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Stakeholder Perspectives on the Development of a North Atlantic Right Whale Vessel Risk Reduction Strategy

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Facilitator:

Bennett Brooks, Consensus Building Institute
Nate Lash, Consensus Building Institute

Cover Photo:

The crew transfer vessel *Atlantic Pioneer*, the first offshore wind vessel built in the United States to support the construction and operation of the Block Island Wind Farm. Photograph credit: Kyle Baker, Marine Biologist, Bureau of Ocean Energy Management, Office of Renewable Energy Programs.

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BACKGROUND AND PARTICIPANTS

The Bureau of Ocean Energy Management (BOEM) asked the non-profit Consensus Building Institute (CBI) to hold roundtable discussions in spring 2022 with a range of stakeholders to get their perspectives to inform future BOEM North Atlantic Right Whale (NARW) strategies to reduce vessel strike risks in offshore wind industry activities.

In March and April 2022, CBI facilitated a series of stakeholder-group-specific dialogues with representatives from four distinct stakeholder categories:

- Federal partners[1]
- Non-governmental environmental organizations
- Non-governmental NARW scientists and researchers
- Offshore wind energy developers

CBI also followed up with individuals via phone and email as needed and conducted in-depth conversations with BOEM and BSEE staff to better understand perspectives and ideas shared during the stakeholder dialogues. The stakeholder dialogues included 42 individuals representing 24 different companies, organizations, and agencies listed in the table below.

STAKEHOLDER GROUPS	COMPANIES, ORGANIZATIONS, AND AGENCIES REPRESENTED	# OF MEETINGS
Federal Partners	Marine Mammal Commission, US Coast Guard	2
Non-governmental environmental organizations	Animal Welfare Institute, Center for Biological Diversity, Conservation Law Foundation, Defenders of Wildlife, National Wildlife Fund, Natural Resources Defense Council, Inc., Oceana, Southern Environmental Law Center, Whale & Dolphin Conservation USA	2
Non-governmental NARW scientists and researchers	Center for Coastal Studies, New England Aquarium, University of North Carolina Wilmington, University of Rhode Island, Wildlife Conservation Society, Woods Hole Oceanographic Institution	3
Offshore wind energy developers	Atlantic Shores Offshore Wind, Avangrid, Dominion Energy, Equinor, Mayflower Wind, Ørsted, Vineyard Wind, US Wind	2

[1] NOAA Fisheries was invited to participate in interviews, but opted instead to engage directly with BOEM.

The following includes a summary of key findings from formal and informal discussions with the NARW stakeholders listed above as well as recommended next steps related to developing a future BOEM NARW strategy. For simplicity and readability, the names of the four stakeholder groups have been shortened to "federal partners", "eNGOs", "researchers", and "developers". Summaries of the ideas and feedback shared from each stakeholder group can be found in Appendixes 1-4.

KEY AREAS OF ALIGNMENT

Shared perspectives emerged across all NARW stakeholder groups who participated in the dialogues. The following includes several meaningful areas of agreement on the current approach as well as a future strategy:

Current Strategy

- **Confusion over current requirements:** Current requirements for offshore wind (OSW) vessels are difficult to understand, follow, and enforce because whale protection measures outlined in various BOEM documents are seen as inconsistent, not clearly communicated, laborious, and not aligned across leases, projects, geographic locations, and federal agencies.
- **10-knot speed restrictions in Seasonal Management Areas (SMAs):** 10-knot speed restrictions in SMAs are generally accepted as necessary to avoid vessel strikes until alternate risk reduction measures can be proven to be as equally effective. Groups diverged on whether these restrictions should be supplemented, expanded, revised, or replaced.
- **Few incentives to innovate:** The current strategy does not provide meaningful incentives for stakeholder groups to innovate and advance new technologies that could further reduce vessel strike risks. Developers expressed frustration that in some cases, innovating and adopting new technologies has resulted in more restrictions on their activities.

Future Strategy

- **Robust protections for NARWs across industries:** All stakeholders understand the importance of providing robust and effective protections to NARWs from OSW vessels due to its declining population and precarious status as a species. Groups were also in agreement that serious risks to NARWs exist from all vessel types and industries, not just those associated with OSW activities, and need to be addressed. There was consensus that non-OSW industries and ocean users need to adopt stricter restrictions and vessel strike avoidance measures to protect NARWs and other endangered and protected species.
- **Increased BOEM/NOAA coordination:** All stakeholder groups expressed an interest in seeing greater coordination and integration between BOEM and NOAA rules, restrictions, risk mitigation measures, and reporting protocols to reduce confusion and inconsistent and overlapping approaches that create operational and legal difficulties for ocean users.

- **Incentivizing innovation:** There is broad agreement that more innovation and technological advancement is needed and should be incentivized to lower the risk of vessel strikes and right whale encounters.
- **Mandatory and voluntary measures:** Voluntary measures have been shown to be ineffective[2][3] for enforcement but could be incentivized and rewarded to increase compliance.

Other areas of converging perspectives include:

- Stakeholders expressed support for BOEM to take more ownership of its statutory obligations and responsibilities and take a more proactive role related to: incentivizing investment and innovation to avoid vessel strikes, establishing clear measures and lease stipulations that are easy to understand and implement, collecting data to increase understanding of risks related to OSW activities, coordinating enforcement of current and future requirements with other agencies, and real-time data collection, analysis, communication, and oversight of operations it permits.
- BOEM and NOAA should provide clear and consistent guidance on monitoring, mitigation, and reporting requirements in the event of near misses, encounters, and vessel strikes.

KEY AREAS WITH DIVERGING PERSPECTIVES

While there are shared perspectives and alignment across a number of topics, numerous areas of divergence emerged. The conversations highlighted fundamental differences at a most basic level resulting in divergent views related to what is working, what needs to change, and what should and should not be included in a future BOEM NARW strategy. Below is a summary of key areas of divergence.

Current Strategy

- **Effectiveness of current speed restrictions:** The participating researchers and eNGOs believe that current speed restrictions (both BOEM and NOAA SMAs) are too limited in space and insufficient as they do not apply to vessels of all sizes or vessels in transit between the port and project area. Participating developers believe that current speed restrictions and supplemental risk avoidance measures have been effective in avoiding vessel strikes related to OSW activities and believe more stringent restrictions are too blunt and ignore project specifics, seasonality, and the operational, economic, and safety implications.

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[2] https://media.fisheries.noaa.gov/2021-01/FINAL_NARW_Vessel_Speed_Rule_Report_Jun_2020.pdf?null

[3] https://usa.oceana.org/wp-content/uploads/sites/4/4046/narw-21-0002_narw_ship_speed_compliance_report_m1_digital_singlepages_doi_web.pdf

- **Visual observer effectiveness**: Developers believe that Protected Species Observers (PSOs) and visual observation strategies have been effective in reducing and avoiding vessel strikes even as observer experience and training requirements vary across vessels, projects, and developers. ENGO representatives and researchers expressed concerns that even well-trained observers are sometimes unable to spot NARWs because of how difficult they are to detect visually. ENGOs also believe that crew-trained observers may not be as effective as federal observers and may be more susceptible to industry pressures.

