissolved inorganic carbon; and a relative uncertainty of about 2.5% in the partial pressure of carbon dioxide. Such precision should be achievable in competent laboratories, and is also achievable with the best autonomous sensors.

The **climate** objective requires that a change in the carbonate ion concentration be estimated at a particular site with a relative standard uncertainty of 1%. This is smaller than the uncertainty in the carbonate ion concentration itself, since uncertainties in the various equilibrium constants largely cancel out when estimating the uncertainty of the difference between two values.

It implies an uncertainty of approximately 0.003 in pH; of 2 μmol kg^{-1} in measurements of total alkalinity and total dissolved inorganic carbon; and a relative uncertainty of about 0.5% in the partial pressure of carbon dioxide. Such precision is only currently achievable by a very limited number of laboratories and is not typically achievable for all parameters by even the best autonomous sensors..

As noted above, observations provided by the Network will report corresponding values for the uncertainty in measured, estimated, and calculated parameters, regardless of quality objective. Observations will be calibrated using a community-accepted set of reference materials.

The addition of fluorescence and irradiance is because biological processes (primarily photosynthesis) may affect the chemical status of OA and its attribution to underlying mechanism. However, as noted above, not all platforms (such as underwater gliders) can accommodate these measurements. Thus, while these remain highly desirable Level 1 measurements, it is understood that in some cases, they will not be made.

Coral habitats: For habitats dominated by photosynthetic calcifiers (warm-water corals, coralline algae), in addition to the above 'generic' Goal 1 Level 1 measurements, the following additional measurements are considered necessary:

- Biomass of biota
  - Corals or coralline algae, other photosynthesizers (macro-algae, seagrasses)
- Changes in net ecosystem processes
  - Calcification/dissolution (NEC: net ecosystem calcification)
  - Production/respiration (NEP: net ecosystem production).

For non-photosynthetic cold-water corals, typically occurring at depths of 200-2000 m, it is highly desirable that biomass and changes in net ecosystem processes are also measured in a standardized way.

7.1.2 GOAL 1 Level 2 Measurements

The optimal suite of Goal 1 Level 2 measurements is conditional on site location, season, and hydrographic conditions; they are also question-dependent. Recommended measurements include:

- Nutrients
- Bio-optical parameters (beam C, backscatter, turbidity, absorption)
- Currents
- Meteorology
- Net community metabolism (NCM)
- Trace metals
- ^{18}O and ^{13}C
- Export production
- Particulate inorganic carbon (PIC) and particulate organic carbon (POC)
- Atmospheric pCO_2
- Phytoplankton species

In reality, some of these measurements are currently more likely Level 3 measurements (see definition, above), and that distinction may actually vary in different systems.

For warm-water coral habitats, the following measurements were specified as necessary in some areas or instances:

- Processes
    - Freshwater input
    - Nutrient input (especially for inshore reefs)
    - Sediment input
- Wind (for oxygen-derived NPP)

7.2 Measurements for GOAL 2: understanding ecosystem response to OA

There are two aspects when considering the interface of biology and ocean acidification:

i. What are biological responses to ocean acidification (i.e. how will ecosystems respond to OA with regard to metabolic rates, morphology, and community composition)?

ii. What effect does biology have on ocean acidification (i.e. how do species, communities and ecosystems affect local carbon chemistry)?

The second question needs to be considered in the context of both Goals 1 and 2. This question notes the biological contribution to pH and other aspects of carbonate chemistry. As reflected in the Goal 1 sections above, some biologically relevant measurements are required. Thus, fluorescence and light are defined as generic Goal 1 Level 1 measurements to help assess photosynthesis and respiration, along with

the other Goal 1 Level 1 measures, including oxygen (for hypoxia) and salinity (for freshwater input). While the remainder of the discussion in this section is focused on the first question only (Goal 2: the biological/ecosystem responses to OA), there is inherent coupling of these two questions.

In the context of Goal 2, a conceptual structure for the effects of OA on ecosystems is depicted in Figure 3 that illustrates direct effects of CO_2 and pH on organisms, as well as indirect effects of OA on ecosystems and ecosystem services.

GOA-ON will focus on specific measurements within this conceptual structure to resolve thresholds of response to ocean acidification in relation to site-specific baselines. Experimental work on biology plays an important role in determining which aspects of the marine ecosystem will likely be vulnerable to changing chemical conditions. While experiments are not explicitly part of GOA-ON since we are establishing an "observing" network, the role for experimental work is important to recognize. The Network will help inform experimental site selection, experimental laboratory treatment levels (identify conditions the species studied are already encountering in their natural environments) and rapidly changing eco-regions where more intensive, experimental study is needed. On the other hand, results from experimental work will be used to inform and update core observational parameters (e.g., identify aspects of the biological system that are most sensitive to OA, and aspects of the changing carbon chemistry (bicarbonate, saturation state, protons) that have greatest effect on biology) and may be used in combination with the chemical observing data to generate global biological vulnerability maps.

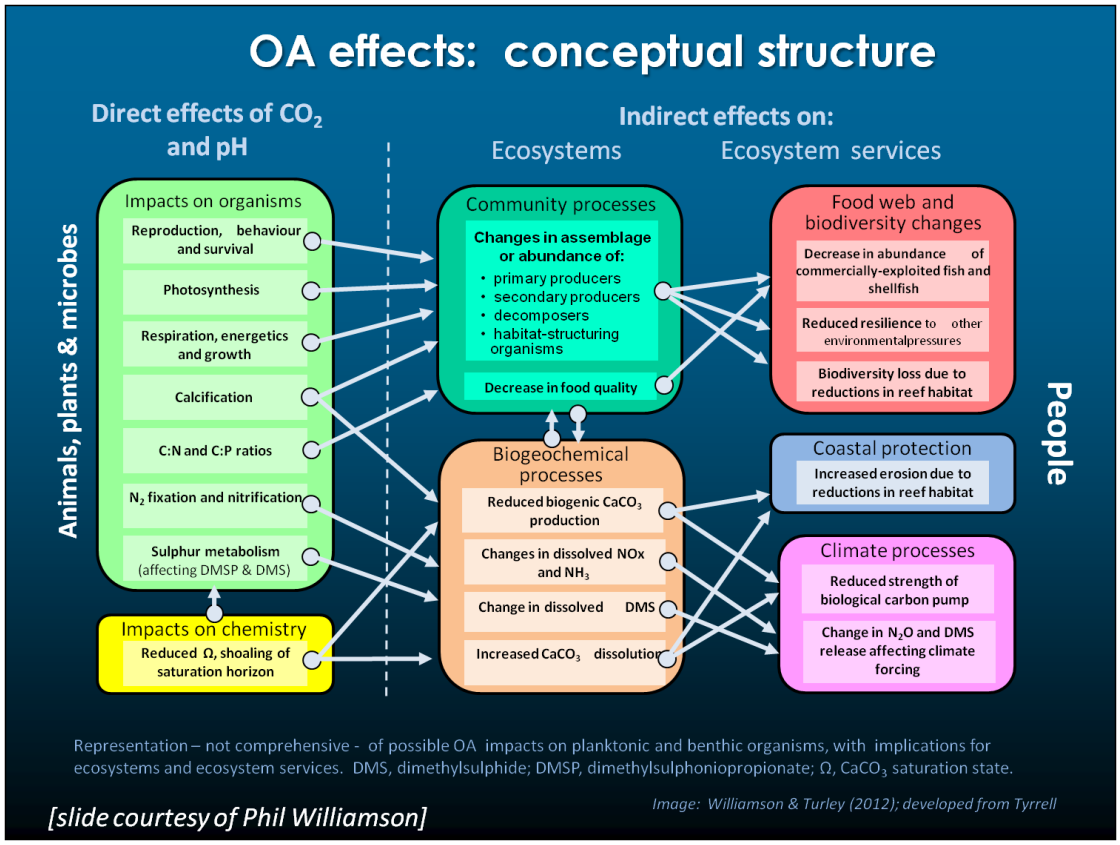

Figure 3. Conceptual model of the effects of ocean acidification on ecosystems illustrating direct effects of CO_2 and pH on organisms, as well as indirect effects of OA on ecosystems and ecosystem services (adapted from Williamson & Turley, 2012).

7.2.1 GOAL 2 Level 1 measurements

Addressing Goal 2 at the broadest scale requires the measurement of biomass or abundance of functional groups, listed below, contemporaneous with the physical and chemical measurements for Goal 1 that achieve at least 'weather' data quality.

- Biomass/abundance of:
  - Phytoplankton
  - Zooplankton
  - Benthic producers and consumers (shelf seas and nearshore)

Biomass of calcified versus non-calcified species is desired, as is measuring the timing of changes in abundance, e.g., blooms, community shifts, pigment changes. Zooplankton should include both micro- (e.g., protists) and meso- (i.e., multicellular) plankton as well as meroplankton, where applicable.

Recommendations for Goal 2 Level 1 measurements for broad climatic regions and specific ecosystem types are as follows:

Polar: Phytoplankton and zooplankton biomass/abundance; phytoplankton functional types; particulate inorganic carbon (PIC); sunlight (PAR)

Temperate: Phytoplankton and zooplankton biomass/abundance; calcified to non-calcified plankton abundance; phytoplankton functional types; PIC; sunlight (PAR)

Tropical: Phytoplankton and zooplankton biomass/abundance; size fractionated chlorophyll; sunlight (PAR); turbidity; colored dissolved organic material (CDOM)

Nearshore: Phytoplankton, zooplankton, and benthic producers and consumers abundance/biomass; calcified to non-calcified plankton and benthos abundance; chlorophyll; TSS/turbidity; CDOM (remote sensing); nutrients; sunlight (PAR).

Coral habitats: For Goal 2 Level 1, most of the necessary measurements for warm- and cold-water coral habitats have already been specified above under Goal 1 Level 1; i.e. biota biomass and distribution; net ecosystem calcification/dissolution; net primary production (if applicable), net production, and respiration rates. Additionally for Goal 2 Level 1, it is recommended to obtain information on:

- Biota: The population structure of corals; the population structure of macroalgae; the biomass, population and trophic structure of cryptobiota; population structure of urchins; and architectural complexity
- Processes: The NEP:NEC ratio, food supply rate and quality and bioerosion rates at specific sites.
- Habitat: Further characterization of the chemical habitat through sediment mineralogy/composition; organism mineral content; alkalinity anomalies; and the vertical profiles of saturation state over time (for cold-water corals)

7.2.2 GOAL 2 Level 2 measurements

Goal 2 Level 2 measurements primarily add measurements to help elucidate more information about the biota functional groups and responses to OA including:

- Processes and rates (e.g., production and export)
- Chemical speciation (e.g., C, N, P and phase)
- Species distributions (e.g., key species or groups)

For specific regions and ecosystem types, Goal 2 Level 2 recommendations are:

Polar: Primary production; export flux rate; net community production (NCP); net community calcification (NCC); nutrient uptake rates; taxonomy; sea algae

Temperate: Primary production; export flux rate; NCP; calcification rates; remineralization; dissolution; POC/DOC (size fractionated); PON/DON (size fractionated); TEP; POP; fatty acid measurements; benthic processes: burial deposition, benthic respiration, calcification, and production

Tropical: Primary production; export flux rate; NCP; DOC; DOM; N/P ratios; Nitrate/Phosphate; satellite imagery; algal pigments (HPLC); currents (ADCP); zooplankton vertical/spatial and temporal variation; zooplankton grazing rates

Nearshore: Phytoplankton primary production; pelagic and benthic NCP; community structure; trophic interactions/del O18; disease; phytoplankton species (for HABS include species and toxicity)

7.3 Measurements for GOAL 3: data to optimize modeling for OA

7.3.1 Global/Basin and Climate Scales

To improve the capacity of existing models to yield widespread information on global/basin scale ocean acidification status and trends, the following recommendations are made.

- Large scale surveys – a snapshot of ocean acidification conditions – are needed to constrain models; need to coordinate information at basin-scale, repeat hydrography, Voluntary Observing Ships, historical sections.
- Better spatial coverage of moorings with OA-relevant physical, chemical, and optical measurements; targeted process studies (rate measurements, budget, community structure) at time series stations and key locations to improve biogeochemical model structures and parameters.
- More Argo floats with bio-optical and chemical sensors (NPZD-O_2 floats) with temporal sampling frequencies appropriate to establishing interconnections of water masses.
- Extended spatial coverage of gliders, based on modeling simulations and experiments to establish new glider and survey sections.
- Connect global/basin ocean acidification conditions with shelf seas and coastal processes; use coastal OA observing networks and modeling capabilities to examine impact of coastal seas on the open ocean.

7.3.2 Shelf Seas/Coastal – Weather and Climate Scales

To improve our capability to use coastal models for physical, chemical, and biological applications relevant to OA and to optimize a coupled monitoring-modeling network for the coastal and shelf seas, the following recommendations are made.

- Make better use of regional and coastal physical modeling capabilities, especially near-real time and short-term (weather) forecasting information;

coastal OA observations provide necessary information to establish and improve physical-biogeochemical models.

- Evaluate and constrain model performance at ocean acidification observing locations (moorings, glider and survey sections); produce near-real time and short-term forecasts of OA conditions; extract and simplify model results to develop a set of usable OA indicators for the key locations.
- Based on physical-biogeochemical model results and numerical experiments, including observing system simulation experiments (OSSE), identify new ocean acidification observing locations and modify existing OA monitoring networks.
- Integrate ocean acidification measurements with water quality information (oxygen, nutrients/loading, turbidity, etc.) and plankton community structures (survey data, bio-optical and remote sensing measurements); incorporate this information into physical-biogeochemical models to produce 3D distribution on dominated temporal scales.
- Develop models for pelagic and benthic organisms with connections to the habitat and ocean acidification conditions; contribute to the development of ecosystem models to link with living marine resource management (integrated ecosystem assessment).

7.3.3 Warm-water Coral Systems – Weather and Climate Scales

To provide for the capability to assess ocean acidification impacts on coral reef systems the following recommendations are made.

- Very high spatial resolution (100 meters scale) circulation models for coral reef ecosystems need to be developed; these models will need to address connectivity related issues, linking with basin/regional models.
- Wave models should be incorporated into circulation models, which will address impact of extreme weather events.
- OA observing information is needed that constrains initial and boundary conditions for targeted reef systems (smaller spatial domain and shorter temporal simulations).
- There will need to be multiple model simulations and future projections of OA conditions and key physical processes (temperature, sea level, light, frequency and intensity of extreme events) for coral reef systems.
- Models must capture habitat conditions and ecosystems connections.

8. Global OA Observing Network Design: Spatial and Temporal Coverage

The current and proposed spatial and temporal coverage of GOA-ON is considered below with regard to three broad ecosystem domains: the open ocean, shelf seas and coasts (including estuaries and the nearshore), and warm-water coral reefs. Issues discussed include: the desired spatial and temporal resolution of the

measurements; identification of gaps and high vulnerability areas; and priorities for filling gaps or building capacity for new measurements.

8.1 Current status

8.1.1 Current status: Open ocean

On a global scale, the main building blocks of a network for assessment of ocean acidification in the open ocean are well established and quality-controlled by the ocean community (e.g., CLIVAR/CO_2 Repeat Hydrography Program (GO-SHIP) , OceanSITES, SOOP, SOCAT), but there is need for filling-in certain areas, some components lack sustained funds, and some components need enhancements.

8.1.2 Current status: Shelf seas and coasts

For these environments, a global network for assessment of ocean acidification needs construction. At the regional level, there are some systems in place with some ability to leverage OA observations on existing infrastructure (e.g., World Association of Marine Stations, International Long-Term Ecological Research Network), but also many gaps. These elements need a globally consistent design which must also be coordinated and implemented on a regional scale. In some areas, there is a need for significant infusion of resources and infrastructure to build the necessary capacity.

8.1.3 Current status: Coral reefs

For assessment of ocean acidification and its impacts on warm-water coral reefs, a globally consistent coral reef OA observing network needs construction. On a regional scale, there is some observing capacity in some regions but observing assets may not cover the extent of variability that organisms observe and should be supplemented by site-specific studies. The U.S. National Coral Reef Monitoring Program for Atlantic and Pacific coral reefs can serve as a model.

8.2 Recommendations for Spatial-Temporal Network Design

8.2.1 Network design recommendations: Open ocean

A framework for GOA-ON in the open ocean largely exists but components need further attention in order to bring this to full realization.

i. Utilize the **GO-SHIP** global plan (Figure 4) and similar research cruises for critical OA components of the Network. The existing repeat hydrography program provides essential foundation to establish OA conditions at global scale. Expansions include a sampling density sufficient to map aragonite saturation horizon and addition of bio-optical measurements for calibrating Argo floats.

ii. Participate in **VOS/SOOP** global plan (Figure 5; bimonthly temporal resolution at roughly 10-15° latitude spacing at some locations) and enhance

its coverage, especially to the southern hemisphere, Indian Ocean, Arctic, and other locations to be scoped.

iii. Contribute to **OceanSITES** deepwater reference stations (Figure 6; roughly half have OA sensors now) and enhance this plan to address gaps (e.g., high latitudes, Labrador Sea, South Pacific gyre, BATS, etc.) or keep operational (e.g., Japanese site at 60° S). High vulnerability sites with insufficient coverage include the Arctic, Southern Ocean, Coral Triangle, off Peru.

- To optimize this for the GOA-ON, the OA community could add/share funding, operational effort/cost/ship time/people, sensors, data processing/management, or in a few cases take ownership of complete moorings.

iv. Participate in ongoing developments to collect OA relevant data with sufficient quality from **floats,** such as Argo floats (Figure 7)**.**

- Comparison with ship-based measurements is essential to the success of this effort. Utilize a smaller number of additional biogeochemistry-ecosystem Argo floats (Figure 8) that would have shorter profile intervals (e.g. 6 hours) more relevant to biological processes (e.g. NPZD floats)

v. Contribute to development of **glider** technology for deployment, especially to target high vulnerability areas. Will need attention to address biofouling and depth restrictions for the subsurface gliders.

