

Advisory Council Meeting

March 5, 2021 | Meeting Summary

Developed by the Consensus Building Institute

Meeting-In-Brief

On March 5, 2021, the Responsible Offshore Science Alliance (ROSA) Advisory Council held its third meeting, convening 33 members, 13 alternates, and 36 research advisors (a list of Council attendees can be found in Appendix A). Forty-three interested others attended the event. At this meeting, ROSA:

- Shared updates on ROSA's Research Director search and ongoing efforts/work products
- Briefly reviewed ROSA role in science coordination and tracking, the role of research advisors
- Explored aligning NMFS surveys pre and post construction
- Explored baseline data improvement options

Meeting materials, including the agenda and presentations can be found on ROSA's website:

<https://www.rosascience.org/advisory-council>

Welcome

ROSA Executive Director Lyndie Hice-Dunton welcomed participants and, with Facilitator Patrick Field, oriented participants to meeting topics and agenda.

ROSA Updates

ROSA Executive Director Lyndie Hice-Dunton shared brief updates on ROSA's ongoing work and research in general, focusing on the ROSA Research Director search, interim monitoring guidance, Department of Energy (DOE) Funding Opportunity Announcement Concept Paper submittal, and ROSA Regional Research Framework.

ROSA Research Director Search

As of March 5, 2021, ROSA was still accepting applications to serve as its Research Director. Interviews will be conducted throughout March with the aim of filling the position by April/May. This new team member will help to expand ROSA's organizational capacity.

Interim Monitoring Guidance

Since Summer 2020, a 25-person ROSA working group has been working to develop a living, template-style guidance document for monitoring plans for offshore wind (OSW) and fisheries. In Fall 2020, draft guidance was presented at the Synthesis of the Science event in October and released for public comment which then closed on December 1. Incorporating feedback from more than 200 comments received as well as conversations with state and federal agencies to ensure alignment with existing monitoring standards, the ROSA working group reworked the document into a more comprehensive

framework. The revised interim monitoring guidance will be shared in the coming weeks on ROSA's website.

DOE FOA Concept Paper Submittal

ROSA recently submitted a concept paper to the Department of Energy for a \$3.5 million grant “to support regionally focused, coordinated research efforts to increase understanding of the environmental impacts of offshore wind development as well as to advance and validate technical readiness of tools for monitoring and minimizing impacts” in the topic area of “Environmental Research, Validation of Tools and Methods, and Multi-Year Evaluation of Impacts of Offshore Wind Energy Development on Ecology of Commercially Fished Species.” The concept paper served to demonstrate ROSA's capacity to address DOE's stated objectives and outline its multi-sectoral project team. If the paper is approved, ROSA will develop a full proposal for submittal in early May, designing an approach to achieve regional research and monitoring for OSW and fisheries, starting with a planning phase.

ROSA Regional Research Framework

ROSA recognizes an immediate need for an overall strategic plan for the region that integrates a regional monitoring framework and facilitates the synthesis and information-sharing. ROSA will be working to develop an approach; the interim monitoring guidance is an example of a short-term action to build toward the longer-term goal of increased regional coordination.

Below are attendee questions and comments that followed Dr. Hice-Dunton's presentation. Attendee questions are in regular type and answers are italicized.

- A webinar to provide updates on and answer questions about the interim monitoring guidance would be helpful.
- Identifying potential funding sources for research should be included in the regional research strategic plan.
- The total package of funding for science-related activities will be comprised of multiple sources over many years, and part of developing a regional strategy involves an institutional strategy for how all parties within ROSA work together, in the same direction. Multiple funding sources and multiple entities collaborating on the work allow the whole of these efforts to be greater than the sum of their parts.
 - *Recognizing that the regional framework is a bigger project than ROSA staff can handle at the moment, ROSA is looking to bring someone into help on this. This project would be informative for efforts going on at the state level, such as the regional funds in New York and New Jersey described at the last meeting.*
- How should ROSA address instances of potential conflicts of interest among Council members and Advisors being invited to serve on multiple proposal teams?
 - *ROSA is still learning how to handle these sorts of issues and will try to get more clarity on the rules. With the current DOE opportunity, full proposals will be due May 5, if ROSA is advanced to that stage. It is not clear how ROSA will involve Council members and Advisors in proposal development, but they would be heavily involved in the first phase of the project – working on a plan of coordination.*