Future Strategy

- **Risk tolerance:** Some groups, particularly the eNGOs and researchers, believe BOEM needs to take a zero-risk approach regarding vessel strikes and implement the most protective measures possible given dwindling NARW population. Developers argue that all ocean activities involve some risk and risks associated with OSW activities need to be balanced against the benefits.
- **Speed restrictions:** Researchers, eNGOs, and federal partner representatives were generally in agreement that speed restrictions are critical and necessary to reduce the risk of NARW strikes while developers believe that speed restrictions are overly restrictive and could be replaced with equally effective vessel strike avoidance measures. There was some consensus that vessel speed restrictions should be tied to the real risk of vessel strikes which varies depending on visibility, location, season, risk reduction measures in place, and other factors. Developers are eager for more flexibility of risk reduction measures and are open to investing in and adopting additional vessel strike avoidance measures if those measures would allow them to travel at faster speeds. Representatives from various groups disagreed whether or not vessels should be given an opportunity to travel faster if the conditions create a similarly low risk. At the core of this disagreement are different levels of risk tolerance and different opinions on whether or not other risk reduction measures (e.g., passive acoustics coupled with visual observations) can provide the same level of safety and protection as slower speeds.
- **Technology and other vessel strike avoidance measures:** Groups disagreed on the accuracy and effectiveness of whale sighting and monitoring technologies and risk reduction measures including passive acoustic monitoring (PAM), trained observers, aerial surveys, acoustic buoys, and infrared monitoring. Developers believe that combining various technologies and strike avoidance measures can provide the same level of risk reduction as slower speeds while other groups do not believe current technologies and alternatives are as equally effective as slowing down. There was also disagreement on how soon those whale monitoring technologies and alternative strike avoidance measures will be able to provide a certainty of risk avoidance equal to a 10-knot speed restriction. Unfortunately, there appears to be little data showing how effective these measures are - either individually or in combination - in reducing the risk of vessel strikes.
- **Seasonal vs. dynamic management:** While all groups acknowledged that SMAs on their own cannot provide full protection to whales as NARW activity is not confined to those areas and is increasingly unpredictable, divergent views emerged on the merits of

seasonal and dynamic management areas (DMAs). Generally, developers are more supportive of DMAs because they allow for more flexibility and adaptability while other groups are more supportive of seasonal management areas (SMAs) because they can be easier to understand and enforce. There seems to be a disconnect across groups on the benefits of SMAs to OSW developers. There were several instances where eNGOs or researchers highlighted the benefits of SMAs to developers (i.e. SMAs are better for developers because they allow developers and vessel captains to plan ahead and build them into their schedules and budgets) while developers emphasized their drawbacks to industry (overly and unnecessarily constraining). In general, these views on management areas also mirrored how the groups thought about an effective strategy, with developers looking for more flexibility and other groups advocating for static restrictions and maximum protections that are set in advance.

Other areas of diverging perspectives include:

- Groups differed on how the strategy should consider parity and consistency of r across industries. Developers believe that the avoidance measures they use result in a lower relative risk of vessel strikes than other industries and should be treated accordingly. Other groups believe that OSW activities introduce new risks to NARWs and that the BOEM should enact the maximum protections available within its jurisdiction to protect the species and serve as a model to other industries.
- While developers believe that having trained observers, coupled with other measures such as passive acoustics, should allow vessels to travel at faster speeds, they also have concerns that requiring dedicated observers on all OSW vessels would be cost prohibitive and negatively impact operations due to bunk space limitations on vessels. While the eNGO and researcher groups are wary of relying on trained observers due to doubts about their effectiveness, they advocated for increasing observer requirements as well as more standardized training and certification processes.
- While there was general appreciation of BOEM seeking input on a potential NARW strategy from all stakeholder groups, interest in continued engagement and dialogues varied across groups. Especially among the eNGOs and researchers, there is limited interest in elaborate stakeholder-agency discussions and a strong desire for BOEM and NOAA to put their time and energy into firm and proactive actions with proven benefits to NARWs.

Strategies for Pushing Forward

To be sure, there are sharp disagreements across stakeholders that are unlikely to be resolved through any near-term dialogues or BOEM-led actions. ENGOs and developers, for example, are unlikely in the near future to reconcile their differing views on the extent to which offshore wind activities are inherently less risky than other user groups. That said, our discussions with the stakeholder groups do suggest a handful of concrete and important steps BOEM can take to make progress on an offshore wind NARW strategy.

Three recommendations, in particular, stand out to us – both for their potential for stakeholder support and their potential to make a difference: (1) harmonizing the federal approach, (2) better understanding and reducing the risks to NARWs from OSW activities, and (3) starting to design a risk reduction equivalency pathway.

Harmonizing the federal approach

Stakeholders across all groups see the need for greater clarity and coordination between BOEM and NMFS. They are particularly concerned about the potential for confusing or even contradictory guidance. To address this concern, we recommend the following:

- BOEM and NOAA Fisheries continue discussions to harmonize their vessel strike risk reduction efforts (whether in regulation or in lease stipulations). This includes strengthening the synergy and consistency across their various measures, as well as identifying and reconciling, as possible, any contradictory measures.
- BOEM and NOAA Fisheries issue a joint communication to stakeholders explaining their responsibilities in addressing vessel strike risk, highlighting both their distinct and overlapping roles. This could be in writing, via a webinar or both.
- BOEM and NOAA Fisheries create joint opportunities for stakeholders to provide feedback on the agencies' harmonization and coordination efforts.
- BOEM dedicates and/or empowers more staff to represent the agency in conversations with federal partners and other stakeholders (e.g., assign a BOEM representative to the USCG southeast team).
- BOEM works with NOAA to develop a standardized process for regularly reviewing and revising management area boundaries (e.g., converting DMAs with significant NARW activity into SMAs or vice versa).

Better understanding and reducing the risks to NARWs from OSW activities

The increase of OSW activities in the ocean over the last decade have highlighted latent and emerging issues and threats to NARWs and other endangered and protected marine species. As BOEM plays an increasingly important role in shaping ocean users and activities, there is an opportunity for BOEM to identify and fill existing data gaps and action areas necessary to protect NARWs. We believe that BOEM could do more to measure the effectiveness of the current and future strategy and better signal to all stakeholders how BOEM is addressing risks to NARWs. To better understand and reduce the risks of vessel strikes, we recommend BOEM consider the following:

- Providing ongoing data on offshore wind projects to track and assess the extent to which current risk avoidance measures are effectively eliminating or minimizing NARW vessel strike risk in offshore wind.
- Discussions with stakeholders would be helpful in identifying relevant data and data needs related to the effectiveness of different combinations of NARW monitoring and

avoidance measures including passive acoustic monitoring (PAM), trained observers, aerial surveys, acoustic buoys, and infrared monitoring.

- Gathering data on effectiveness of PSOs and trained crew observers in reducing risks of vessel strikes and NARW encounters.
- Fostering ongoing studies to better understand the correlation between vessel speeds and restrictions including (1) costs to industry and (2) the potential for strikes/near-misses.

Beginning to design a risk reduction equivalency pathway

Stakeholders across the board share interest in sparking innovation that can help lower the potential for NARW-vessel interactions. They differ, however, on whether it is ripe now to implement such measures in lieu of set speed restrictions. For some, the threat of NARW extinction is so serious that they do not believe BOEM should consider any risk reduction equivalency pathways. We believe there is potential for common ground on this issue but the presence of core disagreements across stakeholder groups will require BOEM to take a cautious and strategic approach. To lay the groundwork for a constructive dialogue on this issue, we recommend BOEM consider the following:

- Initiate a dialogue across stakeholder groups to start designing a potential future pathway for a credible risk reduction alternative to blanket 10-knot speed restrictions.

  Given that stakeholders do not currently have shared or even clear understandings on what such a pathway would look like, we would recommend that any stakeholder dialogue cover at a minimum the following topics:

  - identifying potential tools, technologies, and measures that could be used in combination to lower the risk of NARW interactions and vessel strikes,
  - articulating metrics and criteria for gauging risk-reduction equivalency, and
  - outlining a transparent, consistent, and credible process for assessing, vetting, verifying, and approving any innovative, risk-reduction equivalencies.
- This dialogue would need to be decoupled from any set implementation timeline given stakeholders' current sharp disagreements regarding the ripeness of putting such an equivalency into practice at this time.