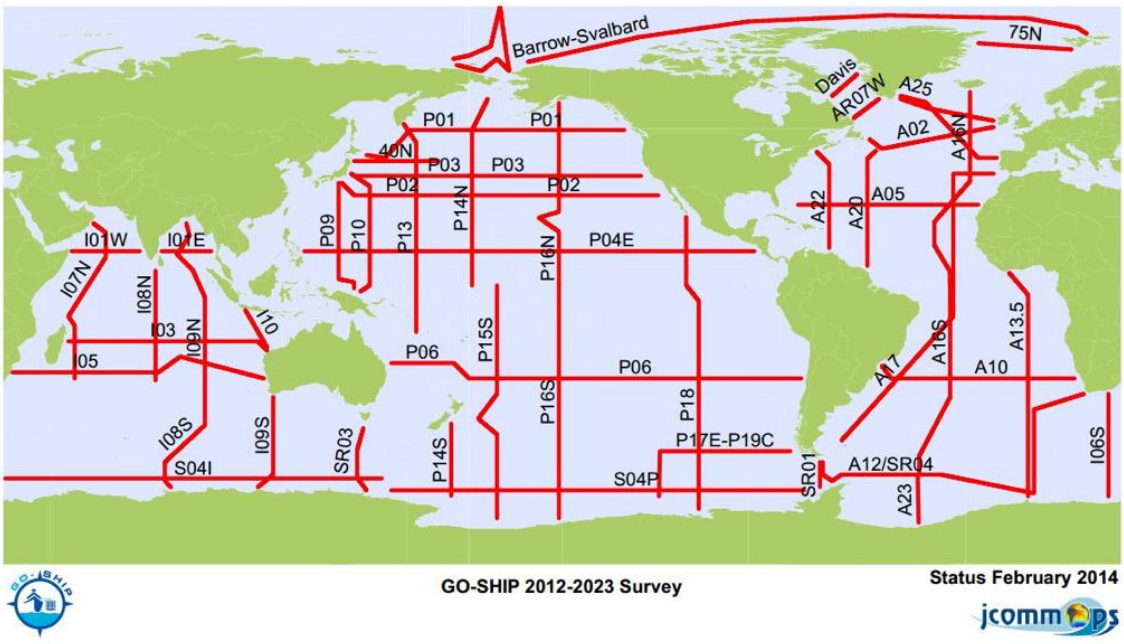

Figure 4. Map of GO-SHIP Repeat Hydrographic Surveys; current status as of February 2014 (from: www.go-ship.org).

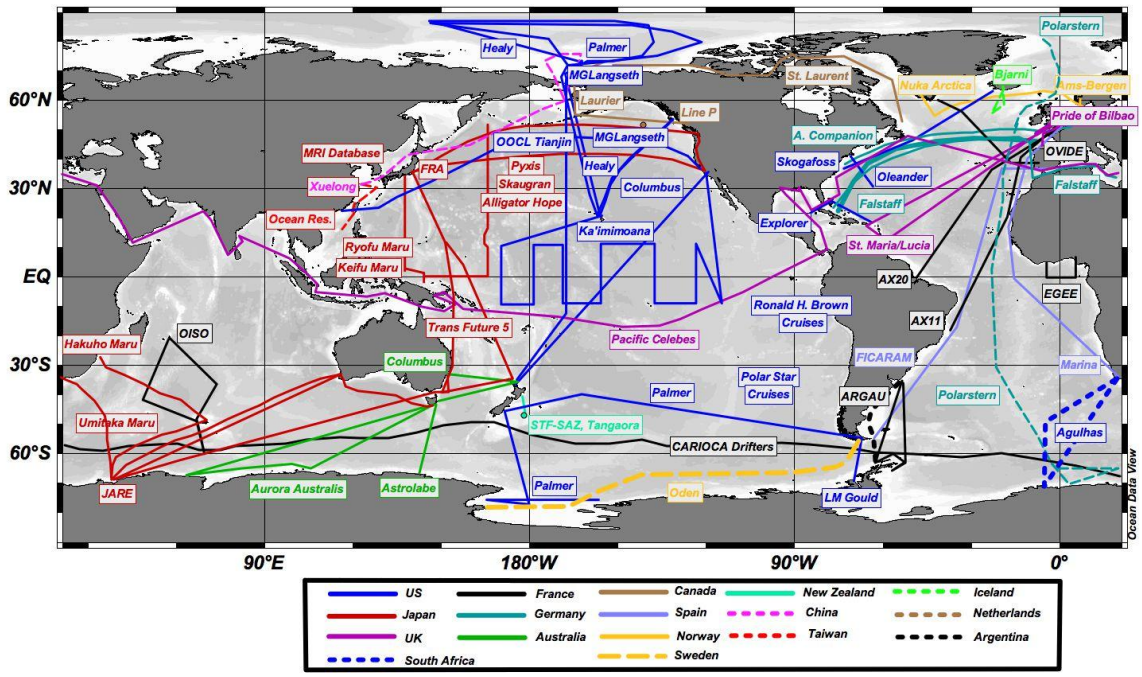

Figure 5. Map of global Ships of Opportunity/CO_2 cruise tracks for underway measurements, current status as of 2013.

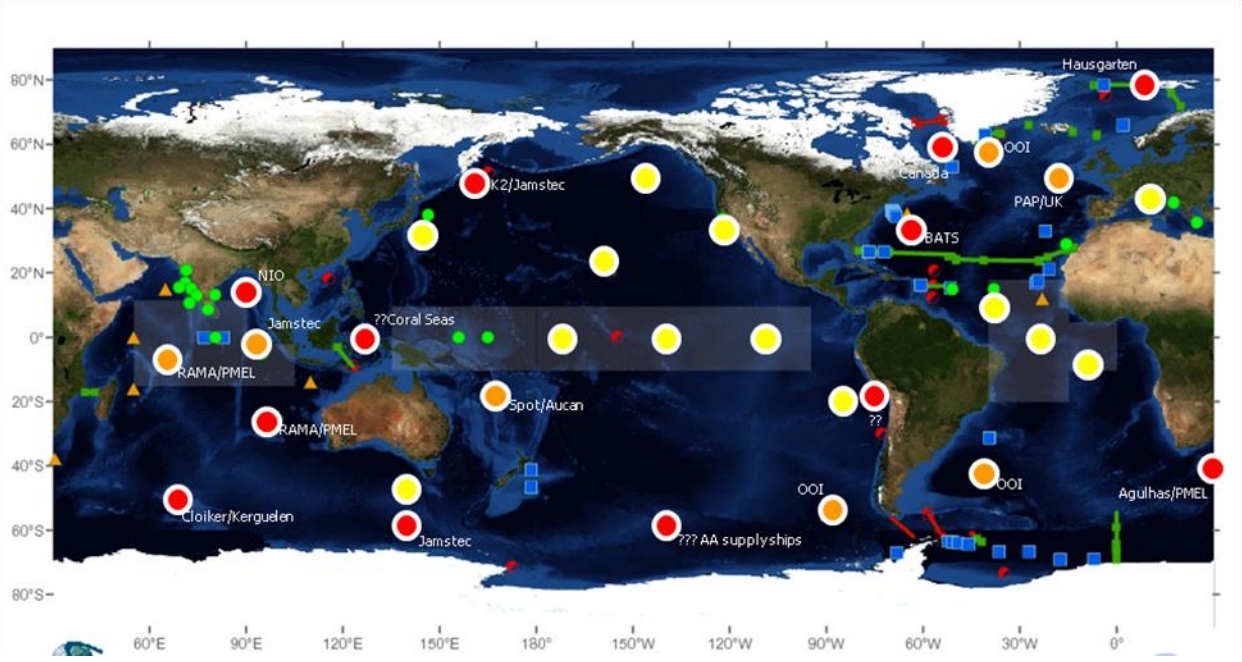

Figure 6. Map of OceanSites mooring locations for time-series measurements.
Color coding: Yellow = collecting some OA parameters in 2012; Orange = likely to happen in next year; Red = unlikely to happen without strong push from OA community.

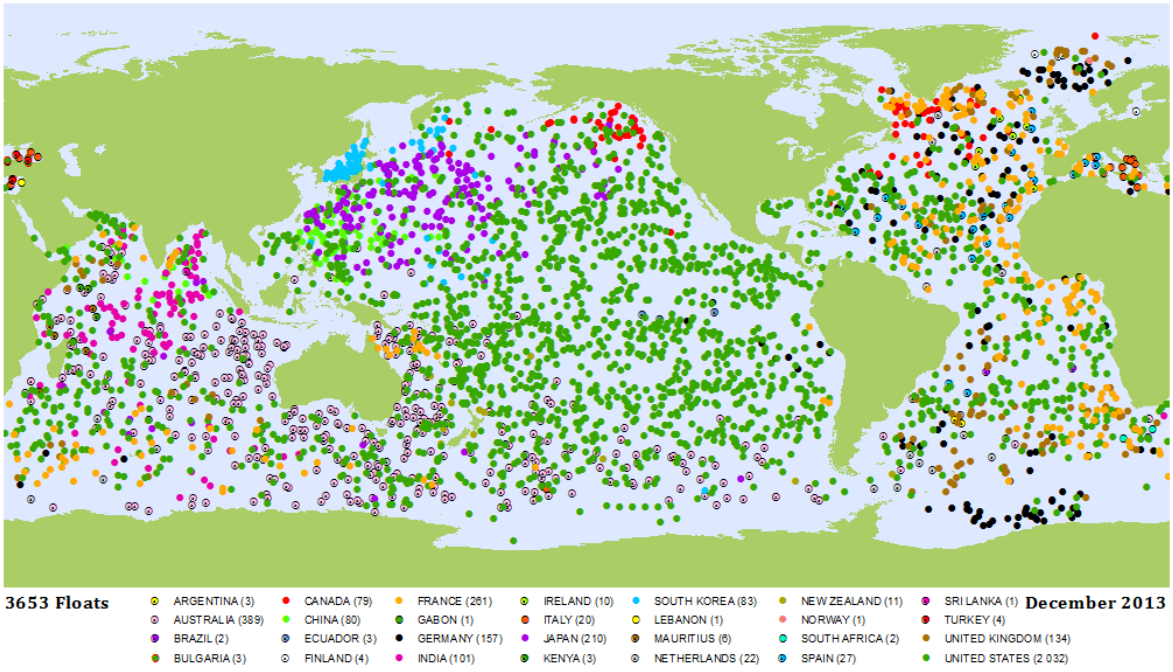

Figure 7. Map of ARGO Float locations, current status as of December 2013. Some of the floats are equipped with biogeochemical sensors, as shown in Figure 8.

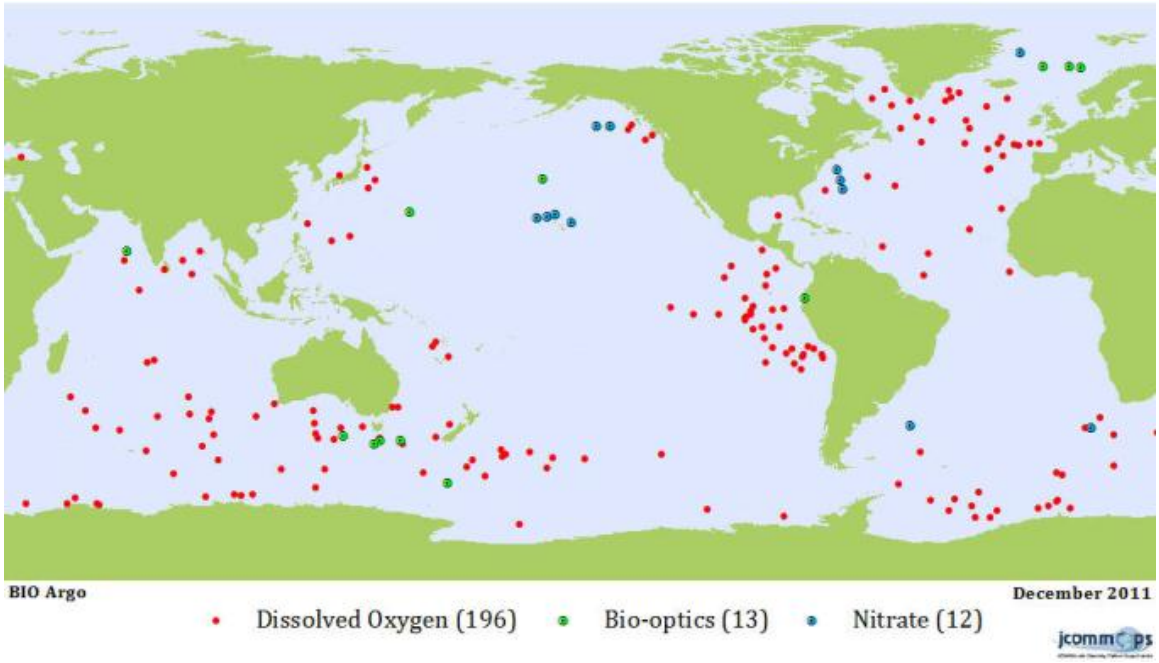

Figure 8. Map of ARGO floats with biogeochemical sensors, current status as of December 2011.

8.2.2 Network design recommendations: Shelf seas and coasts

The status of a Global OA Observing Network in the coastal area is much less developed than that for the open ocean. There is no existing framework for most regions and no global framework for coastal areas, so the Network's design needs a more fundamental approach.

i. Create OA capacity:
   - Make an inventory of current observing capacity and expand subset to include OA observations (building on existing OA or other related observing, where available)
   - Prioritize adding OA measurements on existing biological time-series, where variability is documented
   - Be proactive in treatment of geographic gaps (e.g., Africa, etc). Use statistical/quantitative analyses to target new assets to optimal locations, also to provide a means of filling gaps (data extrapolation in a resource-limited world)

ii. Aim for balanced representation:
   - Represent the full range of natural variability (and presumably ecosystem resilience); include high vulnerability areas and areas with important economic resources. For example, upwelling zones versus stable water column areas should both be captured. While the former may see lower pH in surface waters, organisms may be better adapted to variation, thus more resilient.

iii. Work within regions to optimize capacity and relevance.
   - Encourage use of coastal observational nodes as ideal locations to conduct explanatory process studies
   - Improve upwelling indices for nearshore areas (to indicate upward transport of deep waters, thus useful in creating proxy methods for extrapolating sparse observations across complex coastal zones)

8.2.3 Network design recommendations: Coral reefs

Capacity is adequate in some areas, but non-existent in others; a balance is needed for GOA-ON to be truly global.

i. Utilize current observing assets including moorings/buoys in:

   Hawaii (Kaneohe Bay), Bermuda (Hog Reef, Crescent), GBR (Heron Island) and Ningaloo (W Australia), Chuuk, Florida Keys (Cheeca Rocks), and Puerto Rico (La Parguera). However, these do not cover the extent of variability that organisms observe, nor do they provide any coverage of the Coral Triangle region or non-U.S. Caribbean, and thus should be supplemented.

ii. Aim for balanced representation, monitoring across gradients of latitude, biodiversity, warm vs. deep coldwater systems, relatively pristine vs. impacted.

iii. The observing system should also give us insight as to what reefs may look like in 50-60 yrs., so include natural-CO_2 seeps.

8.2.4 Network design recommendations: system wide

There are several items that the Network system design needs to address that are not specific to any one of the above ecosystem categories:

- Data coverage gaps – a global network cannot be global if not adequately distributed to all sectors of the globe. The current status is not adequate. To enforce the global character of the Network, spatial gaps have to be filled.
- 'Threatened' ecosystems – either due to proximity to perceived thresholds, rate of change in carbonate chemistry conditions, or socio-economic vulnerability of ecosystem, these systems should be observed via the Network. It is likely that the global OA community, perhaps under the auspices of the IOCCP and the OA-ICC, can focus attention on identifying those hot spots through a dedicated research effort.
- Ecosystem function – because OA is an environmental condition with implications for biota, the ecosystem function must be a focal point for observations. This calls for integration of physical, chemical, and biological sensing.
- Data and information access – data from the Network should be available to and linked with the broad community including those sectors of society that benefit from the data in making business and management decisions. The Reference User Group of the Ocean Acidification International Coordination Centre will become a focal point for bringing messages to industry, governments and the public.

9. Data Quality Objectives in the context of Goals and Sampling Platforms

The various sampling platforms currently available to the community are differentially suited to the first two GOA-ON goals and its two data quality levels.

- Data satisfying Goal 1 'climate' data quality criteria currently can only be obtained from direct analysis of water samples, typically necessitating sampling from cruises or SOOP. Thus, cruise and SOOP sampling, analyzed appropriately, more likely assures 'climate' quality data as well as offers sporadic validation of 'weather' quality measurements.
- Data of Goal 1 'weather' quality are often collected on moorings or fixed platforms, but must be calibrated, as noted above, by validation samples of 'climate' quality. The added benefit of mooring/fixed platforms is that these

platforms can be used to obtain high temporal resolution data that is useful for elucidating mechanisms of variation. Such high temporal resolution measurements are also valuable in the 'climate' context to verify means in highly dynamic systems i.e. to increase knowledge on representativeness of spot sampling from cruises.

- Goal 1 is also aided by 'weather' quality data obtained from gliders or floats yielding high spatial resolution data that is useful for assessing vertical variation (shoaling of saturation horizons) and elucidating mechanisms. The same caveats as for moorings/fixed platforms apply, that these should be calibrated.
- Data for Goal 2 currently requires cruise-based sampling for all variables, except for some indicators relevant to phytoplankton and production, e.g., fluorescence and Photosynthetically Active Radiation (PAR).

Needs: In order to accurately satisfy goals in all environmental regimes, the applicability of method to environment is key and having documentation thereof. Important examples mentioned are the:

- Need to prepare certified reference materials (CRMs) for other environments (low salinity).
- Assure capacity for CRMs matches demand as Network increases in size.
- Need to establish carbon system dissociation constants for lower salinity waters.
- Need for standard operating procedures (SOPs) for autonomous sensors and and clear guidelines as to appropriate quality control for such sensors.
- Need for detailed documentation of what people are doing, including validation, SOPs, metadata. It is the intent of GOA-ON to build access to these items via the GOA-ON map server.