ROSA Role in Science Coordination and Tracking

ROSA Executive Director Lyndie Hice-Dunton provided a brief overview of ROSA's role in science coordination and tracking, highlighting the importance of advancing data consistency, coordination, and

management. She shared that ROSA will be bringing in a technical contractor to conduct an assessment of existing tools and structures for coordination and data sharing for fisheries data, modeled after work that NYSERDA completed on environmental data. A number of ROSA members have volunteered to serve as part of a work group to help guide these efforts, and there is still an opportunity to join. Dr. Hice-Dunton also shared details on ROSA's pilot to track ongoing research, which will be led by the Research Director once on board. She noted that ROSA aims to centrally capture ongoing research and points of contact when it is in the stage between initial press release announcing successful proposals and final publications, potentially via a searchable database on the ROSA website.

Below are attendee questions and comments that followed Dr. Hice-Dunton's presentation. Attendee questions are in regular type and answers are italicized.

- Will biologic monitoring data be the sole focus of the technical contractor's scope?
 - *Monitoring data will be the primary focus, though ROSA also has a role in socioeconomic discussions. The contractor will also be tasked with reviewing the sources of data, including industry data, looking at what's accessible, ongoing efforts, etc. Volunteers guiding this contracting effort will have an opportunity to review and refine the RFP and its scope.*
- From the federal standpoint, it is important to differentiate fishery dependent versus fishery independent data to ensure the right people are in the room.
- Over the past 2 years, NOAA has invested a large amount of money in the development of databases under the banner of "ocean observing" at different levels. This is a huge infrastructure that would be appropriate for consideration for data generated by ROSA activity.
- Are there lessons to be learned from Tethys or the Environmental Studies Program, or is there a way to have them do the tracking?
- ROSA should be cautious about the amount of work required for building a live database sourced by ROSA outreach for tracking on-going, existing research – there is an advantage in relying on researchers reaching out to be added because it allows ROSA to collect information on what they are planning.
 - *It will be no small task to keep this up to date. The Research Director will become the point of contact for the tool, which could maybe be updated every 6 months on project status.*
- Is BOEM already doing a substantial amount of tracking that can be integrated here?
 - *BOEM does have an environmental planning website. For what is being discussed here, Tethys is the more relevant public forum. BOEM works to maintain relationships with federal agencies to track ongoing efforts, but that is not reflected on the public website.*

Discussion: Role of ROSA and Research Advisors

ROSA Executive Director Lyndie Hice-Dunton framed a conversation on the role of research advisors with a brief review of ROSA roles and responsibilities, highlighting Research Advisors' role, and an announcement of ROSA's selected Advisors, available to view [here](#).

Attendees then participated in a discussion and online polling exercise to identify "How best to use our governance structure, our new Research Advisors, and or interim monitoring guidance to learn, adapt and improve individual monitoring and research efforts as they move forward?" (*Please see Appendix B for a complete list of member responses.*) Key discussion threads included:

- **Provide independent review of research and proposals:**
 - Access to ROSA’s collective brainpower is one large benefit and can help members pursue smaller pots of funding that arise.
 - Independent review could be a beneficial role of Research Advisors, but ROSA will need to carefully consider and define the bounds of that review – what products would be reviewed, what formality does the review imply, what does the review mean, how much time is being asked, etc. (e.g., ROSA could potentially be asked to review monitoring protocols from developers, requiring a set review process).
 - Regarding surveying specifically, Research Advisors could play a role in reviewing survey methodologies to ensure that the right gear is being used correctly by the right people. Ensuring consistency of survey work could be especially salient in the fishing industry.
 - ROSA noted that the Research Advisors do contain industry experts with experience and that external expertise can be brought in as necessary. The Interim Monitoring Guidance pushes at a high-level for greater consistency, but it is not prescriptive (e.g., which gear types).

