



August 18, 2014

Maureen Bornholdt  
Renewable Energy Program Manager  
Office of Renewable Energy  
Bureau of Ocean Energy Management  
381 Elden Street  
Herndon, Virginia 20170

**Re: Atlantic Wind Lease Sale 4 (ATLW4) Commercial Leasing for Wind Power on the Outer Continental Shelf Offshore Massachusetts – Proposed Sale Notice [Docket No: BOEM-2014-0034; MMAA104000]**

Dear Ms. Bornholdt:

The Conservation Law Foundation (CLF), Natural Resources Defense Council (NRDC) and the National Wildlife Federation (NWF) respectfully submit these comments to the Bureau of Ocean Energy Management (BOEM) on the Proposed Sale Notice for the sale of commercial renewable energy leases on the Outer Continental Shelf offshore Massachusetts, 79 Fed. Reg. 117 (June 18, 2014). BOEM proposes to offer for sale four leases: Lease OCS–A 0500, Lease OCS– A 0501, Lease OCS–A 0502, and Lease OCS–A 0503. BOEM proposes to use a multiple-factor auction format for the lease sale. On June 4, 2014 BOEM issued a Revised EA and Finding of No Significant Impact for installation of met towers and site assessment activities to be conducted in the Massachusetts Wind Energy Area (MA WEA).

Our organizations strongly support the advancement of responsibly developed offshore wind power and applaud BOEM for moving the leasing process forward in Massachusetts and along the Atlantic coast. As discussed in these comments, we respectfully request that additional mitigation measures for the protection of North Atlantic right whales be included as mandatory lease terms applicable to site assessment and characterization activities for offshore wind development in the MA WEA.

#### Introduction

CLF is a New England based nonprofit and a member-supported organization with offices in Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. CLF promotes clean, renewable and efficient energy production in New England and has an unparalleled record of advocacy on behalf of the marine environment in the Northwest Atlantic. NRDC is an international non-profit environmental advocacy organization with 1.3 million members and supporters and with offices in New York, Washington D.C., Chicago, San Francisco, Los Angeles, and Beijing. Curbing global warming pollution, building a clean energy future, and protecting ocean resources are NRDC's top institutional priorities. NWF is America's largest conservation organization inspiring Americans to protect wildlife for our

children's future. NWF has a long history of working to conserve wildlife and wild places, recognizes that climate change poses an enormous threat to both the human environment and the earth's biologic diversity, and strongly supports the responsible development of offshore wind power as a key climate solution.

Our organizations are deeply committed to the development of clean, renewable wind energy as expeditiously as possible and in an environmentally responsible manner. We support the development of offshore wind for its environmental and economic benefits, including access to a secure and sustainable energy source and mitigating the effects of climate change. The availability of offshore wind energy will facilitate our country's move away from outdated fossil fuels that have caused devastating and ongoing damage to the environment and to public health. We are supportive of the Department of the Interior's "Smart from the Start" initiative, which seeks to facilitate the expedited and prudent development of offshore wind power.

We also believe that offshore wind power can and **should be developed in an environmentally responsible manner that will encourage additional development while protecting vulnerable species.** We urge BOEM to consider these comments, which set forth mitigation measures applicable to site assessment and characterization activities for the protection of North Atlantic right whales.

**The North Atlantic right whale is a critically endangered species with an estimated global population of roughly 500 individual animals.** Given its endangered status, additional precautionary measures are necessary for its protection. The proposed mitigation measures outlined below will reduce the threat to North Atlantic right whales by limiting activities during periods when they are particularly vulnerable and imposing additional protective measures during other precautionary periods.

These proposed mitigation measures are **conceptually similar** to those contained in a voluntary agreement<sup>1</sup> concerning the Rhode Island/Massachusetts Wind Energy Area (RI/MA WEA) among CLF, NRDC, NWF, and Deepwater Wind, the sole leaseholder for the area. **We have engaged and anticipate future discussions with offshore wind companies regarding appropriate mitigation measures for the MA WEA, but a comparable agreement does not yet exist for this** area. Nonetheless, in response to BOEM's Proposed Sale Notice, the organizations propose mitigation measures for activities conducted in the MA WEA.

Our organizations emphasize the imperative of establishing seasonal restrictions on sub-bottom profiling and pile-driving for meteorological tower installation, as set forth below. **We also believe it is necessary to expand mitigation efforts during a precautionary period to protect the North Atlantic right whale.** This precautionary period includes the front end of May for pile-driving and sub-bottom profiling, but **forthcoming North Atlantic right whale data and surveying reports on the MA WEA may suggest alternative dates and perhaps even specific areas of concern, based on patterns of spatial distribution, that should require greater vigilance.** Finally, while acknowledging BOEM's intent to address pile-driving mitigation measures during the site assessment plan (SAP) approval process, we have incorporated mitigation measures applicable to pile-driving activities associated with meteorological tower installation into our comments.

---

<sup>1</sup> A final copy of the RI/MA WEA agreement was mailed to Maureen Bornholdt, BOEM Renewable Energy Program Manager, on May 7, 2014.