10. Global OA Observing Network Products

An important output of the GOA-ON is informational products on OA status that can inform scientists, managers, policy makers, educators, other stakeholders and the public at large.

10.1 GOAL 1 priority products:

- Open ocean
  - Seasonally resolved global and regional surface maps of pH, DIC, total alkalinity, saturation states, pCO_2
  - Time series data from stations (e.g. interactive maps)
  - Decadal changes in pH, DIC, total alkalinity, saturation states, and pCO_2 from repeat hydrography
  - Export production (PIC, POC) below the winter mixed layer
  - Subsurface saturation maps

- Shelf seas and coastal
  - Seasonally resolved surface maps of pH, DIC, total alkalinity, saturation states, pCO_2
  - Time series data from stations (e.g. interactive maps)
  - Near-Real-Time data access
  - Alkalinity anomaly
  - Subsurface maps of pH, total alkalinity, saturation states, pCO_2

- Coral reefs
  - DIC/Alkalinity relationships for different sites
  - Biogeochemical model output at coral reef sites
  - Time series of alkalinity deviation from salinity

10.2 GOAL 2 priority products

These are desired ecosystem products from the GOA-ON, but recognizing that not all will be possible with Level 1 measurements only. Products would be spatially resolved and analyzed in relation to carbonate system variability.

- Benthic recruitment and recruitment variability
- Planktonic calcifiers (phyto- and zooplankton) abundance and variability
- PIC:POC (calcifiers:non-calcifiers) in planktonic and benthic organisms
- Phytoplankton biomass, primary production, and assemblage shifts
- Habitat compression/expansion of pelagic & benthic organisms
- Comparative resilience of managed vs. unmanaged ecosystems
- Susceptibility to phase shifts

11. GOA-ON Data Management

11.1 Data Sharing: Consensus vision and solutions to roadblocks

GOA-ON data sharing is essential to achieving the payoff of the Network. The consensus statement regarding sharing of ocean domain GOA-ON data approved by participants of both GOA-ON workshops is:

> "The participants in the Global OA Observing Network agree to support in principle the construction of a web portal that
> - builds on current capacity and capabilities,
> - accepts data streams from relevant data centers,
> - provides visual and data link capabilities, and
> - exhibits synthesis products for the ocean scale."

Recommended metrics for data sharing for ocean data from the GOA-ON were to:

- Provide the quality controlled data for synthesis products
  - 6 months (desired) – 2 years (longest possible) after collection
  - Work to accelerate the quality control (QC) process of these data
- Post on-line the near-real-time (NRT) data
  - Visual graphic of data (realistically possible)
  - Download of data (desired)
  - Work to accelerate the QC process of these data
- Provide the data via public web portal

It is recognized this is sometimes problematic in shelf seas and coastal waters, due to national policies. Additional roadblocks to data sharing were identified by the workshop; however, solutions were also identified (Box 3).

Box 3: ROADBLOCKS AND SOLUTIONS TO DATA SHARING

1. Data Quality Assurance/Quality Control: it takes time; there are no standardized procedures; capacity lacking
   - Solution: On the GOA-ON portal
     - Advertise Data Managers, e.g., CDIAC, better
     - Create standardized procedures for the Network
     - Engender trusting relationship between data providers and data managers
     - Post information on benefits of data sharing

2. Institutional boundaries or national regulations
   - Solution:
     - Develop terms of reference for Global OA Network
     - Network provides contacts for EEZ paperwork

3. There is no consistent data portal
   - Solution:
     - Develop a GOA-ON data portal

4. Scientists' reluctance to share data
   - Solution:
     - Publication, acknowledgement
     - Highlight examples of benefits on portal
     - Provide version control
     - Provide DOI for datasets

5. Funding insufficient
   - Solution:
     - Outreach to scientists regarding data expectations
     - Provide relevant products to users that are highly valued

11.2 Data Management Plan

There is opportunity for the GOA-ON Data Management Plan to build on an existing data management plan for ocean acidification that NOAA has developed with other U.S. agencies (including DOE, NASA, NSF, and USGS) and with academic

representatives. An "Interagency Ocean Acidification Data Management Plan: Draft One," has been developed and published on-line (NODC, 2012). The essence of that plan (also known as the "Declaration of Interdependence") was shared with the Seattle workshop participants, who welcomed it. The declaration is appended to this report (Appendix 3). There is ongoing activity led by the U.S. National Oceanographic Data Center (NODC) to begin implementing that plan.

The data management vision for GOA-ON, building on recommendations from both GOA-ON workshops, would provide effective long-term scientific data management using interoperable online data services allowing for human- and machine-to-machine data discovery and access. This vision includes specific considerations for:

- Providing data sharing time limits for coastal, shelf sea, and open ocean data.
- Deployment of a web data portal allowing optimal data discovery, access, integration, and data visualization from collection- to granular- level OA data and data products using common inter-operable web data services. This web portal would build on current capacity and capabilities, accepts data streams from relevant data centers, provides visual and data link capabilities, and synthesis data products for the ocean scale.
- A coordinated scientific data management and data flow framework that builds on existing infra-structure and scientific requirements over the long-term in coordination with the OA-ICC.
- Adoption of best practice metadata procedures/protocols following international standards (e.g., ISO) to facilitate data discovery, use of DOIs or similar identifiers to provide clear data provenance and attribution.
- Adopt international OA long-term archival centers for OA observational, biological, model data, and data products. These centers would provide data integration where possible using interoperable online data services consistent with the proposed web data portal.

12. GOA-ON Governance

A preliminary governance structure was established at the St Andrews workshop (Figure 9). It was decided that, until more formal arrangements are made, the organizing committee of the 2nd workshop would provide the basis for the GOA-ON Executive Council (see Appendix 4 for members). The main national and international entities directly represented on the Executive Council are expected to continue to provide both in-kind and direct support for GOA-ON organizational activities, including future meetings and staff involvement, with additional support potentially available for training, technological infrastructure and other forms of capacity building.

The roles for the core entities of GOA-ON included in the diagram below and as outlined in the St Andrews workshop include:

i. **OA observing activities, data, expertise and assets of global research community:** these components collectively represent the central and most important piece of the network which encompasses all the actual assets in the water, the data collected and, most importantly, the scientists who oversee their operation and interpret the data.
ii. **National and Regional Funders:** will provide the human, technical and financial resources for the actual implementation of the observing assets around the globe. Several, such as US/NOAA and University of Washington, Aus/CSIRO and UK/NERC, are represented on the Executive Council. Staffing for the GOA-ON website and for management of the network will likely be provided by national funders but may also be supported by the ICC.
iii. **OA- International Coordination Centre:** will coordinate across international scientific efforts from sharing of scientists and expertise across national observing efforts, development of standardized data management approaches and capacity building for developing countries. The global observing network is a primary task in the ICC project.
iv. **International Atomic Energy Agency:** will support the OA-ICC project as its parent body but will also support development of new scientific observing capacity in under-observed regions through its global capacity building networks.
v. **Blue Planet task of the Group on Earth Observations**: includes an activity focused on the GOA-ON and provides access to: 1) novel international audiences (Departments of Environment, for instance) and 2) their scientific networks in developing regions.
vi. **Global Ocean Observing System**: is current developing the Framework on Ocean Observing which will also guide the GOA-ON requirements. GOA-ON scientists are participating in the biogeochemical panels for the FOO.
vii. **Intergovernmental Oceanographic Commission**: will support the GOOS as its parent body but also has its own Ocean Acidification project which will, in near term, work on organizing the next GOA-ON scientific meeting. Further it will connect other international initiatives on biogeochemical ocean observation with the GOA-ON.
viii. **International Ocean Carbon Coordination Projects**: will, through its Ocean Acidification task, coordinate: the development of the requirements for the biogeochemical essential ocean variables for GOOS (see above) and with other international carbon observing efforts.

The Executive Council is charged with ensuring the core functioning of the Network. Its responsibilities include:

- Finishing the Plan including soliciting input from the broader membership (by May 2014)
- Overseeing the process for further refinement of Plan
- Maintaining the Network membership
- Networking with other relevant international bodies
- Developing resources for certain geographic areas of high concern

- Ensuring international data management, to provide centralized access to distributed data centers
- Keeping the map (currently supported by NOAA PMEL and NOAA OAP) of OA observing assets robust, current, and useful
- Encouraging development of synthesis products based on data from GOA-ON
- Providing transboundary (across national boundaries) scientific sharing to ensure high quality observing

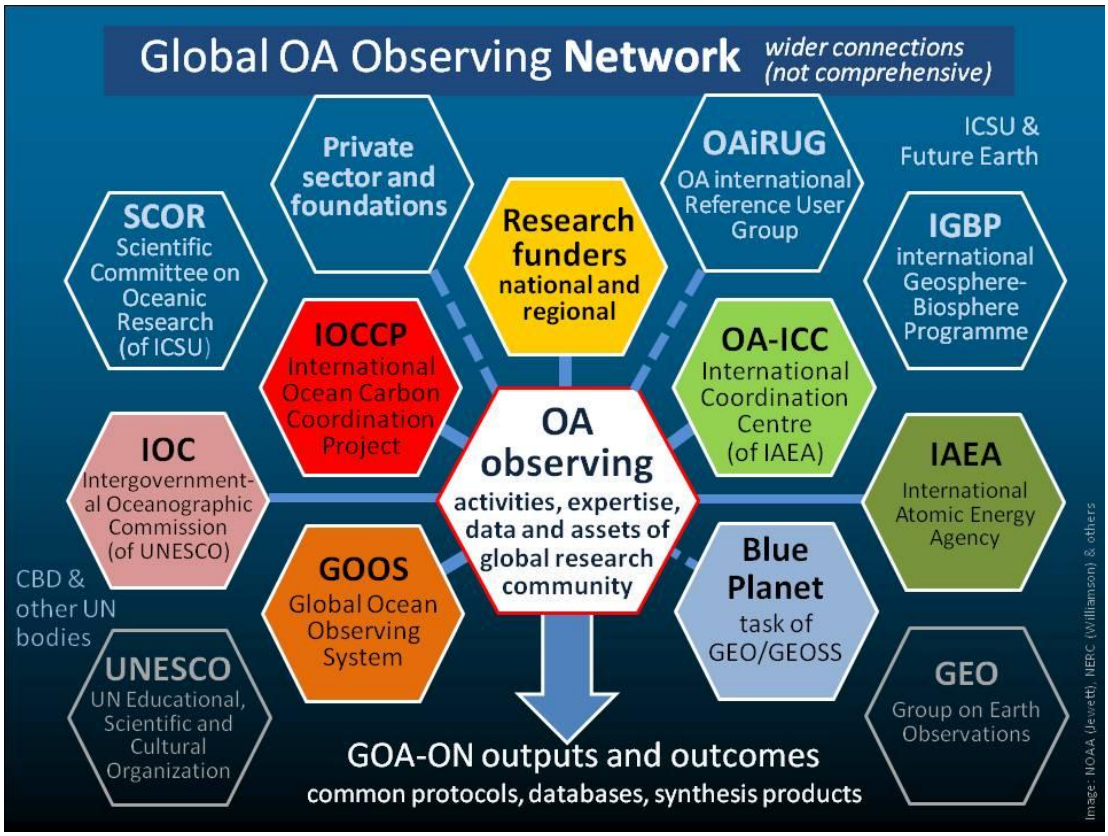

Figure 9. Representation of the basic matrix constituting GOA-ON and the primary entities responsible. The entities represented by colored shapes are represented on the Executive Council and have committed to providing either direct or in-kind support to core organizing activities. The outlined shapes are parent bodies.

13. GOA-ON Support Requirements

GOA-ON needs to support, or facilitate the support of, a functional Network in its entirety. The Network is not just sensors in water; it also requires support for all of the following capacities:

- Physical infrastructure, i.e., the platforms and sensors
- Operations and maintenance, i.e., the humans to run the network and keep it functioning

- Data Quality Assurance/Quality Control (QA/QC), i.e., the standards and application thereof to keep the data quality suitable to the intended use.
- Analytical and synthesis activities, i.e., the humans and models to analyze the data, synthesize it into useful data products, and interpret and publish its significance to a variety of audiences
- Capacity, i.e., the new infrastructure and job force that will have to be built and provided for in order to bring GOA-ON to a global reality.

It is recognized that individual countries are likely most interested in what is happening within their respective national waters and may provide financial resources to support the network when systems are located locally. However, deployment of observing assets **needs to be preceded** by identification of local or regional scientific expertise to support the deployment.

14. GOA-ON Web Portal

Participants in the Network have agreed to support the GOA-ON web portal (http://www.goa-on.org/), currently maintained by US NOAA PMEL, which provides:

- A detailed overview of the GOA-ON goals, elements, governance, and network members, with relevant links to each of the components
- A visual and interactive map representation of the platforms in the network, building upon current capacity and capabilities; the interactive component for each platform will include:
    - a detailed summary of the project
    - a direct link to the project website(s)
    - a list of the parameters being measured
    - direct links to original data at data centers and/or project websites
    - direct links to data synthesis products
- Visual and data link capabilities to process studies, manipulative experiments, field studies, and modeling activities
- Clear links to existing data centers and data management plans
- Access to graphics, data, and GOA-ON data synthesis products for a variety of users with specific OA information needs
- Links to workshops, references, and other relevant GOA-ON activities
- A means for new participants to join the GOA-ON

Forthcoming links from the web portal will provide information on agreed upon data QC protocols, and access to future GOA-ON data synthesis products

15. GOA-ON Outcomes and Applications

The outcomes from GOA-ON are globally distributed quality-assured data, near-real-time data, and data synthesis products that:

- Facilitate research (new knowledge) on OA and its drivers

- Communicate status of OA and biological response
- Enable forecasting/prediction of OA conditions

These OA data can be used to provide relevant products to variety of users. Specific applications with information needs relevant to OA are:

- Scientific inquiries;
- International policy especially carbon emission policies;
- Education and outreach as related to forecasts;
- Socio-economic impact forecasts;
- Potential fisheries impacts;
- Cultural impacts
- Insurance on fisheries yields
- Coral reefs and livelihood, especially developing countries
- Regulatory needs
- International food and economic security
- Shellfish aquaculture (widespread globally) adaptation strategies;
- Shore protection, tsunami protection as related to implications for coral reefs
- Tourism as related to coral reef and marine habitat degradation

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Appendix 1. Global OA Observing Network workshop participants

[1]Seattle, WA; [2] St Andrews, UK; [a]Organizing Committee; [b]Steering Committee

Rebecca Albright[1] - Australian Institute of Marine Science

Simone Alin[1] - NOAA Pacific Marine Environmental Laboratory, USA

Leif Anderson[1] - University of Gothenburg, Sweden

Andreas Andersson[1, 2] - Scripps Institution of Oceanography, USA

Yrene Astor[1] - Estacion de Investigaciones Marinas de Margarita, Venezuela

Kumiko Azetsu-Scott[1b, 2] - Bedford Institute of Oceanography, Canada

Dorothee Bakker[2] - University of East Anglia, UK

Nick Bates[1, 2] - Bermuda Institute of Ocean Sciences

John Baxter[2] - Scottish Natural Heritage, UK

Richard Bellerby[2] - NIVA, Bergen, Norway

Liesbeth Bouwhuis[2] - UK Science & Innovation Network, The Netherlands

Rusty Brainard[2] - NOAA-CRED, USA

Paul Bunje[2] - X-PRIZE Foundation, USA

Darius Campbell[2] - Oslo-Paris Commission (OSPAR)

Louis Celliers[1] - Council for Scientific and Industrial Research, South Africa

Carolina Cantoni[2] - CNR-ISMAR, Trieste, Italy

Fei Chai[1, 2] - University of Maine, USA

Suchana Apple Chavanich[2] - Chulalongkorn University, Thailand

Arthur Chen[1, 2a] - National Sun Yat-sen University, Taiwan

Liqi Chen[1, 2] - State Oceanic Administration, Xiamen, China

Melissa Chierici[1, 2] - Institute of Marine Research, Norway

Jim Christian[1] - Institute of Ocean Sciences, Canada

Cathy Cosca[1, 2] - NOAA Pacific Marine Environmental Laboratory, USA

Sarah Cooley[1] - Woods Hole Oceanographic Institute, USA

Julia Crocker[2] - Plymouth Marine Laboratory, UK

Kim Currie[1,2] - National Institute of Water and Atmospheric Research, New Zealand

Eric de Carlo[2] - University of Hawaii, USA

Andrew Dickson[1, 2] - Scripps Institution of Oceanography, USA

Sam Dupont[1, 2] - University of Gothenburg, Sweden

Vicky Fabry[2] - California State University, San Marcos, USA

Richard Feely[1a,b, 2a,b] - NOAA Pacific Marine Environmental Laboratory, USA

Helen Findlay[1, 2] - Plymouth Marine Laboratory, UK

Albert Fischer[1a,b, 2a] - UNESCO - Intergovernmental Oceanographic Commission, France