- **Improve coordination across research efforts:**
 - Coordination will be essential given the scale of research efforts. The ROSA Research Director could serve as a coordination hub, providing a platform to receive updates, identify priorities, and ensure that there are no existing research gaps or duplicative efforts.
 - Self-identification of Research Advisors’ expertise should be identified on the ROSA website to ease coordination and collaboration.

National Marine Fisheries Service Survey Pre and Post Construction Alignment

Andy Lipsky, Fisheries and OSW Lead, NOAA Northeast Fisheries Science Center, shared a presentation on National Marine Fisheries Service (NMFS) Survey Mitigation Updates. He reviewed the scale of NMFS surveys across the New England large marine ecosystem, touched on three key assumptions relevant to how wind energy impacts regional surveys for population studies, and highlighted the implications of NOAA Fisheries Survey Disruptions on multiple parties. He then shared that NEFSC is in the initial planning phases of this project, having formed an inter-agency agreement with BOEM to:

- Develop a strategy to mitigate wind energy areas impact on NEFSC Multispecies Bottom Trawl Survey
- Solicit a contractor & Cooperative Institute for North Atlantic Region support
- Plan for two stakeholder workshops in 2021 to develop modeling framework to evaluate survey impacts and alternative methods through simulation

He noted that the project team is investigating options for supplemental bottom trawl survey efforts on smaller vessels capable of operating inside wind energy areas and shared updates on NMFS’ efforts to develop a Scallop Survey Strategy.

Below are attendee questions and comments that followed Mr. Lipsky’s presentation. Attendee questions are in regular type and answers are italicized.

- If the new MRIP data has taught us anything, we need to seriously focus on the potential impacts to fisheries management from surveying. There is an opportunity to talk stakeholders through that process. What might that look like from the Agency's perspective?
 - *If our surveys become less precise, less accurate, we increase our uncertainty. Managing that uncertainty by applying the precautionary approach will likely result in more conservative quotas. This will also apply for protected species. It is critical to obtain accurate, precise information to inform fisheries management, knowing that different stock will feel impacts in different ways.*
- Stakeholders need to understand potential impacts on a species-specific level. It is essential to understand the management implications.
- This development is exciting and seems to overlap with the Northeast Trawl Advisory Panel (NTAP). How will NTAP interact with the described plan?
 - *This effort would be a good reason to mine NTAP's expertise. What was presented is a proposed approach, but there are not yet funds for implementation. NTAP is ultimately a bi-Council body that is looking for and identifying research priorities. There are individuals and expertise in that group necessary to help solve this problem. Questions of coordination and collaboration will likely rest with the Councils, potentially navigating sticky issues of setting up an industry, non-technical body to provide technical advice.*
- Greater uncertainty creates further reductions in potential catch because of the precautionary approach, which makes this a double hit to the industry. Further, there is a consideration about changes in time series – it may make some of the important fishery management reference points unable to be estimated, creating further management difficulties. The described plan looks reasonable, but it is missing a sense of urgency. We do not yet have a plan for addressing impacts on surveys that is well-calibrated for the expected time period. There is urgency and action to be taken now – e.g., exploring gear types with pair-wise sampling methods.
 - *There is definitely a sense of urgency, and there is a federal collaboration with BOEM on this topic currently. It will take years to determine new survey platform designs and calibrations. NMFS has mapped a 30-year operational period for a lease and the types of solutions likely needed to implement the 6-part plan. This is something that is solvable, but it requires time and resources. Currently, this is just a NMFS proposal for how to proceed if money is available.*
- We have a clear sense that all of this occurs for the whole system, which is already in flux. I hope that someone in NMFS is giving consideration to how we might conduct monitoring off ship.