Our discussions with stakeholders suggest additional possible next steps. These include the following:

- Conducting a workshop with BSSE, NOAA, and USCG and interested stakeholders to identify and resolve confusing or inconsistent requirements related to monitoring, mitigation and reporting details across various guidance documents and develop clear, precise, streamlined, and consistent reporting requirements for all NARW sightings and vessel-NARW interactions.

- Convening a workshop(s) or series of discussions with stakeholders to better understand and address training qualifications, standards, and concerns related to using PSOs and non-federal observers on offshore wind vessels.

Demonstrating the value of stakeholder feedback

Finally, we strongly recommend BOEM put in place practices that demonstrate concretely to stakeholders how their feedback informs its NARW strategy. Stakeholders are uncertain how past input has informed BOEM's decisions. This is a source of frustration and leaves some reluctant to devote significant time to future dialogues without greater certainty that their advice has been considered.

APPENDIX A FEDERAL PARTNERS DISCUSSION SYNTHESIS

The Bureau of Ocean Energy Management (BOEM) asked the non-profit Consensus Building Institute (CBI) to hold roundtable discussions in spring 2022 with a range of stakeholders to get their perspectives on a future BOEM North Atlantic Right Whale (NARW) Strategy to reduce vessel strike risks in offshore wind industry activities. This summary reflects two sets of discussions with interested federal partners[4]. A total of three individuals participated in the two calls representing two organizations (see table below).

Meeting Date	Number of Participants	Agencies Represented
3/25/2022	3	Marine Mammal Commission, U.S. Coast Guard
4/12/2022	2	Marine Mammal Commission, U.S. Coast Guard

Below is a summary of key discussion feedback. Comments are not attributed to specific individuals or organizations to encourage candor; the perspectives below represent individual views and are not intended to represent formal agency positions. Discussion participants were invited to review and provide comment on this summary to ensure it accurately represents the views shared with CBI.

High-Level Takeaways

- Recent vessel strike reduction measures have the potential to improve both awareness and effectiveness by extending speed restrictions to certain high-risk wind energy areas, but the effectiveness of such measures is difficult to judge at this point and is seen to be hampered by inconsistencies, confusing guidance, and poor coordination across federal agencies.
- Moving forward, an effective NARW vessel strike strategy should incorporate data-driven go-slow provisions, consistent and predictable time and area requirements for all operators, clear and streamlined guidance regarding monitoring and reporting requirements, and a harmonized approach across federal agency actions.
- Innovative monitoring techniques are to be encouraged (e.g., passive acoustics, infrared technology to increase whale detection capabilities in low visibility conditions, etc.), but those techniques should be implemented with a clear plan for evaluating their effectiveness.

Perspectives on Current Strategy

Federal partners see several benefits to having a strategy in place to reduce vessel strikes of NARWs (and other large whales) in OSW areas. For example, speed limitations in high-risk areas for whales protect both whales and mariners from injuries caused by vessel strikes. The federal partners who participated in the discussions are tentatively encouraged by BOEM's

[4] NOAA Fisheries was invited to participate in interviews, but opted instead to engage directly with BOEM.

efforts to extend vessel speed restrictions to all vessels, regardless of size, in recently approved Construction and Operations Plans (COPs). This is based in part on NOAA Fisheries' 2020 vessel strike report[5], which indicated that a majority of the regulated vessels operating in seasonal management areas are in compliance with mandatory speed restrictions and that speed restrictions appear to be at least somewhat effective at reducing vessel strikes of whales. However, their speed limit effectiveness in other geographic areas and times (such as Slow Zones) has yet to be determined.

Workshop participants' views on the benefits of BOEM's current vessel strike strategy were tempered, however, by several key considerations:

- ***Limited overlap to date between NARWs and OSW activity:*** It is difficult to assess the effectiveness of BOEM's vessel strike strategy given the type and amount of OSW activity to date (limited traffic and generally slower moving geophysical survey vessels) and the inherently small number of right whales along the Atlantic Coast.
- ***Required measures confusing for ocean users:*** Mitigation measures outlined in various BOEM documents are inconsistent, laborious, and difficult to understand. For example, the distinctions between Slow Zones and Dynamic Management Areas (DMAs) are not clearly communicated to - or well understood by - mariners (e.g., mandatory v. voluntary, vessel class affected, triggered by whale presence or not., etc.). Similarly, vessel speed restrictions in the Vineyard Wind COP are overly complicated by exceptions for different vessels, the use of passive acoustics, etc. This confusion, they said, is likely to negatively affect both understanding and implementation. Additionally, BOEM policies for OSW activities may be accessible to federal partners, but not all federal agencies are necessarily aware of or intimately familiar with them. Requirements that BOEM puts in place for its regulated vessels may be communicated by BOEM and enforced by BSEE but other agencies may not be wholly familiar with those requirements or other BOEM policies when there is limited (or any) nexus by another agencies to comply, fund, oversee, approve, or enforce another agency's policies.

[5] https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-vessel-strikes-north-atlantic-right-whales#right-whale-speed-rule-assessment

- ***Whale protection measures are not aligned:*** Various whale protection rules are not aligned, serving as a source of confusion for both mariners and enforcement and undermining compliance. Notably, many of the whale protection measures in BOEM documents, such as vessel speed restrictions, differ in dates and areas from those specified in NMFS's 2008 vessel speed rule. For example, the speed restrictions required for Vineyard Wind apply from November 1 to May 14, whereas the NMFS rule for the same area specifies that vessels are to slow down from November 1 to April 30. A second example is the U.S. Coast Guard's NARW mandatory ship reporting system, which is not geographically or temporarily aligned with NOAA's vessel strike rule nor BOEM's vessel strike strategy. A better approach, they said, would be to align management areas/measures across federal agencies for logical consistency and implement joint regulations (admittedly tough to do, they noted).

- ***Unclear and inconsistent reporting requirements:*** Current reporting requirements (e.g., immediately reporting sightings and interactions to BOEM, BSEE, Coast Guard, NOAA, stranding network, etc.) are confusing and counterproductive and need streamlining. They noted, for example, the uncertain effectiveness of *Whale Alert* as a whale avoidance application as it is not on a platform that meshes wholly with the U.S. Coast Guard's operating picture, there is a time lag in sharing information with protected species observers on wind energy vessels; and there is inconsistent contribution and confidence of species data from different regions.
- ***Enforcement:*** Whale avoidance measures outlined in NMFS ESA Section 7 consultations or MMPA incidental take authorizations are not within scope for the U.S. Coast Guard to enforce due to their limited authority to enforce BOEM policies on OSW vessels and non-regulatory measures. A comprehensive and effective vessel strike framework must consider the challenges of on-water enforcement of BOEM policy and non-regulatory provisions. It should also include a clear explanation of requirements for different types of vessels operating in various locations and times, as well as associated monitoring and enforcement measures.

Perspectives on Future Strategy

Federal partners who participated in the discussions would prefer a vessel strike strategy that is straight-forward, consistent, time-predictable (for planning purposes), adaptive, and consistent between federal agencies. Such an approach facilitates outreach efforts and industry uptake and improves compliance, enforcement, and ultimately effectiveness. Below is a summary of what they see as the key elements of an effective BOEM OSW vessel strike strategy.