Agneta Fransson[2] - Norwegian Polar Institute, Norway

Gernot Friederich[1] - Monterey Bay Aquarium Research Institute, USA

Hernan Garcia[1, 2] - National Oceanographic Data Center, USA

Michele Giani[2] - OGS Trieste, Italy

Dwight Gledhill[1, 2] - NOAA Ocean Acidification Program, USA

Lina Hansson[2a] – OA-ICC International Atomic Energy Agency, Monaco

Burke Hales[1, 2] - Oregon State University, USA

Naomi Harada[2] - JAMSTEC, Japan

Claudine Hauri[2] - University of Alaska, USA

J. Martin Hernandez Ayon[1,2] - University Autonoma de Baja California, Mexico

Kirsten Isensee[2a] - Intergovernmental Oceanographic Commission - UNESCO

Masao Ishii[2] - Meteorological Research Institute, Japan

Libby Jewett[1a,b, 2a,b] - NOAA Ocean Acidification Program, USA

Truls Johannessen[1] - University of Bergen, Norway

Se-Jong Ju[2] - KIOST, Ansan, Rep Korea

Rodrigo Kerr[2] - University Federal do Rio Grande, Brazil

Robert Key[1] - Princeton University, USA

Caroline Kivimae[2] - NOC Southampton, UK

Terrie Klinger[2] - University of Washington, USA

Alexander Kozyr[1,2] - Carbon Dioxide Information Analysis Center, USA

Nelson Lagos[1,2] - Universidad Santo Tomas Santiago de Chile

Kitack Lee[1b] - Pohang University, Korea

Choon Weng Lee[2] - University of Malaya, Malaysia

Nathalie Lefèvre[2] - L'Ocean-IPSL, IRD, France

Jane Lubchenco[2] - Oregon State University, USA

Jian Ma[1,2] - State Key Laboratory of Marine Environmental Science, Xiamen University, China

Derek Manzello[2] - NOAA-AOML, USA

Jeremy Mathis[1, 2a,b] - University of Alaska during workshop 1; NOAA PMEL during 2, USA

Emilio Mayorga[1] - University of Washington/APL/NANOOS, USA

Evin McGovern[2] - Marine Institute, Ireland

Bruce Menge[1,2] - Oregon State University, USA

Colin Moffat[2] - Marine Scotland Science, UK

Pedro Monteiro[2a] - Council for Scientific and Industrial Research, South Africa

Enrique Montes-Herrara[2] - University of South Florida, USA

Akihiko Murata[1, 2] - Japan Agency for Marine-Earth Science and Technology, Japan

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Benjamin Pfeil[1] - University of Bergen, Norway

Ulf Riebesell[2] - GEOMAR Kiel, Germany

Aida F. Rios[2] - CSIC-Instituto de Investigaciones Marinas, Spain

Lisa Robbins[1] - U.S. Geological Survey, USA

Murray Roberts[2] - Heriot-Watt University, UK

Chris Sabine[1] - NOAA Pacific Marine Environmental Laboratory, USA

Joe Salisbury[1b, 2] - University of New Hampshire, USA

Eduardo Santamaria del Angel[1] - Universidad Autonoma de Baja California, Mexico

Ute Schuster[1, 2] - University of East Anglia, UK

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Stefania Sparnocchia[1] - Istituto di Scienze Marine, Italy

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Colm Sweeney[1] - NOAA Earth System Research Laboratory, USA

Toste Tanhua[1] - Leibniz Institute of Marine Sciences (IFM-GEOMAR), Germany

Kathy Tedesco[1a,b, 2] - International Ocean Carbon Coordination Project, France

Maciej Telszewski[1, 2a] - International Ocean Carbon Coordination Project, France

Rob Thomas[2] - British Oceanographic Data Centre, UK

Bronte Tilbrook[1b, 2a] - Commonwealth Scientific and Industrial Research Organisation, Australia

Rodrigo Torres[1, 2] - Centro de Investigacian en Ecosistemas de la Patagonia, Chile

Carol Turley[2] - Plymouth Marine Laboratory, UK

Jorges Luis Valdes[2a] - UNESCO

Cristian Vargas[1b, 2] - Universidad de Concepcion, Chile

VSS Sarma Vedula [1, 2] - National Institute of Oceanography, India

Pamela Walsham[2] - Marine Scotland Science, UK

Aleck Wang[2] - WHOI, USA

Rik Wanninkhof[1, 2] - NOAA Atlantic Oceanographic and Meteorological Laboratory, USA

Andrew Watson[2] - University of Exeter, UK

Wendy Watson-Wright[2] - Intergovernmental Oceanographic Commission - UNESCO

Sieglinde Weigelt-Krenz[2] - BSH Hamburg, Germany

Steve Weisberg[1b] - Seattle Workshop Facilitator

Steve Widdicombe[1, 2] - Plymouth Marine Lab, UK

Phil Williamson[1, 2a,b] - Natural Environment Research Council/University of East Anglia, UK

Alette Yniguez[2] - University of the Philippines, The Philipines

Appendix 2. Schedules of the Seattle and St. Andrews GOA-ON workshops

Appendix 2.1 Seattle Workshop Agenda

Day 1: 26 June 2012

08:15 - 09:00: Workshop Introduction: Welcome, Logistics, and Opening Remarks: Jan Newton (UW-NANOOS, Workshop Leader) and Steve Weisberg (SCCWRP, Workshop Facilitator); Dean Lisa Graumlich, College of the Environment, University of Washington; Clark Mather on behalf of Congressman Norm Dicks, U.S. House of Representatives

09:00 - 10:15: Session A: What is a Global Ocean Acidification Observing Network and why do we need one?

The purpose of this session is to address and discuss the following questions:

1. What has been the activity to date regarding a global ocean acidification observing network and why is one needed?
2. What are the likely benefits to the various stakeholders (academic, governmental, and commercial) that could be provided by global ocean acidification observing network?
3. What kind of ocean acidification observing network is needed to provide such benefits?
4. How can it be coordinated at the international level?

Overview talk: "What are the benefits of a Global Ocean Acidification Observing Network?" by Libby Jewett, NOAA OA Program Director, (9:00 – 9:20) followed by Plenary Discussion (9:20 – 10:15).

10:30 - 12:00 Session B: Network Design: Building from existing programs and assessing strategic needs for new locations

The purpose of this session is to address and discuss the following questions:

1. What are the existing global carbon observing efforts?
2. How do we define Tier 1 and Tier 2 measurements?
3. What are the obvious gaps in existing efforts when viewed as a global ocean acidification observing network?
4. What should a global ocean acidification observing network consist of (survey cruises, moorings, floats, gliders, etc) and where should assets be located?

Overview talk: "What are the possible components of an ocean acidification network based on existing resources?" by Richard Feely, NOAA PMEL, (10:30 – 11:15) followed by Plenary Discussion (11:15 – 12:00).

13:00 - 17:00 Session C: Global Ocean Acidification Observing Network System Design: *1. Definition*

The purpose of this session is to define attributes of the observing network system design.

13:00 Charge to Breakout Groups – Jan Newton/Steve Weisberg

13:30 - 15:00 **Breakout Session I: Defining the Global Ocean Acidification Observing Network's System Design**

Breakout Group 1: Time Series Measurements and Platform Location Network Design:
This group will focus from a temporal and spatial perspective, what scales need to be accounted for in the system design. They will focus on questions 2 & 3. They will also focus on the rationale for the observations in various regions.

Uwe Send, Simone Alin, Maciej Telszewski

Breakout Group 2: Physical/Chemical Measurements Network Design:
This group will focus from a physical/chemical disciplinary perspective, what measurements need to be accounted for in the system design. They will focus on question 1, but also 2 and 3.

Andrew Dickson, Burke Hales, Kitack Lee

Breakout Group 3: Biological Measurements Network Design:
This group will focus from a physical/chemical disciplinary perspective, what measurements need to be accounted for in the system design. They will focus on question 1, but also 2 and 3.

Bruce Menge, Rebecca Albright, Joe Salisbury

Questions to be addressed by each group:

1. What minimum physical, chemical and biological parameters (Tier 1 and Tier 2) should be measured for each platform? Where? At what depths?

2. What is the desired spatial and temporal resolution of these measurements?

3. Where are the gaps in present observing systems? Where are the areas of high vulnerability? Where do we need new measurements?

15:30 - 17:00 **Continue Breakout Session C**

Day 2: 27 June 2012

08:30 - 11:30 Session C: Global Ocean Acidification Observing Network System Design: *2. Group Consensus* - Steve Weisberg, Facilitator

The purpose of this session is to hear back from breakout groups re the observing network system design and to reach consensus and/or identify unresolved issues.

08:30 - 10:00 **Breakout Group Reports** (30 min per group)
10:30 - 11:30 **Plenary Discussion** to reach consensus on Observing System Design and/or identify unresolved issues

11:30 - 12:00 Session D: Data Quality Control and Validation for the Global OA Observing Network in the context of International Coordination: *1. Current International Network Coordination*

The purpose of this session is to introduce the current level of international OA network coordination.

Presentation by Richard Feely for Jean-Pierre Gattuso, Chair, SOLAS-IMBER Ocean Acidification Working Group

13:30 - 17:00 **<u>Session D</u>: Data Quality Control and Validation for the Global OA Observing Network in the context of International Coordination: *<u>2. Data Quality Control and Validation</u>***

The purpose of this session is to address and discuss the following questions:

1. What are appropriate data quality goals for the proposed measurements?
2. What activities are required to achieve these goals?
3. What should be the network system requirements for data availability and data management? (e.g., data delivery schedule, metadata, data archival centers)
5. What data synthesis efforts are essential to achieve the benefits of the observing system?

Overview talk: "What are the possible guidelines for data quality control and validation?" by Hernan Garcia, NODC, and Emilio Mayorga, NANOOS-IOOS, (13:30 – 14:00) followed by Plenary Discussion (14:00 – 14:30).

14:30 - 15:30 **Breakout Session II. Defining Data Quality Control and Validation for the Global OA Observing Network in the Context of International Coordination**

The purpose of this session is to define data QC and validation attributes of the observing network system design.

14:30 Charge to Breakout Groups – Jan Newton/Steve Weisberg

<u>Breakout Group 1</u>: Cruises and Ships of Opportunity
Benjamin Pfeil, Hernan Garcia, Cathy Cosca

<u>Breakout Group 2</u>: Fixed Platforms (e.g., Moorings & Piers)
Mark Ohman, Adrienne Sutton, Simone Alin

<u>Breakout Group 3</u>: Floats and Gliders
Jeremy Mathis, Libby Jewett, Jenn Bennett

Questions to be addressed by each platform-defined group:

1. What are appropriate data quality goals for the proposed Tier 1 and Tier 2 measurements on each platform?
2. What data quality requirement system is needed to achieve goal?
3. What should be the network system requirements for data availability and data management? (e.g., data delivery schedule, metadata, data archival centers)
4. What are potential data products and strategies for the required data synthesis needed to make the products?

16:00 - 17:00 **Continue Breakout Group Discussions**

Day 3: 28 June 2012

08:00 - 10:15 Session D: Data Quality Control and Validation in context of International Coordination: *3. Group Consensus*

The purpose of this session is to hear back from breakout groups re the data QC and validation needs for the network and to reach consensus and/or identify unresolved issues.

08:00 - 09:30 Breakout Group Reports (30 min per group)

09:30 - 10:15 Plenary Discussion to reach consensus on Data QC/V in context of International Coordination and/or identify unresolved issues

10:45 - 12:00 Session E: International Data Integration and Network Coordination

Plenary Discussion on the International Coordination for Data and Network Integration – Steve Weisberg, Facilitator

The purpose of this session is to identify if we have consensus on data sharing and what roadblocks inhibit data integration and network coordination.

Presentation by Jan Newton of the "Declaration of Interdependence" from the Consortium for the Integrated Management of Ocean Acidification Data (CIMOAD)

Group poll: Do we have consensus to share data?

Identify roadblocks inhibiting data integration and network coordination on an international scale (take individual participant contributions)

1. What are ideas to overcome identified roadblocks?
2. How will we ensure that the discrete observing efforts become a network?
3. Should there be an official structure or a more organic collective?
4. What actions are needed to better integrate and coordinate the observation network?
5. What actions are needed to better integrate and coordinate data access?

13:00 - 15:30 Session F. Future Planning

The purpose of this session is to identify if we have consensus on vision for network and what next steps are.

1. Looking at the current/planned observing system vs. the vision for the system we have identified here to address gaps, do we a consensus view?
2. What tasks should be done first to move this effort forward?
3. What infrastructure will be needed to achieve this?
4. What has not been resolved and how shall this be addressed?
5. What is an appropriate timeline, with milestone steps, for implementation of the network?
6. How should we define the network association and what is the most efficient way to integrate efforts in the future? (e.g., regular meetings, website, steering committee, etc.)

16:00 - 17:00 Workshop Summary: Recap Action Items and Identify Points of Contact for follow-up

Appendix 2.2 St. Andrews Workshop Agenda

Day 1: 24 July, 2013 **Joint session of UKOA ASM and GOA-ON workshop**

13.30 **Ocean acidification research in a wider context**

Chair: Carol Turley

1. From national to international, from science to policy (*Phil Williamson*)
2. Awareness and action on ocean acidification (*Jane Lubchenco*)
3. Environmental protection in the North Atlantic (*Darius Campbell, Executive Secretary, OSPAR Commission*)
4. Framework for ocean observing and ship-based time series aiding the design of a global OA observing network (*Maciej Telszewski*)
5. Update on the OA International Coordination Center (*Lina Hansson*)
6. Promoting technological advances: the X-Prize (*Paul Bunge*)

Discussion

15.20 **The development of a global ocean acidification observing network**

Chair: Bronte Tilbrook

1. Why we need a global OA network (*Wendy Watson-Wright, Executive Secretary IOC/UNESCO*)
2. Where we are now: outcomes from Seattle 2012 *(Jan Newton)*
3. An introduction to the global OA observing asset map (*Cathy Cosca)*

Discussion: where we want to be

16.30 **Global observing of ocean acidification and ecological response**

Chair: Arthur Chen

1. Observing OA in regional seas: a modeller's perspective (*Jerry Blackford*)
2. OA processes and impacts in US coastal waters (*Richard Feely*)
3. Observing OA in upwelling regions off South America (*Rodrigo Torres & Nelson Lagos*)
4. Observing OA and its impacts in the Pacific-Arctic (*Jeremy Mathis*)
5. Observing OA and its impacts in the Southern Ocean (*Pedro Monteiro*)

Discussion

18.00 Session ends

Day 2: 25 July 2013 **GOA-ON Workshop**

08.40 **Aims and objectives of the workshop – and the network**

Chair: Libby Jewett

1. Goals for the meeting (*Jeremy Mathis and Phil Williamson*)

Discussion: Defining how the network will operate – and what it will

deliver

09.30 **Best practice for analytical chemistry** (Goal 1, Level 1)

1. Review best practices for OA chemistry ('weather' v 'climate') as decided at Seattle (*Andrew Dickson*)
2. Comparison of carbonate chemistry software packages – and implications for GOA-ON (*Jim Orr*)

Discussion

10.00 **Short presentations on physico-chemical variability (and how it may be affected by biology) in specific environments**

Chair: Maciej Telszewski

What are the key science issues relevant to establishing long-term observing programmes?

- Shelf seas: from sea surface to sediment (*Kim Currie)*
- Riverine influences on coastal systems (*Joe Salisbury*)
- Polar-specific issues (*Liqi Chen*)
- Tropical-specific issues (*Moacyr Araujo*)

Discussion

Short presentations on ecosystem response to OA in specific habitats and environments

Chair: Mark Ohman

11.15 What are the key science issues relevant to establishing long-term observing programmes?

- Pelagic ecosystems in shelf seas (*Ulf Riebesell*)
- Warm water corals (*Rusty Brainard*)
- Cold water corals (*Murray Roberts*)
- Other coastal benthic and intertidal habitats (*Steve Widdicombe*)

Discussion

12:15 **Charge to the breakout groups** *(Libby Jewett)*

12.20 **Breakout session #1**

Discussion on how to observe relevant variability for different ecosystems and habitats, distinguishing signal from noise and including under- observed oceanic and coastal regions. Overall goal: to fine-tune the recommendations for the Ecosystem Response part of the network, taking account of regionally-specific considerations. Issues to include:

- How can we best match chemical, biogeochemical and biological observing to track/predict quantifiable OA impacts of ecological and socio-economic importance?
- What are the (regionally-specific) "essential ocean variables" for biogeochemistry and biology?
- Are there 'indicator species' that may be especially vulnerable to OA impacts?

Tropical regional seas (excl coral reef habitats)	**Temperate regional seas** (excl cold-water coral habitats)	**Polar regional seas**	**Warm and cold -water corals**	**Nearshore, intertidal & estuarine habitats**
Leaders: Eric de Carlo Rodrigo Kerr	***Leaders: Bruce Menge Kirsten Isensee***	***Leaders: Richard Bellerby Jeremy Mathis***	***Leaders: Dwight Gledhill Andreas Andersson***	***Leaders: Sam Dupont Terrie Klinger***

14.00 **Breakout session #2**

Discussion on how to observe relevant variability – continued, with same breakout groups (but opportunity for some individuals to change groups). Overall goal: to fine-tune the recommendations for the Ecosystem Response part of the network, developing the optimal observing system for the various ecosystem types, with variables appropriate for model testing and development. Issues requiring attention include:

- What suite of chemical and biological measurements comprise the essential (Level 1) and desirable (Level 2) at the regional level (maximising congruence with Seattle report)?
- What spatial and temporal coverage is essential/desirable for these measurements?
- Are there regionally-specific 'hot spots' (high rate of change or potential for high impacts) for prioritising national and international effort?

Break-out leaders as identified above

Tropical regional seas (excl coral reef habitats)	**Temperate regional seas** (excl cold-water coral habitats)	**Polar regional seas**	**Warm and cold -water corals**	**Nearshore, intertidal & estuarine habitats**

15.15 Time for breakout leaders to put together their reports. Opportunity for poster-viewing and other informal discussions.

15.45 **Data sharing and management**

Chair: Jim Orr

Introductory presentation: "The vision for GOA-ON data management" (*Hernan Garcia & Alex Kozyr*). Discussions on:

1. Specific issues for shelf seas/coastal regions, and integrating chemistry and biology – building on decisions at Seattle
2. Use of the GOA-ON map as a starting point – scope for including links to databases and datasets

3. Importance of metadata
4. Lessons learnt from SOCAT, ICES and EPOCA *(to include inputs from Dorothee Bakker, Evin McGovern and Lina Hansson*)
5. Linkages to other relevant data management activities , via IOCCP and GOOS

17:30 – POSTER SESSION

Day 3: 26 July, 2013 **GOA-ON workshop**

09:00 **Summary of workshop progress and outcomes. Consensus on how to observe chemistry and biology in shelf seas and coastal regions, across full climatic range**

Chair: Jan Newton

Two slides from each of yesterday's break out groups (summarizing main outcomes), presented by breakout leaders.