Improving Baseline Data Now

ROSA Executive Director Lyndie Hice-Dunton opened a conversation on baseline data by revisiting survey responses from the November 2020 Advisory Council Meeting, where members raised multiple priorities for ROSA related to improving baseline data. She highlighted the emergent nature of the issue, asking Advisory Council members to help explore what ROSA can do as soon as possible to address baseline data needs. She noted the Council should consider baseline actions that could meet the following criteria: 1) practical and tractable; 2) achievable within 2 to 3 years; 3) Implementable quickly; 4) useful to inform future efforts

To help inform the Council's discussion, Dr. Josh Kohut presented briefly on Rutgers January workshop on establishing baseline data. The workshop concluded: 1) it is important to coordinate wherever possible to keep things consistent between different studies/surveys; 2) we need to design, test, and calibrate new study methods before construction; 3) we need to design new sampling techniques in a

way that they can be incorporated into long-term existing data streams; 4) we need to coordinate, collaborate, and communicate.

Breakout Discussions: ROSA's Role in Baseline Activity Prioritization

Attendees were organized into small, facilitated breakout groups. Attendees worked in six small groups (organized by Council Members and Research Advisors, Council Alternates and members of the ROSA Board of Directors, and other participants). Discussion groups surfaced myriad advice and guidance for how ROSA might advance baseline data in the short term. Key takeaways included:

- **Identifying control areas:** Considering a 2-3-month actionable timeline for improving baseline data, ROSA could identify control areas in the wind area footprints for surveys within and around wind energy areas.
- **Assessing existing research and coordinating efforts:**
 - ROSA could be helpful in coordinating communication around what activities are happening. The speed of development is incredible, and there are so many different projects that are going on already.
 - ROSA could compare ongoing project research and monitoring to ideal standards (potentially set by ROSA) to determine if studies are meeting recommended criteria and if there are supplemental studies needed. However, addressing what fisheries and environmental data needs to be collected may not fully integrate what science and expert-led potential impacts targeted research could reveal.
 - ROSA could match existing, available oceanographic and fisheries data to help better understand baseline conditions.
 - ROSA could assess similarities and differences within surveys and look for shared methodologies
 - There is potential for ROSA to create a roadmap for a regional baseline.
- **Integrating fishermen knowledge:**
 - Three potential approaches for using fisheries ecological knowledge include: driving research questions and helping plan research design; conducting cooperative research with vessels collecting data to feed into research and surveys; and capturing the knowledge stream from commercial fisherman while fishing. As an example, the RODA Fishermen's Data Trust is a body working to capture that knowledge.
 - Fishermen's local ecological knowledge needs to be considered and captured but designing ways to do so can be complex. Standardizing social science research along with scientific research and structured monitoring could be valuable to conflict resolution and demonstrate to fishermen that their knowledge is being taken into consideration.
 - Current surveys use different gear types, which must be considered in ROSA's review. Data and catchability of species may differ depending on gear type used. To address the variability of catchability of gear, ROSA could convene a panel of experts that know gear well (especially fishermen) to review studies and plans.
- **Designing accurate studies:** The variation of species and life stages in particular areas need to be assessed. It will be important to include larval and juvenile stages in studies.
- **Allocating funds strategically:** ROSA will need to consider funding availability to strategically determine the allocation of funds to achieve accuracy and avoid redundancy in monitoring.
- **Accounting for interference with the baseline:**

- If current geotechnical surveys are affecting fish distribution, that could be affecting the interpretation of the “baseline.” An accurate baseline is essential to enable assessment of fish behavior, distribution, etc. after projects.
- Wind projects are asynchronous; one lease may be in pre-construction and another in construction. ROSA will need to consider whether differential timelines for development will have a spill over or adversely affect baseline monitoring going forward in time? If species are displaced, for instance, they may move into areas monitored for “baseline” and change it.

Attendees were invited to share additional takeaways from their breakout group discussions in an online poll, results available to view in Appendix B.

Science Updates from the Region

ROSA Executive Director Lyndie Hice-Dunton invited representatives from multiple ongoing research projects in the region to provide brief updates to attendees.

International Council for Exploration of the Sea (ICES) - Work Group for Offshore Wind Development and Fisheries (WGOWDF): Andy Lipsky, NMFS, shared about the ICES Offshore Wind and Fisheries Work Group, noting that it has a three-year scope and will include fisheries independent and dependent data to explore ecological and fish habitat in three different areas of focus. Fiona Hogan, RODA, then shared about the associated ICES Socio-Economic Work Group, highlighting the upcoming workshop on socioeconomic implications of OSW and fisheries, which will result in a report.