- ***Go slow.*** No element is seen as more important than putting in place "go slow" speed rules already proven to provide critical protections to right whales. Such precautionary measures should encompass all high-risk areas and time periods, given right whales' wide distribution, shifting ocean use patterns, and a ramping up of OSW vessel traffic. While they did not offer specific speed restrictions beyond what are currently in NMFS's 2008 vessel speed rule (i.e., 10 knots), they did suggest that speed restrictions take into account visibility, location, and seasonality (with respect to NARW distribution), and should apply to all vessels regardless of function. Additionally, better data are needed to confirm the linkage between speeds and vessel strike risk, thereby ensuring the strategy has a clear grounding in conservation goals. The inclusion of only those vessels 65 feet or larger in NOAA's ship strike rule seems inadequate given recent lethal whale interactions with smaller-sized vessels.

- ***Mandatory Speed Zones are generally preferable.*** Participating federal partners suggested a preference for Seasonal Management Areas (SMAs) (mandatory speed zones) over voluntary speed zones such as Dynamic Management Areas (DMAs) and Slow Zones for two main reasons: (1) they offer a more predictable implementation scenario (and are thus easier to plan for and execute); and (2) they decrease the oversight burden and effort needed to track, declare, and monitor. They noted the importance that SMA boundaries be regularly revised to be responsive to high-risk areas which change over time. To the extent there is benefit to continuing DMAs (within NOAA regulations), they called for them to be mandatory (to increase compliance and effectiveness) and reviewed/refined through an ongoing and data-driven process (e.g., harden repetitive DMAs into SMAs).
- ***Industry needs clearer guidance on monitoring and reporting needs.*** Both federal partners see a need for BOEM to better guide industry on how vessels and crews should monitor and respond to whale sightings and whale/vessel interactions. The current lack of clear guidance effectively shifts the burden from OSW operators and BOEM to the U.S. Coast Guard and NOAA Fisheries. Specific suggestions included the following:
    - Provide greater detail on what is needed in terms of frequency and efficacy of sightings methods (aerial surveys, passive acoustics, etc.).
    - Sharpen and streamline guidance from BOEM on expected captain and crew response upon right whale sightings or whale interactions (e.g., reporting timeframe and hierarchy, communication with other vessels, etc.). Ideally, BOEM should direct vessels to report any sighting or interaction first to the appropriate regional stranding network coordinator in case immediate action needs to be taken. The regional stranding network will need to be made aware of its role in OSW reporting requirements so it is not burdened with an unexpected responsibility.
    - Require all vessel crew to take NOAA Fisheries' Marine Mammal Health and Stranding Response Program first responder training.
    - Provide detailed data on vessel speed and whale response if an interaction occurs.

- ***Harmonize across agencies.*** The two federal partners emphasized the critical need to harmonize actions across federal agencies responsible for permitting, regulating, and enforcing offshore wind activity. Specific suggestions included the following:

    - BOEM should, as much as practicable, mesh its requirements with existing regulatory approaches (i.e., the NMFS vessel strike rule). To the extent BOEM puts forward different requirements or exemptions outside of regulation (e.g., Section 7 consultations or incidental take authorizations), BOEM must rely on its own authorities (not U.S. Coast Guard's) to spearhead enforcement.
    - BOEM should take steps to implement measures that draw on its expertise and resources rather than placing the monitoring burden onto its federal partners (e.g., relying on shoreside compliance monitoring and remote vessel speed tracking rather than at-sea BSEE enforcement actions).
    - BOEM/BSEE should develop strategies to use PSO documentation of non-compliance to track trends among offshore wind developers.

- ***Foster innovation with care.*** Federal partners support incentives for innovation and thinking outside the box to develop new, reliable methods for monitoring right whale presence, such as passive acoustics or infrared (night vision) technologies. However, there is not yet sufficient certainty to rely solely on technologies such as these or passive acoustics. Rather, they suggest developing a risk-assessment approach (probability analysis, modeling, data, tolerable uncertainty) to advance agreed-upon trusted alternatives.
- ***Make the strategy as widely applicable as possible*** to all mariners. Federal partners urged BOEM and other federal agencies to develop an integrated regulatory approach that treats OSW equitably with other users (i.e., avoiding the "we're regulating X vessel community because we can" approach).

Federal partners also offered other observations and suggestions including:

- BOEM will need to consider and resolve the challenge of properly tracking smaller crew transport vessels that may be working for OSW one week and supporting a different industry at other times. This has implications both for assessing rule effectiveness and enforcement of required mitigation measures.
- It is important to have realistic models to evaluate the true costs of mitigation measures as this will serve as a needed check on inevitable industry pushback for any recommended new measures.
- It is important to recognize and account for the fact that slow-down rules have secondary benefits to both human (mariner) safety and other marine species (e.g., humpbacks, sea turtles, etc.).
- BOEM conducts, supports, and sponsors a great deal of science, but it needs to take more ownership of the real-time data collection, analysis, communication, and oversight of operations it permits.

- In addition to being mindful of preventing whale/vessel strikes and minimizing the severity of any interactions, BOEM should also consider assisting in the response to whale strikes through seeking stranding response authority from NOAA Fisheries. BOEM-permitted vessels and BSEE are potential "force multipliers" for on-water responses by the Marine Mammal Health and Stranding Response Network to help identify severity and cause of death of whale/vessel interactions.

Process and Information Needs

Workshop participants offered several specific suggestions for moving forward with BOEM's consideration of a NARW vessel strike avoidance strategy. Most critically, they recommended that BOEM and NOAA Fisheries develop a process to harmonize vessel strike measures within and across their respective agencies, encompassing authorities from lease sales to speed rules. Additionally, they recommended that any evolving strategy be vetted widely so it can be tested against and responsive to on-the-water experiences and constraints. (Disseminating the results of this interview process, they said, would be a good first step.) Such an approach, they said, will also increase buy-in ("people have to care to comply"). They also recommended that BOEM engage more broadly in NARW-related activities led by other federal agencies (e.g., having a BOEM representative attend NARW Southeast implementation team meetings, as in the Northeast, participating in the Stranding Response Program as a federal Co-investigator, etc.).

Regarding information needs, participants identified the following two information needs:

- Assess the additional costs (and benefits) to industry of implementing speed restriction measures in the OSW areas.[6]
- Develop and disseminate information on both strikes and near-misses (and associated speeds and outcomes) for all vessel types and then use this data to evaluate the linkage between vessel speeds and vessel strike risk.

[6] NMFS conducted an economic assessment of the cost to industry of complying with the vessel speed rule in its 2020 report: (*North Atlantic Right Whale (Eubalaena glacialis) Vessel Speed Rule Assessment*). https://media.fisheries.noaa.gov/2021-01/FINAL_NARW_Vessel_Speed_Rule_Report_Jun_2020.pdf?null

APPENDIX B ENVIRONMENTAL AND NON-GOVERNMENTAL ORGANIZATIONS DISCUSSION SYSNTHESIS

The Bureau of Ocean Energy Management (BOEM) asked the non-profit Consensus Building Institute (CBI) to hold roundtable discussions in spring 2022 with a range of stakeholders to get their perspectives on a future BOEM North Atlantic Right Whale (NARW) Strategy to reduce vessel strike risks in offshore wind industry activities. This summary reflects two sets of discussions with interested environmental non-governmental organizations. A total of 13 individuals participated in the two calls representing 9 organizations (see table below).

Meeting Date	Number of Participants	Organizations Represented
3/10/2022	12	Animal Welfare Institute, Center for Biological Diversity, Conservation Law Foundation, Defenders of Wildlife, National Wildlife Fund, Natural Resources Defense Council, Inc., Oceana, Southern Environmental Law Center, Whale & Dolphin Conservation USA
4/15/2022	12	Animal Welfare Institute, Conservation Law Foundation, Defenders of Wildlife, National Wildlife Fund, Natural Resources Defense Council, Inc., Oceana, Southern Environmental Law Center, Whale & Dolphin Conservation USA

Below is a summary of key discussion feedback. Comments are not attributed to specific individuals or organizations to encourage candor. Discussion participants were invited to review and provide comment on this summary to ensure it accurately represents the views shared with CBI.