Discussion

10.45 **Consensus on how to observe chemistry and biology in shelf seas and coastal regions – continued**

Chair: Jeremy Mathis

1. What measurements
2. How frequently
3. Spatial distribution
4. How precise do we need the data to be, given the high level of variability
5. What technology advancements need to be made? For example, how can gliders contribute and how can we promote that?

13.00 **Discussion on what do we mean by a "network"? Are there examples of observing networks that we can use as a model? What are the optimal governance arrangements?**

Chair: Libby Jewett

Contributions by Maciej Telszewski and Phil Williamson – plus wide input from participants

13.45 **Regional coverage and capacity building. Can we identify specific regions (currently under-observed but potentially subject to rapid change) which this global OA community will target for improved coverage in the next 2-3 years? How will additional partnerships be created, expertise developed and national funding secured to help fill gaps in the map?**

Chair: Phil Williamson

Contributions by Jim Orr (re role of OA-ICC and iOA-RUG), plus wide input from participants

14.30 **Next steps/ synthesis products:** Jeremy Mathis and Phil Williamson

15.15-~16.40 ***Workshop Organizing Committee meeting:*** *implementing the agreed actions*

Appendix 3. An excerpt from the "Interagency Ocean Acidification Data Management Plan" produced by NOAA, US IOOS, and NODC.

"**Declaration of Interdependence of Ocean Acidification Data Management Activities in the U.S.**"

Whereas Ocean Acidification (OA) is one of the most significant threats to the ocean ecosystem with strong implications for economic, cultural, and natural resources of the world;

Whereas our understanding of OA and our ability to: 1. inform decision makers of status, trends, and impacts, and 2. research mitigation/adaptation strategies, requires access to data from observations, experiments, and model results spanning physical, chemical and biological research;

Whereas the various agencies, research programs and Principal Investigators that collect the data essential to understanding OA often pursue disparate, uncoordinated data management strategies that collectively impede effective use of this data for synthesis maps and other data products;

Whereas an easily accessible and sustainable data management framework is required that:
i) provides unified access to OA data for humans and machines; ii) ensures data are version-controlled and citable through globally unique identifiers; iii) documents and communicates understood measures of data and metadata quality; iv) is easy to use for submission, discovery, retrieval, and access to the data through a small number of standardized programming interfaces;

Whereas urgency requires that short-term actions be taken to improve data integration, while building towards higher levels of success, and noting that immediate value can be found in the creation of a cross-agency data discovery catalog of past and present OA-related data sets of a defined quality, including lists of parameters, access to detailed documentation, and access to data via file transfer services and programming interfaces;

Whereas this integration will also benefit other users of data for a diverse array of investigations;

Therefore, be it resolved that the 31 participants of an OA Data Management workshop in Seattle, WA on 13-15 March 2012 established themselves as the Consortium for the Integrated Management of Ocean Acidification Data (CIMOAD) and identified three necessary steps forward to achieve this vision:

1. The endorsement of agency program directors and managers for collective use of machine-to-machine cataloging and data retrieval protocols (including THREDDS/OPeNDAP) by each agency data center to provide synergistic, consolidated mechanisms for scientists to locate and acquire oceanographic data;

2. The commitment of the scientific community to establish best practices for OA data collection and metadata production, and the leadership to provide a means of gaining this consensus; and

3. The endorsement of agency program directors and managers to direct data managers to collaborate to develop the system articulated above and contribute to a single national web portal to provide an access point and visualization products for OA.

We, the undersigned, request your attention to this matter and commitment to bringing this vision to reality in the next five years for the benefit of our nation and contribution to the global understanding.

Signatories to the Declaration of Interdependence of Ocean Acidification Data Management Activities:

1. Alexander Kozyr, Oak Ridge National Lab, CDIAC
2. Burke Hales, Oregon State U
3. Chris Sabine, NOAA PMEL
4. Cyndy Chandler, WHOI & NSF BCO-DMO
5. David Kline, UCSD
6. Emilio Mayorga, UW & NANOOS-IOOS
7. Hernan Garcia, NOAA NODC
8. Jan Newton, UW & NANOOS-IOOS
9. Jon Hare, NOAA NMFS NEFSC
10. Kevin O'Brien, NOAA PMEL
11. Kimberly Yates, USGS
12. Krisa Arzayus, NOAA OAR NODC
13. Libby Jewett, NOAA OAP
14. Libe Washburn, UCSB
15. Liqing Jiang, NOAA OAP
16. Michael Vardaro, OSU & OOI
17. Mike McCann, MBARI
18. Paul McElhany, NOAA NMFS NWFSC
19. Peter Griffith, NASA
20. Philip Goldstein, OBIS-USA
21. Richard Feely, NOAA PMEL
22. Roy Mendelssohn, NOAA SWFSC
23. Samantha Siedlecki, UW & JISAO
24. Sean Place, U South Carolina
25. Simone Alin, NOAA PMEL
26. Steve Hankin, NOAA PMEL
27. Tom Hurst, NOAA NMFS AFSC
28. Uwe Send, UCSD SIO
29. Sarah Cooley (via phone), WHOI and OCB
30. Derrick Snowden (via phone), NOAA IOOS
31. Jean-Pierre Gattuso (via phone) OAICC

Appendix 4. Global OA Observing Network Executive Council (as of May 2014)

Co-chairs:
Phillip Williamson (UK – UKOA/NERC)
Libby Jewett (US - NOAA)

Members:
Richard Bellerby (Norway - NIVA)
Chen-Tung Arthur Chen (Taiwan – National Sun Yet-Sen University)
Sam Dupont (Sweden – Gothenburg University)
Richard Feely (US – NOAA)
Albert Fischer (Global Ocean Observing System)
David Osborn (IAEA/OA International Coordination Centre)
Kitack Lee (Korea – Pohang University)
Jeremy Mathis (US – NOAA)
Pedro Monteiro (South Africa - CSIR)
Jan Newton (US – University of Washington/IOOS)
Yukihiro Nojiri (Japan – NIES)
Benjamin Pfiel (Norway – University of Bergen)
Maciej Telszewski (IOCCP)
Bronte Tilbrook (Australia – CSIRO)
Jorge Luis Valdes (IOC)

Technical Architect:
Cathy Cosca (NOAA PMEL)

Appendix 5. List of Abbreviations

To be crafted after Paris….

Also, add somewhere Acknowledgements for contributors, Andrew Dickson, Cathy Cosca, Hernan Garcia…maybe others I am forgetting.

From: **MidAtlanticRPB, BOEM** <boemmidatlanticrpb@boem.gov>
Date: Wed, Nov 19, 2014 at 1:35 PM
Subject: Re: Submarine cable / ocean planning meeting summary for MidA RPB review
To: Kris Ohleth <kohleth@atlanticwindconnection.com>
Cc: Gwynne Schultz <gwynne.schultz@maryland.gov>, Laura McKay <Laura.McKay@deq.virginia.gov>, "Sarah W. Cooksey" <Sarah.Cooksey@state.de.us>, Liz Semple <Elizabeth.Semple@dep.nj.gov>, Greg Capobianco <Gregory.Capobianco@dos.ny.gov>, Bob Wargo <rw1791@att.com>

Thank you for sharing this information about the submarine cable industry with the MidA RPB. The MidA RPB will consider all comments received. In addition, we will post your message on the written public comments section on the MidA RPB webpage.

Please continue to contact us with any additional information you may have. As a reminder, the MidA RPB shared draft products for public review and comment this fall. The MidA RPB will refine its ideas about an approach for the materials, informed by public input, and discuss these topics further during the RPB's next in-person meeting on January 21-22, 2015 in New York. Please check the website (http://www.boem.gov/Mid-Atlantic-Regional-Planning-Body/) for updates and additional information.

On Tue, Nov 18, 2014 at 2:17 PM, Kris Ohleth <kohleth@midatlanticocean.org> wrote:
Dear MidA RPB,

Please note that this document is appropriate for distribution, and no longer an internal draft. The reference to that from an older draft is updated in the attached.

Apologies for any confusion.

Kris

Kris Ohleth
Executive Director
Mid-Atlantic Regional Council on the Ocean (MARCO)
KOhleth@MidAtlanticOcean.org
(201) 850-3690

On Nov 18, 2014, at 1:38 PM, Kris Ohleth <kohleth@midatlanticocean.org> wrote:

Dear Members of the Mid-Atlantic Regional Planning Body,

The Mid-Atlantic Regional Council on the Ocean (MARCO) is pleased to submit the attached document that summarizes the major outcomes of the discussion of a group of representatives from the submarine cable industry at a sector-specific meeting convened by the Mid-Atlantic Council on the Ocean (MARCO) in Bedminster, NJ on July 15, 2014. We anticipate that you find this meeting summary helpful as you continue to enhance your understanding of the various communities using the ocean in the Mid-Atlantic.

In July, MARCO hosted a meeting for the members of this community through our submarine cable Stakeholder Liaison Committee (SLC) representative, Bob Wargo. Bob brought together several of his colleagues for this half-day meeting during which we listening and learned about the submarine cable sector, and then had an opportunity to share information about ocean planning in the Mid-Atlantic region.

Please note that this meeting summary does not substitute for specific comments on the RPB's draft documents that are available for review through November 20.

Best,
Kris

<Summary Submarine Cables 7 15 2014_FINAL.pdf>

Kris Ohleth
Executive Director
Mid-Atlantic Regional Council on the Ocean (MARCO)
KOhleth@MidAtlanticOcean.org
(201) 850-3690

Summary of MARCO Submarine Cable Industry Sector-Specific Meeting

This document summarizes the major outcomes of the discussion of a group of representatives from the submarine cable industry at a sector-specific meeting convened by the Mid-Atlantic Council on the Ocean (MARCO) in Bedminster, NJ on July 15, 2014.

Review of Ocean Planning

Kris Ohleth of MARCO offered brief comments about the history of ocean planning in the Mid-Atlantic region and the activities of MARCO and the Mid-Atlantic Regional Planning Body (MidA RPB). The primary points of discussion and clarifications offered include the following:

- MARCO is a regional ocean partnership consisting of five Mid-Atlantic States: New York, New Jersey, Delaware, Maryland, and Virginia who share four regional ocean priorities: climate change adaptation, protection of important marine habitats, offshore renewable energy development, and water quality improvement. In addition, it recognizes ocean planning as a mechanism for convening diverse interests, fostering productive dialogue, and collecting important ocean use information. MARCO works collaboratively with the MidA RPB where possible to advance regional ocean planning. The two groups have significant overlapping membership.
- The MidA RPB consists of Federal, State, Tribal, and Fishery Management Council representatives who analyze how a suite of ocean uses intersect and work to improve coordination among those entities responsible for managing different uses.
- The MidA RPB has no authority for decision-making beyond the individual authorities of member entities. Each individual member entity retains all current permitting and regulatory authorities (e.g., BOEM retains offshore wind leasing authority).
- The MidA RPB is currently developing a suite of products to inform a decision in January 2015 about the structure and content of a regional ocean action plan. This action plan will necessarily include both process and planning elements, and will be adaptable over time. Drafts of these products will be published for public comment in late October 2014. The first iteration of the regional ocean action plan will be released in 2016.
- Based upon MARCO member states' shared regional priorities, a primary purpose of forming MARCO's Stakeholder Liaison Committee and impetus for scheduling a series of sector-specific meetings like this one is to gather input about the interest and needs of different industries and transmit that information to the MidA RPB to inform its planning processes.

A list of Frequently Asked Questions about the MidA RPB may help provide additional context about the relationship between MARCO, the Mid-Atlantic Regional Planning Body, and each

individual state and federal member entity. This list is available on the MidA RPB's website at http://www.boem.gov/MidA-RPB-FAQ/.

Overview of the Mid-Atlantic region submarine cables industry

Bob Wargo (telecommunications) & Bill Wall (energy) provided the background, connections, and differences between the telecommunications and power submarine cable industries. The submarine cable industry is interconnected, and is divided into a few sectors: cable owners, cable, amplifier and terminal manufacturers, installers and maintenance providers, consultants, and construction companies. For all sectors, the major difference in cabling is the size, requiring different shipboard equipment, although installation practices are similar.

Telecommunications Cables
History
The telecommunications submarine cable industry, which began in 1851, with a telegraph cable lain between England and France. Progress continued with inter-continental telephone cables and fiber optic cables, which are retired as technology changes and capacity needs increase. The current trend is 100 gigabits per second per wavelength, with higher density of wavelengths. As cables are taken out of service, they are generally not removed. More recently, states are including removal in the contracts. Some companies are setting up recovery and recycling processes, although new permits also affirm that the company won't do more environmental damage than good when recovering cable. Currently, 97-99% of international communications traffic is riding on these cables, and most companies have a restoration capability to route around outages.

Installation
Most cables since TAT-4/5 have been buried at a target burial depth of 1 – 2 meters to get below the sea bed. The standard depth in Asia is 3 meters. A typical telecommunications system (Network Management System) includes: 1. terminal equipment on shore in cable station, 2. Armored cable on shore, 3. Lightweight cable on ocean floor, and 4. Amplifiers are spliced in to amplify light. A typical installation requires a survey swath width of 2x the depth of the water, which allows room to go around ocean features, although cable is laid very accurately. Installation begins with a desktop study where many sources are investigated (NAVY, publicly available info, fisheries, and previous studies). Geomorphology of seabed and bathymetry is established. This is followed by a route survey. The seabed is surveyed and mapped so cables can be laid precisely on the ocean floor. During the permitting process, external agencies may express concern, which are often included as some form of mitigation measure in the permit to lay the cable.

Financing
Trans-oceanic cable can cost upwards of $200M to $500M, and a consortium (20-30) telecommunications companies will often jointly fund a new cable, each owning their proportionate share of the capacity.

Energy
Cables Installation
For energy cables, the GIS desktop study is very important, and they utilize a magnetometer for archeological information in national & international waters. Gravity cores and vibracores are used to determine seabed properties for cable burial, with a target burial depth of 4 - 6 ft. A jet plow is used to bury the cables to the desired depth. Armory on energy cables can cause problems due to weight.

Future
Wind energy will bring in multiple power cable systems laid offshore. In New Jersey, there could be up to 23 wind energy lines, and the grid will need to be adapted to manage additional energy. Wind farms will be in shallow waters, with current plans for NJ in less than 100 ft of water.

Energy and Telecommunications
Laws & Regulations
Acquiring a submarine cable permit can take several months to over a year, and some contingencies will come from the comments sought from NMFS, USCG, etc.
BOEM oversees permitting for oil and gas and wind energy, but not for submarine cables.
While the FCC grants a landing license for telecommunications cables, the states, in partnership with the Army Corps of Engineers, will grant submerged land lease permits for up to 3 nautical miles off their coasts. Challenges arise as different states and ACE districts have different interpretations of how far out they have jurisdiction.

Cable breaks can be caused by various sources, including: commercial fishing, anchoring (illegal and improperly stowed), dredging, marine construction, and natural hazards such as typhoons or earthquakes/tsunamis. US laws protect cables for willful or negligent damage, but laws are old and fines are minimal, so the Coast Guard often won't pursue charges for low fines.

Cable Routes
Most routes are known, however, there is some talk about routes from South America to Asia to Australia and North America to Australia, as well as an Arctic route. To determine the routes, companies gather as much available data as possible from portal and past surveys, etc. In most cases, this information is not sufficient and hydrographic studies are needed. Surveys need to be completed prior to the installation of the cable. Telecommunications companies involved in undersea cables frequently use GIS and can superimpose their proposed routes to ID possible hazards for the route surveys.

Seismic surveys (airgun technology, used in oil and gas exploration) penetrate the seabed and are much stronger than what is used in the cables industry, which does not use air guns. Cable survey penetrates 6-10 feet, and is more localizes and high frequency.

Some information about cable routes must be selectively disclosed (e.g. fishermen, who need to know). Cable companies disclose information by request, such as sharing charts with fishermen and distributing to ports. Contact Bob if two industries need to share information.

Final Thoughts
Future changes for submarine cable industry will be centered around upgrades to existing systems, and won't add too much to the Atlantic Basin.
The industry's major concern regarding ocean planning is that they do not want the process to make it harder to do their jobs.

Mid-Atlantic Ocean Data Portal

Tony MacDonald of Monmouth University and the Mid-Atlantic Ocean Data Portal Team provided an overview of the MARCO Mid-Atlantic Ocean Data Portal (Portal) data and applications. All Portal data is available to the public, and they are working to add additional data such as Recreational and AIS data used for fisheries mapping. The information placed on the portal can be used to understand interactions in ocean uses, such as those between fishing, wind energy areas, and navigation. The overlap in use data identifies management hotspots.

NASCA and NOAA are working on non-disclosure agreement to map submarine cable data route position lines. They are working on guidelines to share datasets for the Marine Cadastre and the regional portals. Due to proprietary information concerns, only select Cadastre staff will have access to raw data. Data will be seen on Portals but will not be downloadable; line data will not be able to be extracted. Will also remove the data related to the near-shore landing sites. Attached attributes will include information about the (1) owner, (2) emergency contact, and (3) planning contact.

Al Lombana provided an overview of the Portal, showing participants how to Register for Data Portal, and sharing training course information with the Portal Tutorials. Using the interactive Marine Planner, you can save maps in bookmarks or request specific maps, which are all printable.

Next Steps

- The meeting summary will be distributed to the meeting participants for comment, and the commentary will be forwarded to the RPB.

- Set MARCO Portal to help researchers understand who to contact to retrieve information about submarine cables. "Call before you dig."
- Participants are encouraged to provide comments on the MidA RPB's public materials that will be released in late October 2014. They are also encouraged to attend a public listening session planned for early November in one of five Mid-Atlantic locations. These listening sessions are an opportunity to industry representatives and other stakeholders to convey the importance of the submarine cables industry and ask questions about the RPB's process in a productive forum. Information about the public listening sessions is available on the MidA RPB's website at http://www.boem.gov/MidA-RPB-Meetings/.