Southern New England Regional Science Pilot Projects: Kathryn Ford, MA DMF, provided a brief overview on the status of five research projects funded through the Southern New England Regional Science Pilot, a collaboration between BOEM, the Massachusetts Clean Energy Center, and RI DEM. (More detail on the projects is available [here](#) on BOEM’s website). In response to attendee inquiry about the inclusion of industry data in project “Fishing Status of Vessels Using the AIS: A Big Data and Machine Learning Approach,” Julia Livermore, RI DEM, noted that accessing data available to fisheries managers has been a hurdle and that the project team is considering incorporating plotter data directly from industry vessels, if it would be provided. Jeff Kneebone, New England Aquarium, then provided greater detail on HMS Telemetry and Tracking Study, highlighting that 29 animals were tagged last year, focusing specifically on shortfin mako sharks, blue sharks, and bluefin tuna, and that the project is in the process of analyzing data in coordination with a BOEM-funded study on cod. This coming year, the project hopes to expand its monitoring range and species captured.

NYSERDA funded projects and State of the Science Working Groups: Morgan Brunbauer, NYSERDA, presented updates on five contracted NYSERDA-led studies from a 2019 solicitation. He also spoke to ongoing efforts coming out the 2020 State of the Science on Offshore Wind and Wildlife, noting that there are seven working groups operating in 2021 to develop a research agenda of key studies that could be conducted in the next 3-5 years to improve our understanding of cumulative biological impacts as the offshore wind industry develops in the eastern United States. There will be a webinar in May 2021 to report back on efforts and synthesize across groups; final workshop proceedings will be released in summer 2021.

Maine Research Array: Meredith Mendelson, ME DMR, shared updates from ongoing OSW efforts in Maine, noting that the state recently announced its interest in developing a research array proposal as

part of a suite of work centered around OSW. She reviewed Maine's research approach and reported that the research array process will include multiple elements, such as a state of knowledge workshop, webinars to build cross-sectoral understanding, work sessions and joint workshops, and dockside and informal fishermen and public engagement.

Synthesis of the Science: Fiona Hogan, RODA, closed out the research updates with a brief status note about the Fisheries and OSW Interactions Synthesis of the Science project, which included a widely attended workshop October 2020 and will culminate in a report expected to be completed in June 2021.

Next Steps & Adjourn

ROSA Executive Director Lyndie Hice-Dunton presented ROSA's near-term goals, including expanding its organizational capacity, posting the interim monitoring guidance on its website, advancing its data coordination efforts through a contractor, expanding and sharing an ongoing research inventory on its website, developing a strategic approach for a regional plan, and following up with Advisory Council and Research Advisors via survey to further refine baseline data needs. She noted that there will be a check-in with Advisory Council members to obtain process feedback now that the Council has been operating for 6 months. Dr. Hice-Dunton closed the meeting by thanking Council Members and attendees for their time and participation.