High-Level Takeaways

- The environmental non-governmental representatives who participated emphasized that right whales are in peril and believe the current vessel strike avoidance measures applicable to permitted or contemplated for OSW activities are falling short.
- Any new activity on the water, they said, introduces new risks to right whales and, as a result, stringent and proven measures such as 10-knot vessel speed restrictions and other measures are needed to reduce the increased risk to as close to zero as possible.
- Alternative measures may have a place at some point in the future, but for now, known precautionary approaches must take precedence.
- ENGOs believe BOEM has its own responsibility to act and must put in place the necessary measures to protect right whales from OSW-related activities irrespective of any updated NOAA Fisheries' vessel strike rule.

Perspectives on Current Strategy

ENGOs voiced strong concerns that current measures to prevent vessel strikes are ineffective, thereby increasing risk on a species that cannot afford further human-caused mortalities.

While multiple concerns were cited, eNGOs' greatest apprehensions centered on what they describe as a core failing to date: insufficient speed restrictions. Ten-knot speed restrictions for seasonal and dynamically managed areas (SMAs and DMAs) called for in recently approved Construction and Operations Plans (COPs), while welcome, are inadequately protective for the following primary reasons: limited in timing (seasonal rather than year-round); limited in vessel size; and crew transport vessels are exempted. This is problematic given the potential for right whales to show up anywhere in the development corridor and be at risk from a strike with a vessel of any size. These failings are particularly troubling, they said, given that speed restrictions are the only demonstrably effective mitigation measure for minimizing vessel strike risk.

In addition to the insufficient speed restrictions, eNGO representatives identified several other limitations of the current strategy. These include:

- ***Effectiveness of visual and acoustic monitoring:*** The current approach has an unwarranted reliance on visual and acoustic monitoring (as opposed to more stringent and extensive speed restrictions). NARW can be hard to spot even for a well-trained observer operating under ideal weather conditions (citing a recent Whale and Dolphin Conservation video linked here). Additionally, experience in the fishing industry suggests protected species observers may be susceptible to harassment, coercion, and bribery. Such pressures would likely be even greater on a crew member. Acoustic monitoring also poses challenges as whales are not always vocalizing and near real-time vessel slowdowns based on acoustic monitoring are, at this time, unproven for this industry.
- ***BOEM/NOAA Coordination:*** The current approach lacks integration and coordination between BOEM and NOAA Fisheries to limit risk tied to offshore wind energy exploration and development (although groups are hopeful that coordination between the agencies is being improved through the development of the NARW strategy). ENGOs noted, in particular, BOEM's failure to fully embrace its responsibility (as required by law) to ensure offshore wind exploration and development is implemented in a manner sufficiently protective of right whales and other imperiled species.
- ***Risks to NARWs and OSW industry:*** ENGOs are concerned that interactions due to insufficient requirements could have negative impacts on both right whales (greater mortality) and the offshore wind industry (chilling effect on much-needed development) if a strike were to occur. One eNGO representative said, "The species can't bear the risk of a mistake. Industry can't bear the risk of failure."
- ***Slower speeds - the only proven solution:*** In the current approach, ENGOs say BOEM is failing to address and incorporate the best available data for the only mitigation measure – vessel speed restrictions – known to work to minimize lethal collisions with right whales. ENGOs cited as an example flaws in the informal programmatic consultation

between NOAA and BOEM on recent site surveys and assessments (not based on best available data, incorrect information on best management practices).

- ***Voluntary measures:*** There is an overreliance on voluntary measures that have proven to be ineffective in the general 2008 vessel speed rule context (voluntary compliance with DMAs has been shown to be very low[7]).
- ***Insufficient penalties*:** To date, enforcement actions and penalties for violations of the 2008 vessel speed rule have been too minimal to be a significant motivator to increase compliance.

One positive aspect of current measures: required AIS tracking of vessels requirements is important in understanding compliance and facilitating enforcement and accountability.

Perspectives on Future BOEM NARW Strategy

ENGOs articulated a clear and overarching driver for any future strategy: Given the status of the species and best available science, any strategy must be legally sound and grounded in what they see as the one proven and effective mitigation measure: 10-knot speed restrictions applied to any vessel, regardless of size, associated with and actively working on an offshore wind project. Moreover, such measures must be accompanied by compliance monitoring and reporting transparency to enable effective oversight. Collectively, these measures are seen as important to putting in place a zero-risk tolerance for right whales and acting as a gold standard for other ocean users. More specifics related to these overarching recommendations focused on the following:

- ***Apply 10-knot restrictions to all project vessels.*** Environmental representatives support a 10-knot speed restriction for all project vessels – regardless of size, function or time of year – in any future BOEM NARW strategy. Exemptions based on season, vessel size (e.g., less than 65 feet) or function (e.g., crew transport vessels) represent an unacceptable elevated risk to right whales, are not justified by any enhanced mitigation, and should not be included in a strategy. ENGO participants noted that lower speeds also provide safety benefits to crew in the event of a strike. Additionally, lower vessel speeds put industry in the strongest position possible to defend itself against any potential death/injury of a right whale.
- ***No support for replacing speed restrictions with alternate risk avoidance measures at this time.*** ENGO representatives do not support near-term inclusion in the strategy of a risk avoidance equivalency (e.g., swapping out a 10-knot speed restriction for other risk-reduction measures) given the current limitations of passive acoustics and visual monitoring and the precarious status of North Atlantic right whales. Acoustic detection, for example, is inadequate because whales are not calling at all times (e.g., feeding

[7] https://usa.oceana.org/wp-content/uploads/sites/4/4046/narw-21-0002_narw_ship_speed_compliance_report_m1_digital_singlepages_doi_web.pdf

whales and mother-calf pairs do not vocalize as frequently). Effectiveness of visual observation methods are limited by visibility, sea state, observer skill level and whale behavior. The strategy must instead start with the most stringent measures in place (i.e., 10-knot speed restrictions) and only shift to other approaches once these alternative measures are tested and confirmed. Said one participant: "We cannot afford to make the right whale our guinea pig."

- ***Dynamic Management Areas as fallback.*** ENGO representatives generally DMAs as a fallback or complementary measure if NOAA-established SMAs lack adequate protections (e.g., broadly applicable 10-knot speed restrictions). DMAs can offer needed flexibility (a strong complement to the certainty of SMAs), as well as increase captain and crew awareness. It is essential, however, that DMAs (1) be mandatory and effectively enforced given data showing poor compliance with current voluntary measures under 2008 vessel speed rule; (2) apply to all vessels below 65 feet; and (3) apply to two whale sightings and not three.
- ***BOEM obligation to act.*** ENGOs stressed that BOEM is responsible for the projects occurring in a manner that is protective of endangered species. If NOAA does not promulgate the strong vessel speed requirements seen by eNGOs as needed through the forthcoming amendment to the 2008 vessel speed rule, they said, then BOEM is still obligated to act.
- ***Use best available science.*** Any future strategy should be grounded in the best available science for setting vessel speed restrictions and other mitigation measures. Any departure from this standard must be based on proven, peer-reviewed science.
- ***Include transit areas.*** Given the potential to encounter a whale outside of the immediate project location, transit areas between the harbor and project areas need to be included in the strategy. Similarly, restrictions should be linked to all project vessels and not just vessels in a particular "project area". They also should apply to all vessels regardless of ownership (directly owned or contracted).
- ***Strengthen compliance monitoring and enforcement.*** Monitoring and enforcement of speed restrictions and other measures needs to be strengthened. New restrictions should be included in the terms of the lease – and not just included in the COP – as low or *de minimis* monetary penalties alone are not a strong enough motivator. Several participants suggested penalties for repeat non-compliance should escalate from substantial monetary consequences to potential stop-work orders (not unlike provisions for onshore construction sites). In short, they said, penalties must be significant enough that they can't just be baked into the cost of doing business.
- ***New standards for new users.*** Some groups believe new users in ocean space (offshore wind) should be managed more closely and serve as an example for other industries. "This isn't about being fair and treating all users the same. These are new users, and we need to set a new standard." Other groups believe all ocean users should be required to meet the same protective standard.