Resources

International Cable Protection Committee (ICPC): http://www.iscpc.org/

History Resources:

- Atlantic Cable – broad history of submarine telecomm history: http://atlantic-cable.com/
- http://www.history-magazine.com/cable.html
- Washington Post article: http://www.washingtonpost.com/blogs/the-switch/wp/2014/07/11/what-a-quarter-century-of-internet-growth-looks-like-underwater/

How to fix a damaged cable: http://www.washingtonpost.com/blogs/the-switch/files/2014/07/bote1.gif

From: **MidAtlanticRPB, BOEM** <boemmidatlanticrpb@boem.gov>
Date: Mon, Dec 8, 2014 at 8:01 AM
Subject: Re: Tug and barge / ocean planning meeting summary for MidA RPB review
To: Kris Ohleth <kohleth@midatlanticocean.org>
Cc: BOEM MidAtlanticRPB <MidAtlanticRPB@boem.gov>, Gwynne Schultz <gwynne.schultz@maryland.gov>, Laura McKay <Laura.McKay@deq.virginia.gov>, "Sarah W. Cooksey" <Sarah.Cooksey@state.de.us>, Liz Semple <Elizabeth.Semple@dep.nj.gov>, Greg Capobianco <Gregory.Capobianco@dos.ny.gov>, Michelle Lennox - MARCO <mlennox@midatlanticocean.org>, Kim Barber <kbarber@midatlanticocean.org>, Arlo Hemphill <ahemphill@midatlanticocean.org>, Tony MacDonald <amacdona@monmouth.edu>

Thank you for sharing this information about MARCO's tug and barge sector meeting with the MidA RPB. The MidA RPB will consider all comments received. In addition, we will post your message and this meeting summary on the written public comments section on the MidA RPB webpage.

Please continue to contact us with any additional information you may have.

On Sun, Dec 7, 2014 at 2:24 PM, Kris Ohleth <kohleth@midatlanticocean.org> wrote:
Dear Members of the Mid-Atlantic Regional Planning Body,

The Mid-Atlantic Regional Council on the Ocean (MARCO) is pleased to submit the attached document that summarizes the major outcomes of the discussion of representatives from the tug and barge industry at a sector-specific meeting convened by MARCO in Portsmouth, VA on September 22, 2014. We anticipate that you find this meeting summary helpful as you continue to enhance your understanding of the various communities using the ocean in the Mid-Atlantic.

In September, MARCO hosted a meeting for the members of this community through our tug and barge Stakeholder Liaison Committee (SLC) representative, Eric Johansson, who delegated the meeting planning and agenda development to John Harms of the American Waterways Operators. John brought together several of his colleagues for this half-day meeting during which we listening and learned about the tug and barge sector, and then had an opportunity to share information about ocean planning in the Mid-Atlantic region. We hope the information in this meeting summary document is helpful to the RPB as you continue your important work.

Sincerely,
Kris Ohleth

Kris Ohleth
Executive Director
Mid-Atlantic Regional Council on the Ocean (MARCO)
KOhleth@MidAtlanticOcean.org
(201) 850-3690

Summary of MARCO Tug and Barge Sector-Specific Meeting

This document summarizes the major outcomes of the discussion of a group of representatives from the tug and barge industry at a sector-specific meeting convened by the Mid-Atlantic Council on the Ocean (MARCO) in Portsmouth, VA on September 22, 2014.

Review of Ocean Planning

Kris Ohleth of MARCO and Laura McKay of the Virginia Coastal Zone Program offered brief comments about the history of ocean planning in the Mid-Atlantic region and the activities of MARCO and the Mid-Atlantic Regional Planning Body (MidA RPB). The primary points of discussion and clarifications offered include the following:

- MARCO is a regional ocean partnership consisting of five Mid-Atlantic States: New York, New Jersey, Delaware, Maryland, and Virginia which share four regional priorities: climate change adaptation, protection of important marine habitats, offshore renewable energy development, and water quality improvement. MARCO recognizes ocean planning as a mechanism for convening diverse interests, fostering productive dialogue, and collecting important ocean use information. MARCO works closely with the MidA RPB to advance regional ocean planning through stakeholder engagement and has significant overlapping membership.
- The MidA RPB consists of federal, state, tribal, and Fishery Management Council representatives that will analyze how a suite of ocean uses intersect and improve coordination among those entities responsible for managing different uses.
- The MidA RPB has no authority for decision-making beyond the individual authorities of member entities. Each individual member entity retains all current permitting and regulatory authorities (e.g., BOEM retains offshore wind leasing authority).
- The MidA RPB is currently developing a suite of products to inform a decision in January 2015 about the structure and content of a regional ocean action plan. This action plan will adapt over time and will provide non-binding guidance to the MidA RPB's federal agency members. Drafts of these products will be published for public comment in late October 2014.
- One of the primary purposes of forming MARCO's Stakeholder Liaison Committee and impetus for scheduling a series of sector-specific meetings like this one is to gather input about the interest and needs of different industries and share that information with the MidA RPB to inform its planning processes.

A list of Frequently Asked Questions about the MidA RPB may help provide additional context about the relationship between MARCO, the Mid-Atlantic Regional Planning Body, and each

individual state and federal member entity. This list is available on the MidA RPB's website at http://www.boem.gov/MidA-RPB-FAQ/.

Overview of the Mid-Atlantic region tug and barge industry

John Harms of the American Waterways Operators (AWO) catalyzed a discussion among meeting participants to establish some basic facts about the tug and barge community and identify specific concerns related to ocean planning that may be helpful for the MidA RPB to consider. The group discussed the following baseline information:

- There are three primary types of tug and barge categories:
    - Barge on wire, in which tugboats tow barges using cables that can be up to 2600 feet long and can have a catenary (slack wire underwater) of up to 80 feet deep, depending on weather and the distance between tug and barge. Additionally, the tow can be blown by wind up to several hundred feet to either side of the tug's trajectory. A barge is rarely following directly behind the lead tugboat and may be up to sixty degrees off the stern of the vessel to either side.
    - Barges in the notch, in which tugs slip into a notch in the back of a barge and pushes from behind the barge. These vessels are able to operate in calm seas but must detach and place the barge on a wire during adverse weather conditions.
    - Articulated tug barge unit (ATB), in which there is a much larger notch and the tug is rigidly connected to the barge via metal pins. ATBs have a deeper draft, can travel at faster speeds, and can go farther offshore in worse weather than traditional tug and barge combinations.
- Tug routes are well established and have been used for decades. Route planning is crucial to safe tug operations. Routes selected will vary depending on what a tug is towing, the weather, and other vessels in the vicinity.
- Tug and barge vessel speed can vary between one and twelve knots, which is significantly slower than many cargo ships. Therefore, tug operators attempt to avoid waterways used by faster deep-draft vessels. While the typical operating speed is 8-10 knots, adverse weather can decrease speed to one or even zero knots. In these cases, operators are essentially holding position to wait-out a storm. Only certain ATBs are capable of travelling upwards of 12 knots.
- Adverse weather can significantly affect the planned route of a tug. Tug captains must retain the ability to significantly modify planned tug routes to avoid extreme weather by moving closer to shore, where the lee of shoreline can prevent damage to vessels and cargo. Clear and unfettered access to ports of refuge in the event of adverse weather is critical.
- Tugboat operators often take advantage of the gulfstream along the 100 fathom curve to speed travel, but water temperature changes there can cause weather systems and

abrupt changes to sea conditions. This, too, makes clear and unfettered access to ports of refuge critical to safe operations. Note that existing AIS data does not reflect this offshore navigation route because vessels are beyond the reach of shore-based AIS receivers.

- Tug and barge operators are specifically concerned about the effect of wind farm development in BOEM's established lease blocks up and down the Atlantic Coast on traditional vessel routes.
- The U.S. has significantly more tug and barge traffic than European countries that have installed offshore wind farms. Domestic marine spatial planning projects must take tug and barge operations into account and cannot rely purely on European planning models.
- The distance of proposed wind farms from shore will require tugs to choose between travelling closer to shore in already-congested waters or travelling farther offshore where rougher seas and faster, larger vessels can threaten the safety of vessel operations.
- The widening of the Panama Canal will increase vessel traffic along the Atlantic coast, including tug and barge traffic, and may lead to increased congestion in the near future.
- The industry is opposed to creating a designated fairway for tug and barge traffic. Such a designation would greatly restrict captains' flexibility in choosing the safest route and would increase unsafe congestion by funneling vessels into a confined waterway.

Industry representatives enumerated concerns about potential impacts of ocean planning activities on tug and barge operators into two major categories: safety concerns and economic concerns. Safety concerns included the following:

- If wind farms are developed in BOEM's identified lease areas, it could funnel tug and barge traffic either very close to the coast, which would further congest already busy waterways (e.g., mouths of the Chesapeake and Delaware bays), or further offshore, which could expose tugs and barges to faster moving deep vessel traffic. Existing visibility and radar issues could be exacerbated by this crowding.
- If wind farms were developed in BOEM's identified lease areas, it could also force tugs and barges to transit further offshore. In certain weather conditions, just one mile further offshore can change sea conditions drastically, putting towing vessels at greater risk and jeopardizing safe transit.
- Static energy generated from wind turbines might present a safety concern and interfere with electronic systems on tugboats.
- If routes shift, there may be a significant increase in risk profile and liability for tug operators.
- There are three primary principles important to ensuring tug and barge vessel safety in the waterways in which they travel:

- Water needs to be of adequate depth to protect the towing wire catenary from dragging on the bottom of the ocean floor (preferably 90 feet or more).
- There must be at least a half-mile (preferably one mile) buffer between vessels and fixed objects.
- There must be a minimum distance of one mile between vessels to accommodate all vessels in all weather conditions.

Economic concerns listed included the following:

- Significant alteration of historical routes will require tug operators to increase distance traveled, which will increase fuel use and air emissions. Fuel costs account for approximately 50-60% of transit costs, and tugboats burn between 100 gallons and 300 gallons of fuel an hour, depending on the size of the tow.
- Different routes may increase the risk of groundings and collisions, which could increase both repair costs and insurance premiums.
- Altered routes may also delay delivery of goods within anticipated timeframes, which could result in penalties for operators and ultimately additional costs for consumers.
- There may be a need for some tugboats to hire additional crew if vessels are forced to navigate in shallower waters, where tow lines need to be adjusted often.

Mid-Atlantic Ocean Data Portal

Jay Odell of the Nature Conservancy and the Mid-Atlantic Ocean Data Portal Team provided an overview of the MARCO Mid-Atlantic Ocean Data Portal (Portal) data and applications. He specifically reviewed the shipping data available on the Portal and demonstrated how the Portal could be used for industry representatives to demarcate important locations and submit that information to MARCO to illustrate specific concerns or potential conflicts. John Walters of the U.S. Coast Guard provided an example of how the Portal team has helped the Coast Guard develop maps to show where marine traffic intersects with the New Jersey wind area in response to BOEM's proposed sale of that area.

One particular piece of feedback from the tug and barge industry representatives was that the Automatic Identification System (AIS) data captured in the Portal does not reflect the fact that often barges are not on the exact same path as the tug. A more appropriate way to convey these paths might be to build out wider swaths based on tugboat AIS data to account for lateral tow movement.

Next Steps

- Participants were encouraged to provide comments on the MidA RPB's public materials that will be released in late October 2014. They are also encouraged to attend the Virginia public listening session planned for November 6, 2014 in Virginia Beach. These listening sessions are an opportunity for industry representatives to convey the importance of the tug and barge industry and ask questions about the RPB's process in a productive forum. Information about the public listening sessions is available on the MidA RPB's website at http://www.boem.gov/MidA-RPB-Meetings/.
- Members of the Portal team will work with John Harms and others at AWO to connect to one or more members of the tug and barge community to feature on the Portal in order to help other stakeholders better understand the industry.

From: **MidAtlanticRPB, BOEM** <boemmidatlanticrpb@boem.gov>
Date: Tue, Apr 28, 2015 at 1:38 PM
Subject: Re: seismic air gun testing in the Atlantic
To: Michael Basilone <mwbasilone@yahoo.com>

Thank you for submitting comments concerning uses of the ocean. The Mid-Atlantic Regional Planning Body (MidA RPB) will consider all input received, and will post your message on the written public comments section of the MidA RPB website.

Please continue to contact us with any additional comments you may have, and please check the MidA RPB website (http://www.boem.gov/Mid-Atlantic-Regional-Planning-Body/) for additional information and updates.

You may also want to view the Bureau of Ocean Energy Management (BOEM) website for information about the Outer Continental Shelf Oil and Gas Leasing Program and other Atlantic activities, including how to provide input on those issues:

http://www.boem.gov/Atlantic-Region/
http://www.boem.gov/Five-Year-Program-2017-2022/
http://boemoceaninfo.com/

On Tue, Apr 28, 2015 at 10:16 AM, Michael Basilone <mwbasilone@yahoo.com> wrote:
Please do not allow this seismic air gun testing in the Atlantic. The danger to marine mammals is too great. These animals help our coastal communities generate millions in tourism money that we desperately need to keep us employed. Also please do not allow offshore oil drilling for the same reasons..

Thank You,
Mike Basilone

From: **Matt Gove** <mgove@surfrider.org>
Date: Thu, May 28, 2015 at 11:48 AM
Subject: Re: Draft OAP Schedule
To: Robert LaBelle <robert.labelle@boem.gov>
Cc: "gwynne.schultz@maryland.gov" <gwynne.schultz@maryland.gov>, "KelseyLeonard@shinnecock.org" <KelseyLeonard@shinnecock.org>, "MidAtlanticRPB@boem.gov" <MidAtlanticRPB@boem.gov>

Thanks Bob!

Matt

On Wed, May 27, 2015 at 10:48 PM, Robert LaBelle <robert.labelle@boem.gov> wrote:
Matt,

Thank you for your email. We are in discussion with the NOC and the work schedule is subject to revision if the RPB decides to modify our initial estimates. We will post any such mods online as they occur. Thanks for letting us know your position on this.

Bob

On May 27, 2015, at 5:19 PM, Matt Gove <mgove@surfrider.org> wrote:

Bob, Gwynne, and Kelsey,

Hope you guys are well! Thanks much for hosting the webinar last week, webinars are very helpful for us trying to stay current on RPB activities, and to pass that information onto others.

I had a few questions that there wasn't enough time to get to on the webinar, but the one I'm most concerned about is the timing of the draft OAP submittal to the NOC.

I spoke with Beth Kerttula a few weeks ago at the Blue Vision Summit, and she seemed to feel that November 2016 was not enough time for her shop to review and approve by the en of the year.

I think there is enough wiggle room to move the timeline up by a couple of months, but you would need to move as soon as possible to revise the schedule so that everyone knows that is the situation--including all the various contracts!

Please let me know if you have thought any further on the schedule--thanks!!

Matt

Matt Gove
Mid-Atlantic Policy Manager
Surfrider Foundation
mgove@surfrider.org
952-250-4545

From: **MidAtlanticRPB, BOEM** <boemmidatlanticrpb@boem.gov>
Date: Fri, Jul 10, 2015 at 3:02 PM
Subject: Re: Recommendations on the Mid-Atlantic Regional Planning Body Work Plan and the Regional Ocean Assessment Workgroup's White Paper
To: "Chase, Alison" <achase@nrdc.org>
Cc: "Robert.LaBelle@boem.gov" <Robert.LaBelle@boem.gov>, "Gwynne Schultz -DNR-(gwynne.schultz@maryland.gov)" <gwynne.schultz@maryland.gov>, "KelseyLeonard@shinnecock.org" <KelseyLeonard@shinnecock.org>, "MidAtlanticRPB@boem.gov" <MidAtlanticRPB@boem.gov>

Thank you for submitting comments to the Mid-Atlantic Regional Planning Body. The MidA RPB will consider all comments received, and will post them on its website.

On Fri, Jul 10, 2015 at 2:21 PM, Chase, Alison <achase@nrdc.org> wrote:

Below and attached please find a letter from several organizations regarding the Mid-Atlantic Regional Planning Body's work. Please feel free to contact me with any questions at 212.727.4551.

Sincerely,

Ali Chase

American Littoral Society • Coastal Research and Education Society of Long Island • Maryland Coastal Bays Program • Miami2Maine • National Aquarium • Natural Resources Defense Council • SandyHook SeaLife Foundation • Surfrider Foundation • Wild Oceans • Wildlife Conservation Society

July 10, 2015

Mid-Atlantic Regional Planning Body Co-Leads:

Mr. Robert LaBelle
Senior Advisor to the Director
Bureau of Ocean Energy Management
U.S. Department of the Interior
1849 C Street, NW
Washington, D.C. 20240

Ms. Kelsey Leonard
Shinnecock Indian Nation
P.O. Box 5006
Southampton, New York 11969

Ms. Gwynne Schultz
Senior Coastal and Ocean Policy Advisor
Maryland Department of Natural Resources
580 Taylor Avenue, E2
Annapolis, Maryland 21401

Submitted electronically

Re: Recommendations on the Mid-Atlantic Regional Planning Body Work Plan and the Regional Ocean Assessment Workgroup's White Paper

Dear Mr. LaBelle, Ms. Schultz, and Ms. Leonard:

Thank you, and the other members of the Mid-Atlantic Regional Planning Body (RPB), for your continued efforts to develop a strong Mid-Atlantic Ocean Action Plan (OAP or Plan) to improve our ocean's health and safeguard the many sustainable uses that rely on its continued functioning. We are excited to see the renewed energy surrounding the Plan's development and look forward to working closely with you over this final year and a half to shape and finalize a substantive Plan.