Appendix A | ROSA Council Member and Alternates Attendance

| | |
|--------------------|--------------------------------------------------------------------|
| Peter Aarrestad | Connecticut Department of Energy and Environmental Protection |
| Michelle Bachman | New England Fishery Management Council |
| Crista Bank | Vineyard Wind |
| Chris Batsavage | North Carolina Department of Environmental Quality |
| Robert Beal | Atlantic States Marine Fisheries Commission |
| Samuel Beirne | Maryland Energy Administration |
| Rick Bellavance | Priority Charters, LLC |
| Ellen Bolen | Virginia Marine Resources Commission |
| Bonnie Brady | Long Island Commercial Fishing Association |
| Morgan Brunbauer | New York State Energy Research and Development Authority |
| Colleen Brust | New Jersey Department of Environmental Protection |
| Cassie Canastra | BASE New England |
| Doug Christel | Greater Atlantic Regional Fisheries Office |
| John Clarke | Delaware Department of Natural Resources and Environmental Control |
| Greg DeCelles | Ørsted |
| Peter deFur | Mid-Atlantic Fishery Management Council |
| Jarrett Drake | Drake Lobster |
| Kathryn Ford | Massachusetts Department of Marine Fisheries |
| Willy Goldsmith | American Saltwater Guides Association |
| Brian Hooker | Bureau of Ocean Energy Management |
| Lane Johnston | Responsible Offshore Development Alliance (RODA) |
| Pamela Lafreniere | Commercial fishing consultant |
| Greg Lampman | New York State Energy Research and Development Authority |
| Kirk Larson Jr. | Lindsay L Inc. |
| Andy Lipsky | Northeast Fisheries Science Center |
| Julia Livermore | Rhode Island Department of Environmental Management |
| Frederick Mattera | Commercial Fisheries Center of Rhode Island |
| Catherine McCall | Maryland Department of Natural Resources |
| Rachel Pachter | Vineyard Wind |
| Cheri Patterson | New Hampshire Fish and Game Department |
| Michael Pierdinock | CPF Charters |
| Mike Pol | Massachusetts Department of Marine Fisheries |
| Kathleen Reardon | Maine Department of Marine Resources |
| Eric Reid | Commercial fishing consultant |
| Sarah Schumann | commercial fishing deckhard & Shining Sea Fisheries Consulting |
| Guy Simmons | Sea Watch International/TMT Clams |
| Mike Sissenwine | New England Fishery Management Council |
| Joel Southall | Mayflower Wind Energy |

| | |
|---------------|-----------------------------------------------------------------------|
| David Stormer | Delaware Department of Natural Resources and Environmental Control |
| David Tobey | Virginia Saltwater Sportfishing Association |
| John Toth | Jersey Coast Anglers Association & Saltwater Anglers of Bergen County |
| Mike Waine | American Sportfishing Association |
| Kevin Wark | Endeavor Fisheries |
| Kate Wilke | Mid-Atlantic Fishery Management Council |
| Carl Wilson | Maine Department of Marine Resources |

Appendix B | Mentimeter Polling Results

| # of “Up Votes” | Idea or Suggestion for Role of Research Advisors |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22 | Provide peer review for ROSA funded research |
| 18 | Provide insight and forecasting of upcoming issues/research priorities |
| 16 | Improve coordination across research efforts |
| 15 | Help to identify research priorities |
| 14 | Methodological changes and scaling issues with existing surveys |
| 14 | Clarify opportunities for fishing industry to participate in cooperative research/monitoring |
| 13 | Determining data gaps on a consistent basis. |
| 13 | Ensure connectivity between proposed research and monitoring projects |
| 11 | Identify overlooked topics |
| 11 | Review research proposals |
| 10 | Assist in scoping or reviewing project ideas for funding |
| 9 | Provide expertise and guidance on methodological issues |
| 8 | Connect/represent ongoing projects |
| 8 | 'Ground truthing' proposed efforts and their feasibility/utility; cross referencing one particular effort being discussed at any given time with other efforts to coordinate all efforts. |
| 8 | Constructive criticism and sounding board for Science Director |
| 7 | Identify research priorities for fisheries and offshore wind |
| 5 | Identify research priorities and review proposals |
| 5 | Vet proposals for research priorities from the wider community |
| 5 | Give a State of the Science annually |
| 4 | Help to identify and support cooperative research opportunities to involve commercial/recreational fishermen and vessels. |
| 3 | Help identify diverse funding opportunities that the strength of ROSA can be successful applying for |
| 3 | Following current published research and identifying important developments/findings. |
| 2 | Identify ongoing work |
| 2 | Go to existing wind farms and see the overall effect on the habitat before and after construction |
| 2 | Guide research relevant research |
| 2 | support peer review |
| 2 | Choose which research is most acutely needed and triage research from there. |
| 2 | Lobby at the federal level to obtain a guaranteed funding stream for research and management. Can we convert to more of a hard money model to be able to move the science forward faster? |
| 1 | Review draft data before write-up into reports |
| 1 | I think there is a clear communication role. This group across many sectors could share and communicate effort to facilitate the regional coordination need discussed this morning |