Additionally, the eNGO representatives offered other recommendations and perspectives for a future strategy. These included the following:

- Set and establish speed restrictions and other associated measures in advance – ideally during the leasing process – to help industry stakeholders and vessel captains plan ahead. As one participant said: "If we don't do it right from the start, we'll build in flawed economics and that will embed industry opposition to prudent and necessary measures."
- Mandated training for vessel crew members, especially the captain and any mate who may take the wheel as they often see whales before observers.
- Trained vessel crew, while helpful and encouraged, should not be considered a substitute for a NOAA approved dedicated PSO on board. If trained crew are relied on, strong government oversight is essential.
- Require AIS active on all vessels owned, contracted, or used by/for the wind development.
- Safety of the crew is paramount and reasonable deviations from the rule in emergency situations are expected and should be logged.

Process and Information Needs

While ENGOs see benefit to ongoing conversations with the relevant federal agencies, scientists, developers and other stakeholders, they see little immediate need for elaborate stakeholder-agency discussions to shape a BOEM NARW strategy to protect NARW from vessel strike by instituting vessel speed limits. "We don't want to see an assertion of 'we don't know enough to take action now,'" said one participant. Better, they said, for the federal agencies to actively manage development using current best available science to offer maximum protection to right whales.

Regarding immediate information needs, their message was simple: "Additional research is not needed to take actions that are proven to be protective."

APPENDIX C RESEARCHER AND SCIENTIFIC COMMUNITY DISCUSSION SYNTHESIS

The Bureau of Ocean Energy Management (BOEM) asked the non-profit Consensus Building Institute (CBI) to hold roundtable discussions in spring 2022 with a range of stakeholders to get their perspectives on a future BOEM North Atlantic Right Whale (NARW) Strategy to reduce vessel strike risks in offshore wind industry activities. This summary reflects two sets of discussions with interested members of the NARW researcher and scientist community. A total of 10 individuals participated in the three calls representing 6 organizations (see table below).

Meeting Date	Number of Participants	Institutions and Organizations Represented
3/10/2022	7	New England Aquarium, University of North Carolina Wilmington, Wildlife Conservation Society, Woods Hole Oceanographic Institution
4/7/2022	10	Center for Coastal Studies, New England Aquarium, University of Rhode Island, University of North Carolina Wilmington, Wildlife Conservation Society, Woods Hole Oceanographic Institution
4/14/2022	9	Center for Coastal Studies, New England Aquarium, University of Rhode Island, Wildlife Conservation Society, Woods Hole Oceanographic Institution

Below is a summary of key discussion feedback. Comments are not attributed to specific individuals or organizations to encourage candor. Discussion participants were invited to review and provide comment on this summary to ensure it accurately represents the views shared with CBI.

High-Level Takeaways

- Precipitous declines in NARW population status warrant aggressive, proven, and mandatory measures as a new industrial user (offshore wind) – gears up to increase its activity along the Atlantic Coast.
- Current measures – most notably, speed restrictions that are seen as too limited in scope – need to be expanded to provide maximum protection to right whales. A precautionary approach, coupled with effective compliance monitoring and enforcement, is essential and needs to be driven into the leasing process.
- Researchers strongly prefer seasonal to dynamic management areas, and they are not supportive of replacing speed restrictions with other risk avoidance measures at this time.

Perspectives on Current Strategy

Workshop participants uniformly see current vessel strike avoidance measures as insufficient to protect highly endangered right whales from a new, ocean-based industrial activity being established offshore. NARW scientists cited the following as their greatest concerns:

- ***Current strategy fails to address all risks from all vessels:*** Current vessel strike rule fails to address risk tied to offshore wind (OSW)-related vessels under 65 feet. Additionally, it ignores risks tied to other ocean users such as fishing and recreational boaters.
- ***Current rules are temporally and spatially insufficient:*** Measures currently in place are seen as insufficient in time and geographic scope given the potential for right whales to be encountered across wide areas along the Atlantic coast at any time. This risk is further exacerbated by climate change impacts that some of the researchers suggest is making it harder to predict right whale distribution.
- ***NARW status is too critical to introduce new risks:*** The current approach perpetuates what they see as several "myths": that technology is available to fix the problem; that there is a magic cut-off in vessel size risk (i.e., 65 feet); that offshore wind should be treated differently. The right whale's fragile status, they said, leaves no room for anything other than measures certain to eliminate risk as much as possible while still allowing for ocean-based activity. Reliable technological fixes may be ready at some point in the future, but they are not far enough along now to serve as a core element in a future BOEM strategy.
- ***Compliance with voluntary measures:*** Studies have made clear that voluntary measures are ineffective, with compliance shown to be spotty. Right whale protections need to be linked to mandatory measures.

Perspectives on Future BOEM NARW Strategy

NARW researchers and scientists share a core view that an effective strategy must be grounded in simplicity, parity, clarity, certainty and low-risk, proven measures. The right whale's precarious status (critical and declining precipitously) does not leave room for experimentation or chance. While there is an interest in improving new risk-reduction technologies, all those who participated in the roundtable caution against putting premature faith in such fixes, and they emphasize that any flexibility in approach must be coupled with strong, reliable oversight.

Neither the lack of documented interactions to-date with OSW vessels nor OSW's risk relative to other ocean users with documented interactions (e.g., shipping) obviates the need for a strong precautionary approach nor does it warrant treating OSW differently than any other users. A broad range of vessel sizes (33 feet to over 900 feet) have been involved in strikes of NARW. New users (offshore wind) in ocean space mean new risk, and reactive management measures are very limited once steel is in the water. Said one participant: "We can't afford more deaths. It doesn't matter that they (OSW) haven't caused the injuries up until now."

Specific suggestions related to a future strategy centered around a few key elements:

- ***10-knot speed restrictions are key.*** BOEM's future strategy should require a default 10-knot speed restriction – applied to all OSW project vessels regardless of size, location and activity – if NOAA's new ship strike rule does not fully encompass BOEM's wind energy areas. Such a rule is essential, they said, if the offshore wind industry is to grow

in a manner that minimizes increased risk to right whales. They recognize the magnitude of such a burdensome measure, but they see no other proven alternative at this time.