We appreciate the opportunity to comment on your recently released Mid-Atlantic Regional Planning Body Work Plan (Work Plan)[1] and the Regional Ocean Assessment Workgroup's (ROA Workgroup) new white paper, *A Brief Overview of the Mid-Atlantic Ocean: Characteristics, Trends, and Challenges*, (ROA White Paper).[2] The below comments build from our questions and concerns raised on the May 22nd webinar.[3]

I. The draft OAP should go out for public comment in early May 2016 and be delivered to the National Ocean Council for approval in August 2016.

We strongly recommend that the RPB deliver a draft OAP in August 2016 to the National Ocean Council (NOC) for concurrence. If the draft Plan is sent to the NOC in November, as is currently called for in the Work Plan,[4] it will not allow enough time for NOC review and approval by this Administration. NOC approval is critical as it is only by the NOC's official signoff that the Plan will come to life: "By [NOC] concurrence, Federal agencies agree that they will use the marine plan to inform and guide their actions in the region consistent with their existing missions and authorities."[5] This Administration created the planning body process with the establishment of the National Ocean Policy in 2010[6] and has participated in all steps of the RPB; Plan review and concurrence should occur under this Administration.

We suggest releasing a draft OAP for public comment in early May and conducting a public review process in May and June that includes a series of listening sessions and webinars. The RPB will be able to

integrate public comments into the Plan in July and early August before delivering the Plan in late August to the NOC.

II. The RPB should continue to actively engage the public and stakeholders in Plan development and coordinate closely with the Northeast Regional Planning Body.

To streamline OAP review, we urge the RPB to engage in discussions with the public and affected stakeholders early and often regarding possible Plan actions. We appreciate that agencies often want to internally finalize ideas before vetting them publicly, but open and transparent discussions of potential actions throughout Plan development, including over the course of this summer and fall, will result in a stronger, more meaningful Plan that tackles the region's challenges. We urge you to add more public engagement opportunities to the list of upcoming meetings[7] and to encourage the selected contractors for the ecological data synthesis, human use data synthesis, and Regional Ocean Assessment to hold webinars to further educate interested parties about their important work.

We also urge the RPB to coordinate its data products and associated actions with the Northeast Regional Planning Body (Northeast RPB). Many of the ocean management issues the Plan hopes to address are not unique to this region and we hope that the parallel tracks each region is following can lead to actions relevant throughout the Atlantic seaboard. It is particularly important that the ecological and human use data layers under development in both regions share similar methodologies so that the results are comparable and can be potentially combined into seamless data sets or maps.

III. The Plan must identify ways to protect and restore ecologically important places from threats they may face.

We are excited about the Data Synthesis Workgroup's effort to advance region-wide and area-specific maps depicting centers of species richness and diversity[8] and believe it is essential that these new products, combined with the new human intensity maps, inform the Interjurisdictional (IJC) Coordination Workgroup's efforts. Agency guidance is what will bring this Plan to life. Armed with knowledge of where our ecologically important places are, the RPB must flesh out the compatibility of expected uses with these areas and seek to protect the areas so that they continue to function as they must in order to protect ocean health and the coastal communities, jobs, food, and recreation that rely on a healthy ocean.

The ecological and human use data products under development are not end results in and of themselves. The Plan should identify actions, including performance standards and mitigation measures, to avoid and minimize the impacts to ecologically important areas and to support sustainable uses. The Plan should include guidance to protect our ocean ecosystem and encourage sustainable use.

The RPB's Ocean *Action* Plan should result in visible management improvements, not just promises for future consideration, if this regional planning effort is to live up to its promise to conduct our ocean business for the better and achieve the region's Healthy Ocean Ecosystem Goal to "Promote ocean ecosystem health, functionality, and integrity through conservation, protection, enhancement, and restoration."[9] This effort is envisioned in the *Final Recommendations of the Interagency Ocean Policy Task Force* (Final Recommendations), which states that regional ocean planning should "improve ecosystem health and services by planning human uses in concert with the conservation of important ecological areas, such as areas of high productivity and biological diversity; areas and key species that are critical to ecosystem function and resiliency; areas of spawning, breeding, and feeding; areas of rare or functionally vulnerable marine resources; and migratory corridors … [regional ocean planning] *ultimately is intended to result in protection of areas that are essential for the resiliency and maintenance of healthy ecosystem services and biological diversity, and to maximize the ability of marine resources to continue to support a wide variety of human uses*."[10] It is critical that once the ecological data products are developed, IJC actions be created that advance ocean protections.

IV. The RPB should take steps to create an ocean health index that serves as a baseline against which to measure the progress toward our overall goal of ecosystem health for the Mid-Atlantic region.

It's impossible to manage what you don't measure. In addition to identifying and protecting a network of important ecological areas, the Data Synthesis Workgroup, in coordination with the science community, should take steps to develop an ocean health index that allows the RPB and the public to monitor our success in securing the region's ocean health over time.

One excellent example of an ocean health index is the Puget Sound Dashboard of Vital Signs. This product identifies the area's key components for a healthy ecosystem (*e.g.*, estuaries), the pressures facing them (*e.g.*, construction of levies and dikes), indicators for these components (*e.g.*, the aerial extent of eelgrass beds), and includes specific, measurable, achievable, relevant and time-limited – or SMART[11] – objectives to attain improvements.[12] Having measurable and meaningful objectives allows for regular checkups on marine health.

As a first step toward this kind of robust ecological restoration plan, we urge the RPB to begin to develop a Mid-Atlantic ocean health index by monitoring the particular ecological components identified in the Data Synthesis Workgroup's ecological data synthesis products. In the course of developing the methodology to identify a regional network of important ecological areas, this Workgroup will have essentially already selected many of

the region's key ecosystem components, the keystone and endangered species and identified the region's various habitat types. The Data Synthesis Workgroup as well as the Regional Ocean Assessment Workgroup will also have identified various environmental pressures. The Data Synthesis Workgroup should repurpose this information into the first stages of an ocean heath index and work with scientists to identify indicators and begin the process of setting objectives. The RPB should run this work in parallel to the OAP development and continue to build from this index once the Plan is completed.

V. The Plan should focus on ocean health and sustainable uses.

We want to reiterate that the Plan should support the Mid-Atlantic Regional Ocean Planning Framework's focus on providing for *sustainable* use,[13] and not be used to consider offshore oil and gas exploration and development. These uses should not be housed under sustainable uses as they are in the ROA White Paper[14] and should not emerge in the Plan's guidance, given the RPB's overarching goals to provide for a healthy ocean ecosystem and sustainable ocean use.[15]

Conclusion

Thank you for the opportunity to share these considerations with you. We urge you to update the Work Plan as soon as possible to address these concerns and include added stakeholder opportunities. We look forward to successfully developing these Plan products with you and to collaborating to achieve our shared goals for ocean protection and sustainable use.

Sincerely,

Alison Chase

Senior Policy Analyst

Natural Resources Defense Council

Matt Gove

Mid-Atlantic Policy Manager
Surfrider Foundation

Tim Dillingham
Executive Director
American Littoral Society

Pam Lyons Gromen
Executive Director
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Merry Camhi, PhD
Director, New York Seascape
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[1] *Available at*: http://www.boem.gov/Mid-Atlantic-Regional-Planning-Body-Work-Plan/.

[2] *Available at*: http://www.boem.gov/Mid-Atlantic-ROA-summary-white-paper/.

[3] Webinar materials *available at*: http://www.boem.gov/MidA-RPB-Meetings/.

[4] Work Plan *at* 2, *available at*: http://www.boem.gov/Mid-Atlantic-Regional-Planning-Body-Work-Plan/.

[5] *Marine Planning Handbook at* 17, *available at*: https://www.whitehouse.gov/sites/default/files/final_marine_planning_handbook.pdf.

[6] *See*, Executive Order 13547 – Stewardship of the Ocean, Our Coasts, and the Great Lakes athttps://www.whitehouse.gov/the-press-office/executive-order-stewardship-ocean-our-coasts-and-great-lakes.

[7] Events listed at http://www.boem.gov/MidA-New/ include the July 13 webinar on data methodology approaches, the Mid-Atlantic Regional Council on the Ocean stakeholder engagement workshop, and the RPB's September meeting.

[8] Please see the letter many of our groups submitted on November 20, 2014 re: Recommendations on the Mid-Atlantic Regional Ocean Assessment and the Regional Ocean Action Plan for detailed recommendations regarding how to identify a representative network of important ecological areas.

[9] Mid-Atlantic Regional Ocean Planning Framework *at* 6, *available at* http://www.boem.gov/Mid-Atlantic-Regional-Ocean-Planning-Framework/.

[10] Final Recommendations *at* 44, *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf. Emphasis added.

[11] *See*, for example, Kershner, J., Samhouri, J.F., James, C.A. and Levin, P.S. 2011. Selecting Indicator Portfolios for Marine Species and Food Webs: A Puget Sound Case Study. *PLoS ONE* 6(10): e25248. *Available at* http://www.plosone.org/article/info:doi/10.1371/journal.pone.0025248.; Ehler, Charles; A Guide to Evaluating Marine Spatial Plans, Paris, UNESCO, 2014. *IOC Manuals and Guides*, 70; ICAM Dossier 8. *Available at* http://unesdoc.unesco.org/images/0022/002277/227779e.pdf.

[12] *See* Puget Sound Partnership Vital Signs *at* http://www.psp.wa.gov/vitalsigns/eelgrass.php.

[13] Mid-Atlantic Regional Ocean Planning Framework *at* 6-9, *available at* http://www.boem.gov/Mid-Atlantic-Regional-Ocean-Planning-Framework/.

[14] ROA White Paper *at* 15, 21, *available at*: http://www.boem.gov/Mid-Atlantic-ROA-summary-white-paper/.

[15] Mid-Atlantic Regional Ocean Planning Framework *at* 6-9, *available at* http://www.boem.gov/Mid-Atlantic-Regional-Ocean-Planning-Framework/.

From: **MidAtlanticRPB, BOEM** <boemmidatlanticrpb@boem.gov>
Date: Mon, Sep 28, 2015 at 8:52 AM
Subject: Re: Fisheries Survival Fund letter to Mid-Atlantic RPB
To: AHawkins@kelleydrye.com

Thank you for your letter to the Mid-Atlantic Regional Planning Body. The MidA RPB will consider all input received, and will post your message on the written public comments section of the MidA RPB website.

Please continue to contact us with any additional comments you may have, and please check the MidA RPB website (http://www.boem.gov/Mid-Atlantic-Regional-Planning-Body/) for information and updates.

---------- Forwarded message ----------
From: **Hawkins, Anne** <AHawkins@kelleydrye.com>
Date: Wed, Sep 23, 2015 at 10:23 AM
Subject: Fisheries Survival Fund letter to Mid-Atlantic RPB
To: "MidAtlanticRPB@boem.gov" <MidAtlanticRPB@boem.gov>, "joe.atangan@navy.mil" <joe.atangan@navy.mil>, "christine.mintz@navy.mil" <christine.mintz@navy.mil>, "kevin.chu@noaa.gov" <kevin.chu@noaa.gov>, "darlene.finch@noaa.gov" <darlene.finch@noaa.gov>, "patrick.gilman@ee.doe.gov" <patrick.gilman@ee.doe.gov>, "lucas.feinberg@ee.doe.gov" <lucas.feinberg@ee.doe.gov>, "terron.hillsman@md.usda.gov" <terron.hillsman@md.usda.gov>, "michael.h.jones1@navy.mil" <michael.h.jones1@navy.mil>, "john.kennedy@dot.gov" <john.kennedy@dot.gov>, "jeffrey.flumignan@dot.gov" <jeffrey.flumignan@dot.gov>, "robert.labelle@boem.gov" <robert.labelle@boem.gov>, "leann.bullin@boem.gov" <leann.bullin@boem.gov>, "Lobue.Charles@epa.gov" <Lobue.Charles@epa.gov>, "anderson.kate@epa.gov" <anderson.kate@epa.gov>, "chris.p.scraba@uscg.mil" <chris.p.scraba@uscg.mil>, "douglas.c.simpson@uscg.mil" <douglas.c.simpson@uscg.mil>, "john.bull@mrc.virginia.gov" <john.bull@mrc.virginia.gov>, "john.clark@state.de.us" <john.clark@state.de.us>, "sarah.cooksey@state.de.us" <sarah.cooksey@state.de.us>, "kheffner@pa.gov" <kheffner@pa.gov>, "ginger.kopkash@dep.nj.gov" <ginger.kopkash@dep.nj.gov>, "elizabeth.semple@dep.nj.gov" <elizabeth.semple@dep.nj.gov>, "joe.martens@dec.ny.gov" <joe.martens@dec.ny.gov>, "kathleen.moser@dec.ny.gov" <kathleen.moser@dec.ny.gov>, "karen.chytalo@dec.ny.gov" <karen.chytalo@dec.ny.gov>, "catherine.mccall@maryland.gov" <catherine.mccall@maryland.gov>, "laura.mckay@deq.virginia.gov" <laura.mckay@deq.virginia.gov>, "cesar.perales@dos.state.ny.us" <cesar.perales@dos.state.ny.us>, "gregory.capobianco@dos.ny.gov" <gregory.capobianco@dos.ny.gov>, "michael.snyder@dos.ny.gov" <michael.snyder@dos.ny.gov>, "gwynne.schultz@maryland.gov" <gwynne.schultz@maryland.gov>, "azemba@state.pa.us" <azemba@state.pa.us>, "rgray58@hughes.net" <rgray58@hughes.net>, "kmaccorm@gmail.com" <kmaccorm@gmail.com>, "kelseyleonard@shinnecock.org" <kelseyleonard@shinnecock.org>, "wabush1@aol.com" <wabush1@aol.com>, "bpatterson@oneida-nation.org" <bpatterson@oneida-nation.org>, "michael.luisi@maryland.gov" <michael.luisi@maryland.gov>, "Brian.Thompson@ct.gov" <Brian.Thompson@ct.gov>
Cc: "Frulla, David E." <DFrulla@kelleydrye.com>, "Minkiewicz, Andrew" <AMinkiewicz@kelleydrye.com>, "Izurieta, Jennipher" <JIzurieta@kelleydrye.com>, "kmorrison@midatlanticocean.org" <kmorrison@midatlanticocean.org>

Dear Mid-Atlantic Regional Planning Body member,

The attached file is a letter from the Fisheries Survival Fund to the RPB regarding the development of the Mid-Atlantic Regional Ocean Action Plan. I will distribute paper copies to members at an upcoming break and have extra copies at the meeting. Please do not hesitate to contact me if you have questions or would like to discuss.

Best regards,

-Annie Hawkins

Attachments area
Preview attachment Letter from FSF to MA RPB.pdf

Letter from FSF to MA RPB.pdf

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September 22, 2015

Robert LaBelle
Federal Co-Lead for Mid-Atlantic Regional Ocean Planning
Bureau of Ocean Energy Management
381 Elden Street
Herndon, Virginia 20170

Dear Mr. LaBelle and RPB members:

On behalf of the Fisheries Survival Fund ("FSF"), we submit the following comments on the Mid-Atlantic Regional Planning Body's ("RPB's") work to develop the Mid-Atlantic Regional Ocean Action Plan ("ocean plan") in advance of the RPB's upcoming meeting on September 23-24 in Norfolk, Virginia. FSF represents the significant majority of the full-time limited access permit holders in the Atlantic scallop fishery. Our members are home-ported along the Atlantic coast from North Carolina and Virginia north through New Jersey, Connecticut, and Massachusetts.

Throughout the past several years, FSF has engaged extensively in the planning process for offshore energy and other ocean projects in the Northeast and Mid-Atlantic regions, which has given us unique insight into the deficiencies of current permitting and environmental review processes. We have learned that there are many ways in which these processes can be improved to increase stakeholder consultation, reduce conflicts, and ultimately improve planning efficiency for multiple uses of our offshore resources. Some of these improvements are well within the purview of the RPB; that is, they are tangible steps the RPB could take and/or recommend that would greatly reduce future use conflicts within the existing management structure, and could be accomplished with minimal investment.

We commend the RPB for the substantial amount of work its staff and members have spent developing the draft documents for this meeting and its work on the ocean plan to date. FSF has sent previous letters to the RPB throughout its development of the ocean plan, which describe the conflicts and challenges we have encountered related to offshore planning. In light of those comments, this letter will only briefly summarize our foremost concerns and will instead focus on providing practical suggestions, within the role of the RPB, for improving management and consultation.

I. THE RPB AND ITS OCEAN PLAN SHOULD ENHANCE REGIONAL COMMUNICATION AND IMPROVE PUBLIC NOTICE AND CONSULTATION PROCESSES

Action agencies are required to consult with other user groups as a matter of law and policy.[1] However, such consultation often occurs too late or does not occur at all. We acknowledge it may be burdensome for an agency or a project developer to identify and address the concerns of every single user group that could conceivably have a conflict with a proposal. However, in the absence of agency-initiated consultation, any fisheries interests or, indeed, any person with any interest in offshore activities, that wish to provide input must monitor each agency's actions individually and either engage the agency ad hoc or participate in the environmental review process.

It would be nearly impossible for a stakeholder to track each and every offshore proposal that may affect his or her industry. From the outset, the Administrative Procedure Act requires any agency proposing to permit an offshore project, or to conduct environmental review on such a project, to publish notification in the Federal Register.[2] However, not all agencies do so. For example, the National Science Foundation ("NSF") recently permitted a Rutgers University-led survey offshore New Jersey that is using seismic airgun blasts to measure long-term changes in seabed sedimentation. Despite the seismic blasts following a 4900-km survey line in an area that is heavily commercially and recreationally fished during the busiest fishing months of the year, the only public notice of the project was an Environmental Impact Statement ("EIS") quietly posted on the NSF's website. Similarly, the Bureau of Ocean Energy Management ("BOEM") has sought comment on permits for seismic surveying without issuing official Federal Register notices. Therefore, even simply monitoring the Federal Register would not be an effective way to stay informed.

The environmental review process provides another legally-mandated opportunity for public notice and comment. While all federal projects are subject to environmental review,[3] including public participation, the action agencies responsible for each project have differing approaches to conducting such review. Often the public, including affected stakeholders, is unaware of proposals and developments until far too late in the process to make meaningful engagement or planning efforts, if it is even possible at all. For example, under the "Smart from the Start" initiative for offshore wind farm permitting, BOEM only issues a Call for Information

[1] We have described this legal requirement in previous letters and, for the sake of brevity, incorporate those letters by reference.