- 1 Review outlines or scopes for planned projects or products (like the documentation efforts mentioned)
- 1 Frame industry's concerns into viable research to answer questions.
- 1 Choose which research is the most acute, and triage research accordingly
- 1 Integration across agencies - breakdown silos
- 1 Provide local and professional areas of expertise and topics of concern
- 1 Provide regional perspective (e.g. New England/GOM, Mid Atlantic, South Atlantic)
- 1 Format the science into coherent public outreach to have living documents on the major issues
- 1 Ground truth the ROSA and US work with our worldwide industry, EU and other experience.
- 1 Risk retirement.
 - Help develop scope of work for RFPs
 - Help flag partnership/collaboration/funding opportunities
 - As an idea board to questions.
 - Provide opportunities for fishermen to visit turbine arrays
 - Help ensure outputs and products are used.
 - Insure multiple perspectives in monitoring and research plans and actions.
 - Continually think of ways that the two industries can work together rather than find differences where we stall both industries. There are many more ways that we can steer efforts apart, move together
 - In any project, provide very clear parameters for format, criteria and methodology in order to attain results that will pass peer review
 - Advisors should get their heads out of the traditional science model and forge new ground so we can move things forward in a timely manner. Brainstorm on how to break away from traditional roles.
 - Recommend methodologies/sampling strategies
 - On any project, provide clear guidance on objective, format, methodology and protocol in order to attain a result that will pass peer review
 - Find the topics that no one has identified and rank its risk and potential impacts. Think outside the box and innovate in the high-risk high reward space in this intersection between the industries.
 - Overturn every stone on these issues and bring the results into an annual summary for the stakeholders to be kept informed

| # of "Up Votes" | Idea or Suggestion for Improving Baseline Data |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Monitoring protocols and methods must be feasible both before and after wind turbine installation. |
| 6 | Need to consider dynamic nature of the baseline |
| 5 | Consistency in methodology for baseline data collection across projects/regions. |
| 5 | The MA and RI WEAs seem like a great arena for RODA to help coordinate methods and questions across ongoing monitoring - which could benefit other areas where these same developers work |
| 5 | Need to integrate fisherman's local ecological knowledge alongside scientific research |

- 5 If in ROSAs scope, the regional economic impacts of this development on the existing activities (including shoreside and fishing supply chain) baseline is also incredibly important with variance
- 4 Baseline data collection for fish and wildlife in the WEAs may already be impacted by past and ongoing geo-tech and geo-physics surveys that could be changing species behavior and distribution
- 3 Need to establish a set of standard protocols for each species that should be used by anyone collecting data
- 3 Baselines already being impacted by wind energy development in some areas
- 3 Re. big \$ fisheries having multiple studies other less \$ per pound species have a larger economic effect across regions such as Southern New England, large volume trawl fisheries must be examined also
- 3 Can we integrate anything from commercial fisheries observers into the baseline data stream to ground truth any landings data to get a better idea of the locations and yield?
- 2 Need to focus on data gaps.
- 2 Don't overlook baseline datasets outside of fisheries per se that integrate health of fisheries --- seabird datasets, which rest on baitfish, go back 30 to 50 years, and near wind farms
- 2 Need to include baseline info contained in seabird colonies
- 2 The raw data must be publicly available
- 2 So many decisions are DATA driven and ignore EXPERIENTIAL on the water experience. The baselines need to develop ways to translate the experiential into measurable data.
- 1 There needs to be documentation of a framework in the very near-term that can be reacted to, finalized as a stage-gate and then built upon with improvements and clarifications.
- 1 If 2-3 years of data to be collected as baseline, consider concurrent sampling in two areas - one as a control and other in prospective lease area then continue data collection post-construction.
- 1 Need a framework that invites local effort to contribute to a regional baseline
- 1 Baseline data starts with our regional shelf wide surveys--we are about to lose that information. Can ROSA communicate this need to the federal agencies & Congress?
- Need to start getting all components moving before steel is in the water
 - 2-3 years may seem brief, but longer data sets will be influenced by longer term climate change; longer data sets are highly variable, so hard to find effects
 - Need more data on fishing activities not captured in other sources
 - Addressing what popular fisheries and environmental data need to be collected does not fully integrate what science and expert-led potential impacts targeted research could reveal.