- ***Limited opportunity for dynamic management.*** Researchers see mixed potential to loosen static 10-knot restrictions based on seasonality and location (e.g., a mix of seasonal and dynamic management areas) under a future strategy. Those most open to the idea suggested such flexibility might be possible in certain places and times (based on peer-reviewed data on probability of right whale presence), but would need a clearly defined approach that is grounded in clear and consistent processes with metrics applied equally across all projects. For example, in areas and times of year when right whales are sporadic (e.g., the mid-Atlantic in the summer), the strategy could allow for multiple "tiers of awareness" (e.g., acoustic buoys, aerial surveys, observers, etc.) to relax 10-knot restrictions. Such an approach would require clear standards with a transparent and credible oversight process and not be allowed to default to a customized approach negotiated between each developer and BOEM. Others were more cautious, suggesting such an approach – even if limited in scope – puts unwarranted faith in detection technologies that are not reliable enough to support the increased risk to NARW. Several participants recommended no flexibility at this time in the 10-knot restriction north of Cape Hatteras given the potential for right whales to be present at any time.
- ***No support for replacing speed restrictions with alternate risk avoidance measures at this time.*** There was no support among the researcher community for a risk avoidance equivalency approach that would provide developers a broad pathway to swapping out 10-knot restrictions for other mitigation measures. Such an approach, they said, puts undue faith in unproven technologies and ignores the limited effectiveness of acoustic and visual sightings in different situations (e.g., limited vocalizing by mother-calf pairs, weather and sea state, etc.).[8] Any technologies for mitigation must be evaluated in a comprehensive fashion with input from NARW scientists.
- ***Incentivize risk reduction in the lease sale process.*** Researchers called for a strategy that incentivizes right whale risk reduction measures into the leasing process. Points could be awarded to proposals deemed to be more precautionary. Researchers see several advantages to such an approach: (1) it incentivizes more precautionary practices that go above and beyond any regulatory measures in place; (2) it forces developers to budget for vessel speed reduction and other measures right from the start (thereby, researchers said, reducing both uncertainty and resistance to more precautionary approaches), and (3) it ties enforcement of the measures to the lease itself, which they see as a much more powerful enforcement mechanism (e.g., the potential for stop-work orders for violating lease terms rather than less impactful financial penalties).

[8] Recently in Cape Cod Bay, for example, 45-60 individual right whales have entered the Bay but the acoustic record shows just a modest amount of vocalization and a recent spotter plane detected no animals. Similarly, a Stellwagen research boat hit a right whale despite the presence of four spotters.

- ***Upgrade speed restriction enforcement.*** BOEM should draw on existing technologies (e.g., VMS) to automate compliance monitoring and enforcement of a 10-knot speed restriction. Initially, such monitoring should trigger additional outreach to improve captain awareness of the speed restrictions, but repeat infractions should trigger graduated financial penalties, significant negative publicity, and potentially stop-work orders. Any effort to step up enforcement will need to be accompanied by increased resources to U.S. Coast Guard so the obligation does not devolve to non-profits, researchers and others.
- ***Avoid voluntary measures.*** It is essential that any BOEM NARW strategy be grounded in mandatory restrictions. Data shows voluntary measures do not work and cannot be relied on to deliver meaningful risk reduction.

Other points raised during the roundtables included the following:

- One participant stressed that we are now managing NARWs at the individual whale level and we cannot afford fall back to population level affects strategies now.
- At least one participant recommended including a trigger for even more precautionary measures if there is an OSW-related fatality. They did not offer specifics regarding any possible additional precautionary measures.
- Several researchers made the point that dynamic alternatives to static 10-knot speed restrictions may prove to be more costly in the long run than operating at lower speeds, particularly given the need to keep such measures in place for the life of the project. It was suggested that BOEM might seek feedback from oil and gas developers' experience (e.g., Excelerate Energy's acoustic buoys in Massachusetts Bay[9]).
- At least one participant recommended BOEM incorporate compensatory mitigation into the strategy (e.g., incentivizing fishermen to get out of riskier-to-NARW activity and work instead on OSW). "We can't keep adding threats without taking away some," they said. However, most researchers did not see great merit in building incentives into a strategy given the cost and limited reach and effectiveness. Better, they said, to use comparative data to publicize developers adopting more precautionary measures.

Process and Information Needs

For the most part, NARW scientists think bold action – e.g., BOEM aggressively managing risk like regulators in Canada – is a greater need than continued stakeholder dialogues that tend to have a "groundhog day" feel about them. That said, several roundtable participants said they are committed to staying engaged. (As one participant put it: If they're not at the table, they can't make the case for why their admittedly controversial recommendation of a 10-knot restriction coastwide is necessary. Another noted the positive impacts of recent scientific input on BOEM's decision to deny permit for oil and gas seismic surveys in the Atlantic) But, they added, their commitment to engage will greatly increase if they see a "definitive and practical" demonstration

[9] https://www.eomoffshore.com/passive-accoustic-moorings

that their feedback is impacting BOEM's thinking and approach (e.g., implementing coastwide speed restrictions in OSW areas, BOEM incorporating feedback into lease stipulations, engagement by BOEM leadership, etc.).

Researchers saw no need for new data to justify their call for bold action. As they see it, the key pieces informing much-needed OSW vessel strike reduction measures are well documented: NARW's precarious status; NARW presence up and down the Eastern Seaboard; risk reduction benefits of 10-knot speed limits. They did, however, recommend BOEM and NOAA put more effort into helping them and other stakeholders understand how NOAA and BOEM regulatory efforts in this space coordinate / work together, noting that the potential for confusion is high and could be very counterproductive.

APPENDIX D OFFSHORE WIND DEVELOPER SYNTHESIS

The Bureau of Ocean Energy Management (BOEM) asked the non-profit Consensus Building Institute (CBI) to hold roundtable discussions in spring 2022 with a range of stakeholders to get their perspectives on a future BOEM North Atlantic Right Whale (NARW) Strategy to reduce vessel strike risks in offshore wind industry activities. This summary reflects two sets of discussions with interested offshore wind (OSW) energy developers. A total of 16 individuals participated in the two calls representing 7 companies and/or projects (see table below).

Meeting Date	Number of Participants	OSW Developers Represented
3/7/22	13	Vineyard Wind, Mayflower Wind, Ørsted, Dominion Energy, Atlantic Shores Offshore Wind, Avangrid, US Wind
4/8/22	10	Equinor, Mayflower Wind, Ørsted, Vineyard Wind, Avangrid, Dominion Energy

Below is a summary of key discussion feedback. Comments are not attributed to specific individuals or organizations to encourage candor. Discussion participants were invited to review and provide comment on this summary to ensure it accurately represents the views shared with CBI.

High-Level Takeaways

- Industry strongly supports protective measures to avoid vessel strikes with the highly endangered North Atlantic Right Whale species, but a future BOEM-driven NARW strategy should be grounded in an accurate assessment of the risks tied to offshore wind activity.
- Blanket 10-knot speed restrictions are overly blunt and fail to account for differing risk profiles based on each project's unique characteristics (location, activity, operations, mitigation measures, etc.). Moreover, the speed restrictions lack parity with restrictions placed on other activities like shipping and fishing which OSW developers emphasized present inherently greater risks to right whales than OSW activities.
- An effective future BOEM NARW strategy should be structured to be adaptive and tap into wind energy developers' creativity while still providing essential protections to right whales.
- Creating opportunities for risk avoidance equivalencies to blanket speed restrictions is essential.

Perspectives on Current Strategy

While acknowledging the need for strong and effective rules to protect right whales, offshore wind energy developers voiced strong concerns with the current approach to limiting vessel strikes. Their chief concerns centered around the two points below.

- ***BOEM restrictions are overburdensome and not relative of risks posed to NARWs by OSW vessels compared to other vessels:*** The current approach lacks a relative risk

perspective, putting unnecessarily burdensome constraints on offshore wind (with no known vessel strikes) while leaving other ocean users with a history of strikes (fishing vessels, recreational boaters, shipping) with lesser operational constraints. This approach, they said, lacks both logic and equity and leaves right whales vulnerable.