[2] 5 U.S.C. § 553(b).

[3] 42 U.S.C. § 4332(2)(C).

from the public *after* energy companies spend substantial time and money resources developing specific bids for a Wind Energy Area. The result of these policies is that agencies, in effect, enable private companies to lay claim to valuable ocean areas without any coherently structured process, as though the Mid-Atlantic ocean is a vast empty space waiting to be claimed. In New York, for example, three private companies have spent what likely amounts to millions of dollars so far to develop a proposal for an offshore wind facility, and the agency has spent significant resources on its review. Only after the Call for Information did the agency and the corporations learn that the proposed area overlaps prime scallop and other commercial fishery grounds, recreational fishing areas, a proposed liquefied natural gas ("LNG") terminal, and shipping lanes. This system benefits nobody. The timing of input matters. As we have urged in previous letters to the RPB and many of the action agencies, it is absolutely critical to improve public outreach *before* projects are so far along in the planning phase that they are effectively irrevocable, or revocable only if substantial resources are wasted. Existing uses of an area must be considered in the earliest possible stages of planning decisions. We therefore urge the RPB to develop effective protocols and agreements that ensure reasonable protections for historic fishing grounds and other existing ocean uses in accordance with the law.

In the case of fisheries uses, environmental review typically occurs only during the essential fish habitat ("EFH") consultation—which is almost always one of the last steps in the preparation of an environmental impact statement. The EFH consultation process is not sufficient as a stand-alone option for action agencies to consider fishing activity in a proposed project area, although it is certainly useful and should be observed and improved. Therefore FSF urges the RPB, at a minimum, to fully consider the following actions in its ocean plan:

1. *Adopt the draft recommendations of the Interjurisdictional Working Group related to fisheries uses*. In particular, the RPB should work with the Mid-Atlantic Fishery Management Council's ("MAFMC") Ecosystems and Ocean Planning Committee as the appropriate group to represent fisheries stakeholders. Increased dialogue between NOAA and state entities will also improve communication and decision making.

2. *Explore ways to improve the quality of EFH consultations completed by action agencies*. When action agencies prepare EFH consultations they are often factually inaccurate or missing information. Due to the complexity of fisheries management and science, it is difficult for other agencies to accurately characterize a region's fisheries and fishery resources. As a result, NMFS and action agencies should develop formalized plans, including sharing staff expertise, to improve the quality of such consultations.

3. *Encourage interagency agreements on early consultation.* Clear standards for early consultation will minimize costs and complications associated with user group conflicts.

Such agreements should also identify appropriate personnel within each agency to serve as the primary reference points for information on each potential use of an area.

4. *Work with the National Marine Fisheries Service ("NMFS") to improve the EFH consultation guidance*. This guidance has not been updated since 2004 and is sorely outdated in light of the rapidly accelerating pace of offshore activities. The Magnuson Stevens Fishery Conservation and Management Act requires NMFS to make recommendations to any federal or state agency considering an activity that, in the view of the relevant fishery management council, is likely to substantially affect fish habitat, including EFH, but does not provide any framework for doing so.[4] NMFS guidance must be revised to require earlier consultation and describe consequences of action agency non-compliance with EFH recommendations.

5. *Create a centralized registry or database describing all projects under consideration regionally.* This simple mechanism would allow interested parties to monitor developments and directly engage with agencies or project representatives in order to streamline the resolution of potential

6. *Clarify each action agency's environmental review process in one easily accessible document*. Promote agency commitment to utilize the Federal Register and follow standard practices for public input.

II. THE OCEAN PLAN SHOULD IMPROVE REGIONAL DATA SHARING

The quality of information is critical to an effective environmental review. However, action agencies have published EISs that have major flaws, perhaps due to the deep complexities in the management of offshore resources. We have seen this problem in a wide variety of reviews. While we cannot know what leads to the omission of key fishery information from environmental reviews, we do know that such omissions should be discovered and rectified prior to the development of site plans and spending of massive agency and private resources on permitting procedures.

The RPB is currently engaged in efforts to characterize ocean uses in the Northeast and to build tools to compile relevant biological and economic data. While we are hopeful that the characterization efforts will reduce the likelihood of these mistakes in the future, there are fundamental problems with their effectiveness. For the scallop fishery, for instance, annual assessments of the resource inform management decisions. The success of rotational management, which has led the Atlantic scallop fishery to become fully sustainable and the most lucrative in the

[4] 16 U.S.C. § 1855(b)(3).

nation, is dependent upon the flexibility to determine what areas to open to fishing each year in response to those assessments. Furthermore, "snapshots" of historical uses cannot describe the fishery's actual footprint, as fishing grounds must shift from year to year. Due to these difficulties with the characterization process, additional backstop measures must be implemented to ensure that agency reviews are complete and fully informed.

One major problem relevant to regional data sharing lies in assessing the cumulative impacts of a series of permits for offshore anthropogenic activities. FSF is extraordinarily alarmed at a statement NMFS representatives made at an MAFMC Ecosystems and Ocean Planning Advisory Panel meeting over the summer. The agency stated that it cannot calculate such cumulative impacts, even of multiple small projects in a certain area.

The assessment of cumulative impacts to the human and natural environment is a mandated component of an environmental review analysis.[5] While we do not believe that it is the RPB's role to conduct complex scientific analysis related to specific user groups, its data sharing activities must ensure that all the information necessary to conduct cumulative effects analyses is available to action agencies.

FSF recommends the following actions related to data improvement:

1. *Adopt the proposed Interjurisdictional Coordination Actions related to wind energy, and also apply those actions to other activities and agencies*. Specifically, agencies should develop "guidance that addresses how data will be used in management, environmental, and regulatory reviews" and "agree on what data is sufficient for responsible entities to use for their reviews."

2. *Identify appropriate personnel within each agency (either pre-existing staff or in new coordinating positions) to serve as the primary reference point for information on each potential use of an area*.

3. *Determine what information is needed to assess cumulative impacts, and ensure that such information is available to the appropriate agencies.*

4. *Improve public consultation requirements as described above.* This will ensure that the best and most recent data is shared among agencies at the appropriate times.

[5] 40 C.F.R. § 1508.7.

III. THE OCEAN PLAN SHOULD PROVIDE A MECHANISM FOR WEIGHING THE SEVERITY OF CONFLICTS AND DISAPPROVING OR RE-SITING A PROJECT IF IT POSES TOO GREAT A CONFLICT WITH EXISTING USES

The draft materials posted in advance of the RPB meeting, which will inform the drafting of the ocean plan, focus heavily on increasing understanding among user groups and action agencies. This goal is extremely important. However, there are other considerations that must also be addressed in the ocean plan in order for it to be an effective management tool.

Proposed construction and operational activities will change the benthic and pelagic environment. It is reasonably foreseeable that anthropogenic activities can cause direct disturbance of substrate, increased sedimentation in the water column, heat from construction and industrial operations, hazards to navigation, and the potential for pollution.

Although these activities threaten the sustainability of many fishery resources, we are most familiar with the risks to scallops, which serve as but one example of how impacts to a fishery can rapidly compound. Adult organisms are sessile, attaching to the seabed and filtering plankton from water as it moves past. As such, scallops can only survive in areas with firm sand, gravel, or cobble substrate and low levels of inorganic suspended particulates.[6] Scallops will therefore disappear from areas in which the substrate is replaced with rocks and concrete and sedimentation clouds the water column. Construction activities will also modify the water column itself. Any foreign object at or near the seafloor will create turbulence and eddies, which can influence scallop spat settlement and affect the viability of scallop beds as a whole. Scallop larvae are planktonic, and thus are suspended in the water column during the early stage of their lives. Although planktonic scallops travel with currents, these larvae generally settle in similar places from year to year, as they mature into spat. "Spatfall (the settling of larval scallops to the bottom), and the period immediately following, is thought to be particularly important in the formation of scallop beds and in determining year class size."[7] There is no evidence of mass migrations by scallops after spatfall.[8] The movements of sea scallops are usually localized, and random or current-assisted.[9] Once aggregations of adults are formed, they remain essentially stationary.[10] Changes to an existing scallop bed's benthic environment and the currents and gyres that larval scallops rely

[6] Deborah Hart & Antonie Chute, *Essential Fish Habitat Source Document: Sea Scallop, Placopecten magellanicus, Life History and Habitat Characteristics Second Edition*, NOAA Technical Memorandum NMFS-NE-189 (Sept. 2004), at 13.

[7] *Id*. at 1-2 (internal citations omitted).

[8] *Id.* at 2.

[9] *Id.*

[10] *Id.*

on to be transported to that bed, therefore, can pose significant risks to the scallop resource and fishery.

Moreover, environmental review processes impose no hard and fast criteria for weighing a proposed project's impact on existing users and the human and natural environment. It is reasonable to expect each agency will base its decision using its own institutional values; that is, the action agency will most likely view its own proposed project as a higher priority than those proposed by others, or than preexisting uses of ocean resources. Accordingly, in a situation where two agencies may be proposing projects in the exact same location, or where one agency proposes a project in the same location as an existing use managed by another agency, which agency should be the one to stand down? Or, more succinctly, how much conflict is too much to proceed?

There are, in fact, sources of law mandating that certain uses are protected. For example, BOEM has a legal obligation under the Outer Continental Shelf Lands Act, as amended by the Energy Policy Act of 2005, to protect existing "reasonable uses," such as commercial fishing, and consider areas for fishing and navigational purposes, in issuing offshore leases.[11] That law further prescribes that "the character of the waters above the outer continental shelf as high seas and the right to navigation and fishing therein shall not be affected" by BOEM's leasing of OCS submerged lands.[12] Other sources of law also prioritize certain uses over others.

FSF proposed the following solution for weighing the relative impacts of proposed offshore projects:

1. *Review the existing legal framework surrounding offshore resources, and clarify on the record which uses are protected or afforded deference.*

IV. THE RPB AND THE OCEAN PLAN MUST PROTECT THE COLLABORATIVE PROCESS IT HAS DEVELOPED THEREIN

As some of you may know, the Obama Administration recently proposed several areas off the coast of New England to be designated as national monuments under the Antiquities Act.[13] Notably, this process is occurring not only in the absence of public input or stakeholder consultation; it is occurring without any environmental impacts analysis or scientific review.

[11] 43 U.S.C. §§ 1337(p)(4)(I), (J).

[12] *Id.* § 1332(2).

[13] 16 U.S.C. § 431–433.

FSF is extremely concerned about the possibility of a large-scale closure, which may be enacted unilaterally and the consideration of which is proceeding in complete opposition to the stakeholder-based collaborative processes that we have all cultivated so carefully in the arena of ocean management. Not only is this process undemocratic but it could have substantial unintended adverse impacts across New England. Such a closure, for example, could displace not only fishing effort but other activities that may be well suited in the area and compatible with its ecosystem—leading to changes in bycatch composition, region-wide habitat, and the economies of coastal communities.

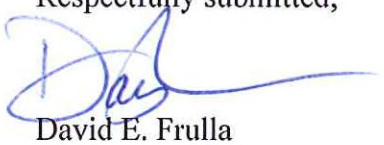
The RPB should likewise be extremely concerned about any untilaterally enacted ocean planning activities. We therefore recommend the following:

1. *The RPB should actively oppose any offshore activity, permit, or designation that does not follow the spirit and the letter of the ocean plan.*

* * * *

In summary, we urge the RPB to make tangible progress toward reducing conflicts over competing offshore resources by following the suggestions listed above. As we have stated before, early consultation on permitting and leasing decisions is critical. The RPB, while it lacks authority to amend the law or regulatory processes that prioritize existing resource users, is well-situated to drive adjustments such as these to ensure that activities are well-coordinated and that communication is effective. We appreciate the opportunity to submit these comments, and look forward to continuing to work with the RPB to develop solutions to offshore use conflicts.

Respectfully submitted,



David E. Frulla
Andrew E. Minkiewicz
Anne E. Hawkins

Counsel for Fisheries Survival Fund

From: **Robert LaBelle** <robert.labelle@boem.gov>
Date: Thu, Sep 24, 2015 at 3:47 PM
Subject: Re: Public comment to be distributed to Mid-RPB members
To: Bonnie Brady <greenfluke@optonline.net>
Cc: "midatlanticrpb@boem.gov" <midatlanticrpb@boem.gov>, Gregory Capobianco <Gregory.Capobianco@dos.ny.gov>, Michael Snyder <Michael.Snyder@dos.ny.gov>, Michael Luisi <MLUISI@dnr.state.md.us>, "kevin.chu@noaa.gov" <kevin.chu@noaa.gov>, "laura.mckay@deq.virginia.gov" <laura.mckay@deq.virginia.gov>, "lcantral@merid.org" <lcantral@merid.org>, "irigoyen@merid.org" <irigoyen@merid.org>

Bonnie,

Thank you for the in-depth comments and offer to share key data sets, as well as your participation in our meetings in Norfolk. I am asking our facilitators to forward your message to the full RPB member list and we will be working thru Mike Luisi to follow up.

Best,

Bob LaBelle

> On Sep 24, 2015, at 1:23 PM, Bonnie Brady <greenfluke@optonline.net> wrote:
>
> Hello,
>
> I was told yesterday I could electronically send public comment for today to you and you would distribute it to the various Mid-RPB members. If you could please do so, I realize the “live” public comment period is over for today, but if you could still send it to them now, it would be greatly appreciated.
>
> Thank you
> Bonnie Brady
> LICFA
> <Public Comment LICFA September 24 mid rpb.docx>

September 24, 2015

Members of the Mid-Atlantic Regional Planning Body
Re: Public comment as it relates to
(4) Plan Implementation
(5) Science and research Plan

Dear Members;

I would like to offer the following suggestions to issues discussed re the Mid-Atlantic Regional Planning Body (Mid-RPB) Draft Ocean Action Plan (OAP) This is a follow-up on my public comments of yesterday, and the day before at the Mid-Atlantic Regional Council on the Ocean (MARCO) public workshop. On both days, I tried to offer what I felt was necessary and focused criticism over gaps in the data and process, and I believe the following are necessary steps with which to make an effective Mid-RPB OAP product .

Since the Marine Life Data and Analysis Team (MDAT) program will be the primary technical support information resource for both MARCO and the Mid-RPB re technical support, "to insure the utility of the information for decision making,"[1] I feel that these steps must be addressed now.

As I discussed at the MDAT workshop discussion on Tuesday, without a more thorough review of the Northeast Fishery Science Center (NEFSC) trawl data, and augmentation with not only NEAMAP data, but pre-scrubbed (pre 2010) RV Albatross inshore sampling landings data (including Nantucket Shoals) that were removed to calibrate the RV Albatross with the RV Bigelow, I do not believe that the NEFSC trawl survey information will in any way be sufficient to show adequate areas of importance (richness, diversity or habitat) for fish in the MDAT model.

Augmentation of the data by the inclusion of the NEFSC cooperative research programs' e-VTR study fleet data should be added, along with vetting of the MDAT data by the NEFSC cooperative research program head John Hoey.

To create a more thorough stream of fisheries data information, the MDAT program should also enlist the aid of the Mid-Atlantic Fishery Management Council's (MAFMC) newly-created Trawl Advisory Panel (TAP) members, perhaps through a one-day workshop, to discuss the present fisheries data streams as they are captured and offer expert opinion re how to improve the level of information, along with information sharing re the nuts and bolts of trawl surveys and the modeling systems used. Both TAP and MDAT members could share input re trawl surveys and models used to capture data. Both teams together could work toward envisioning

[1] MARCO handout, "Scopes and Objectives for Information Synthesis to Support Mid-Atlantic Regional Ocean Planning."

future research projects and methods to capture fisheries data in a more thorough and comprehensive manner.

Regarding the Human Use Data Synthesis (HUDS) Project, using Vessel Trip Report (VTR) and Vessel Monitoring Systems (VMS) data I believe will yield woefully inadequate results. Some fisheries presently use AIS systems, I think it would behoove the HUDS project to meet with NOAA/National Marine Fisheries Service (NMFS) to discuss whether both NEFSC study fleet, and other AIS data can be added to the mix. I also believe that meeting with fishermen directly, perhaps at New England or Mid-Atlantic Fishery Management Council meetings, or as part of a one-day workshop with the MAFMC's TAP could offer better information re where and when fishing exists and to what extent.

Also, I feel very strongly that there should be inclusion of the New York State Offshore Atlantic Ocean Study data, compiled by NYSDOS and the Marine Program of Cornell Cooperative Extension of Suffolk County, to the MDAT, HUDS and Regional Ocean Assessment (ROA) projects data streams. It is simply the most comprehensive "dataset of physical, biological, geographic and socioeconomic information available for the Atlantic Ocean waters offshore of New York State,"[2] and took two years to complete. I believe it is the gold-standard for which MARCO and the Mid-RPB should strive to achieve in their MDAT, HUDS and ROA projects.

Without the inclusion of commercial fishermen in this process, and frankly, more preferably, at the table during all steps of this process, the Mid-RPB and MARCO groups are not availing themselves of fishermen's professional expertise and knowledge that could make the final project only better, more thorough and more accepted by those who make the ocean their workplace.

If the goal of the Mid-RPB is to truly create a pathway through the regulatory process for more informed decision making about our future ocean uses, then commercial fishermen and the fishing communities that depend on them, deserve effective and broad-based representation and input at every step in this process. Purely engaging with stakeholders, while not doing anything they suggest to improve the final product is frankly disingenuous, and the fishing communities of the Mid-Atlantic deserve better from their Mid-RPB and MARCO representatives.

Thank you,

Bonnie Brady
Executive Director , Long Island Commercial Fishing Association

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2 http://docs.dos.ny.gov/communitieswaterfronts/ocean_docs/NYSDOS_Offshore_Atlantic_Ocean_Study.pdf