- ***Current rules are too blunt and lack flexibility and nuance:*** The current approach paints with too broad a brush and does not account for important project differences (e.g., locations, operations, mitigation measures) that limit risks to right whales from offshore wind activity nor does it allow for adaptive approaches. Current speed constraints, for example, are seen as too blunt. The 10-knot restrictions included in the recent Construction and Operations Plans (COPs) approved by BOEM are based on the experiences of other industries with different vessels, practices, policies, and risk reduction measures in place. Such rules ignore the effective monitoring strategies (both acoustic and visual) wind energy developers are putting in place to minimize risks to right whales, as well as the efforts made to have dedicated and trained crew monitoring for right whale activity. At the same time, such rules have unintended implications for project viability and potentially crew and right whale safety (given that lower vessel speeds likely translate into more vessels on the water).

Additional concerns cited include the following:

- Increased requirements for dedicated watch (protected species observers or PSOs) year-round are neither viable nor sustainable. Vessels doing near-shore work typically are not large enough to accommodate PSOs and the cost of year-round PSOs is prohibitive. Moreover, such a requirement is not on par with conditions placed on the wider marine industry. More important, they said, is to have crew on dedicated watch, aware and properly trained (e.g., clear guidance on procedures and actions to take when a right whale is spotted).
- Acoustic monitoring that OSW operators have put in place to support its mitigation measures and support research is being used against the industry (e.g., regulators use acoustic proof of whales drawn from OSW monitoring to make the case for more stringent regulations of OSW). These actions are frustrating and counterproductive given the precautionary measures developers take once right whale presence is known.
- While there is significant high-quality science and research available on right whale risks and mitigation needs, developers said that public commenters frequently misinterpret the data, and then regulators – under pressure from stakeholders – apply onerous requirements that ignore the difference in relative risk identified in the research. Too often, interpretation of OSW impacts is driven by passion rather than science.
- BOEM's strategy in recent COPs (e.g., 10 knot speed restriction rule) is problematic as it sends an erroneous message to the broader public that the OSW industry poses a high risk to right whales and its mitigation efforts to-date are insufficient.
- The lack of coordination between NOAA Fisheries and BOEM regarding a vessel strike strategy is troubling and creates the potential for legal challenges from third parties in the future. They encouraged greater coordination with NOAA Fisheries (Science Centers, Office of Protected Resources, Take Reduction Teams, Regional Offices, etc.)

Perspectives on Future BOEM NARW Strategy

Most broadly, OSW developers called for a strategy that creates opportunities for industry to put in place measures that provide effective and much needed protections for right whales while enabling industry to meet renewable energy needs. Over the course of the two conversations, industry representatives called for a strategy that balances the need for consistency and predictability with the necessity for thoughtful flexibility to account for project differences and spark reliable and tested innovations. Parity across marine users is also important. Participants' perspectives and suggestions related to a future strategy centered around the key elements summarized below.

- ***Realistic risk assessments are key.*** Any risk reduction strategy needs to be based on a realistic assessment of the risks tied to offshore wind development and not layer in inflexible requirements due to past and ongoing vessel strikes resulting from other industries (shipping, fishing, etc.) with very different operations, practices, and risk profiles. At the same time, there needs to be a recognition that the OSW industry, no matter how effective, cannot reduce its risk to zero.
- ***Incorporate an adaptive approach.*** A future BOEM strategy should include an adaptive approach that incentivizes projects to find innovative methods for reducing risks to right whales to agreed-upon benchmarks. OSW developers strongly endorsed the idea of risk avoidance equivalencies that would give developers flexibility in how they ensure they do not exceed specified risk-related targets. Though participants did not have specific suggestions for what such risk avoidance equivalencies might look like, they called for an approach that sets clear targets (for example, a vessel strike interaction risk comparable with a 10-knot speed restriction) and then lets each operator manage to that risk (e.g., adhering to the stipulated speed restriction or opting instead to use a combination of methods deemed comparable – additional surveys, passive acoustic monitoring, dedicated observers, thermal cameras, etc.). Such an approach would provide the needed protections to right whales, while encouraging industry to be innovative and pioneer cost-effective approaches. As one participant put it: "The key is not to close the door…Let us put forward alternatives."
- ***Preference for Dynamic Management Areas.*** Developers generally support a greater reliance on Dynamic Management Areas (DMAs) – or their equivalents i.e. slow zones – rather than Seasonal Management Areas (SMAs) in a future strategy as DMAs allow for more operational flexibility and are seen as more realistic at a time when climate change-driven impacts are making it difficult to predict right whale location and timing. If a strategy is to retain SMAs, it is essential for a future BOEM strategy to have off-ramps / risk avoidance equivalencies that enable developers to minimize 10-knot slowdowns.
- ***Holistically assess requirements.*** A future strategy needs to realistically acknowledge the range of requirements imposed on developers – for example, 10-knot speed restrictions, seasonal and temporary constraints, fishing and avian adaptations, shoreside constraints, etc. – and allow for a flexible approach that provides needed benefits to right whales, while putting a realistic burden on OSW developers. "We don't have unlimited pockets," said one participant.

Wind energy developers offered other perspectives on a potential strategy, including:

- Developers disagreed with assertions that incorporating speed restrictions into the leasing process would make it easier for industry to manage such limitations. For one thing, they said, O&M agreements with states puts pressure on overall project costs. Additionally, industry might adapt to speed restrictions by putting in place measures (e.g., use of helicopters) that bring a different set of risks. Finally, speed restrictions translate into longer transit times which could, in turn, have negative impacts on worker mental and physical health. "It's not just about cost," said one developer.
- Participants noted that blanket speed restrictions on all vessels (regardless of size) are highly problematic and could lead to negative impacts for both NARW (e.g., more vessels on the water to compensate for the slower speeds) and socio-economic objectives (e.g., speed restrictions could lead to weekly shifts on the water which might limit the available worker pool).
- OSW developers strongly urged that NOAA and BOEM coordinate their respective vessel risk reduction efforts to diminish the potential for inconsistent approaches that then create both operational and potential legal difficulties. Similarly, they encouraged BOEM to shift its thinking from "what's the least effect they can get to" to "what's the biggest project we can support while meeting regulatory requirements."
- Regulatory agencies need to be strategic in vessel observer requirements (training, reporting needs, etc.), making sure to match requirements to risk. If a vessel isn't engaged in higher risk activities, the requirements need to be reined in to be realistic – comparable to other vessels, mindful of boat space, etc.
- Developers supported including some voluntary measures as part of a future strategy. Examples cited included: (1) support for the fishing industry's transition to ropeless; and (2) using the industry's growing passive acoustic monitoring network to make positive contributions to conservation benefits in places such as Cape Cod Bay.

Process and Information Needs

OSW developers have interest in follow-up conversations with regulatory agencies to develop a comprehensive, integrated, target-driven approach. "It'd be helpful to get a signal from NMFS on what it needs to achieve," said one participant.

As to information needs, developers identified the following as steps that would be helpful for BOEM to support as it continues developing its strategy:

- Create more opportunities (larger forums, technical workshops, etc.) for industry to share its risk reduction efforts with diverse stakeholders
- Undertake a relative-risk evaluation: looking not just at COPs but also implementation and considering not only risk to NARW, but also to mariner safety, economic goals, etc. Specific pieces to look at included:

    - Data on vessel strikes to identify which vessels, industries, activities pose the primary risks; strike-level data on whale activities, areas, and seasons; climate change considerations, etc.
    - Projections of how much OSW vessel activity there will be compared to vessels from other industries
- Provide more data to understand the correlation between strikes (NARW) and previous entanglements
- Catalog the extent and benefit of OSW measures
- Continue Ørsted's work to develop an ecosystem-based predictive behavioral model for NARWs.

U.S. Department of the Interior (DOI)

The DOI protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

Bureau of Ocean Energy Management (BOEM)

BOEM's mission is to manage development of U.S. Outer Continental Shelf energy and mineral resources in an environmentally and economically responsible way.