## Proposed mitigation measures

1. **Seasonal Restrictions:** Our organizations support the seasonal prohibition on meteorological tower installation set forth in the Revised EA and propose a prohibition on sub-bottom profiling from January 1 through April 30. The lease should provide for review and possible modification of these dates upon release of the third year of survey data for the Massachusetts WEA, to best reflect occurrence of the North Atlantic right whale.
2. **Precautionary Period Restrictions:** Our organizations believe pile-driving and sub-bottom profiling activities may be permitted during precautionary periods (May 1 – 14 for both activities) provided additional safeguards are taken.
  - We recommend that all developers should complete a site-specific risk assessment that includes an assessment of the potential for right whale activity during the survey period; an acoustic assessment of the specific equipment to be used; and a site specific Marine Mammal Harassment Avoidance Plan.
  - We believe that if pile-driving occurs in early May (or later in May if forthcoming data support a broader precautionary period), the developer should use noise attenuation and source level reduction technology to reduce sound during meteorological tower construction. The developer should use the best commercially available technology, such as bubble curtains, cushion blocks, temporary noise attenuation pile design, vibratory pile drivers and/or press-in pile drivers, in order to reduce the pile driver source levels and horizontal propagation, unless such technology is prohibitively expensive for the project. Further, the developer should employ engineering expertise to determine the best available technology for each pile-driving site (or this may be done programmatically for a series of sites) and the engineering analysis and cost analysis should be made available.
  - Finally, the developer should engage in additional monitoring efforts and operate in ways that increase right whale visibility, as described under sections 5 and 6.
3. **Vessel Speed Restriction:** Our organizations agree with the proposed 10 knot speed limit restriction from November 1 - July 31, but believe it should apply to all vessels of any length associated with site assessment surveys and site characterization activities, including survey vessels as well as support vessels, operating in and transiting to and from the Wind Energy Area.
4. **Exclusion Zone:** Our organizations recommend the establishment of a minimum 500 m (1640 ft) radius exclusion zone for all marine mammals and sea turtles around the sub-bottom profiler, with an exception for dolphins that, in the determination of the visual observers, are approaching the vessel at a speed and vector that indicates voluntary approach to bow-ride. The presumed 500 meter exclusion zone should be confirmed before sub-bottom profiling begins by using the in-field sound source validation process described in the Revised EA, and the exclusion zone should be enlarged for the duration of site characterization activity if the 160 dB isopleth extends beyond 500 meters from the source. Results should be reported to BOEM and NMFS.
5. **Real-time Monitoring:**
  - Sub-bottom profiling: Our organizations recommend that lessees provide a minimum of 2 trained, experienced Marine Mammal Observers (MMOs) (1 on/1 off) at each sub-bottom profiling site to effectively maintain a steady visual watch during the course of all sub-

bottom profiling activities. During the precautionary period, four trained, experienced MMOs (2 on/2 off) should be provided if the source vessel is of sufficient size to accommodate the two additional personnel. Observers employed during the precautionary period should have at least 1 year of experience as professional marine mammal observers or equivalent academic experience.

- **Pile-driving:** Our organizations recommend that lessees should provide a minimum of 4 trained, experienced Marine Mammal Observers (MMOs) (2 on/2 off with each observer covering 180 degrees from bow to stern) at each pile-driving site to effectively maintain a steady visual watch during the course of all pile-driving activity and to provide for effective monitoring in all directions around the sound source. Additionally, observers employed during the precautionary period shall have at least 1 year of experience as professional marine mammal observers or equivalent academic experience.
- **Additional Monitoring:** Our organizations propose that lessees should conduct either aerial monitoring or real-time passive acoustic monitoring sufficient to detect aggregations of foraging right whales during pile-driving in the precautionary period. Our organizations, taking into account the potential for impacts to right whales at substantial distances as well as the practical limitations in aerial monitoring, believe it is appropriate for this monitoring effort to cover a 20 kilometer radius around the pile-driving source.

#### 6. **Visibility Requirements:**

- **Sub-bottom profiling:** Our organizations acknowledge that BOEM has included a provision addressing visibility during sub-bottom profiling in the proposed leases, Addendum C, Section 4.3.2. While we support the suspension of sub-bottom profiling activities when lighting or weather conditions prevents effective visual monitoring, we are concerned about the lack of guidance surrounding alternative monitoring plans and alternative monitoring methodologies in Section 4.3.3 that will enable the developer to conduct sub-bottom profiling at night or when visual observation is otherwise impaired. Our organizations believe there is a lack of available data demonstrating that alternative monitoring can be conducted in a manner that will allow for effective right whale monitoring in low-visibility conditions. Until such time as relevant data becomes available, we recommend caution in the agency's application of this provision, particularly during the precautionary period, when right whales are more likely to be present in the area.
- **Pile-driving:** Our organizations again recognize that BOEM will address mitigation measures applicable to pile-driving activities during the SAP process. However, we believe that pile-driving should not take place at night during the precautionary period. We propose that developers should not start driving a pile during the precautionary period unless, under normal circumstances, completion of the pile can be achieved during daylight hours. In the event that a developer begins driving a pile with the plan to achieve full penetration during daylight hours, but a situation arises that jeopardizes pile penetration if the drive is not completed, the developer may continue driving the pile into the nighttime hours to protect human health, the environment, or completion of the drive. Finally, if the exclusion zone is obscured by fog, no pile-driving activity, including ramp-up, should be initiated until the exclusion zone is visible for 30 minutes.

7. **Adaptive Management Review:** The parties believe that the survey efforts underway in the MA WEA should continue for a total of at least three years. This data should be reviewed annually to ensure that required protective measures reflect the latest scientific data on North Atlantic right

whales in this area, along with any other available data, including sightings and information on new technologies or practices that have become available.

### BOEM's adoption of mitigation measures

The Bureau of Ocean Management (BOEM) prepared an Environmental Assessment (EA) analyzing the environmental impacts of lease issuances and site assessment plan approvals in the MA WEA. The revised EA issued in June 2014 included several leasing and site assessment alternatives as well as standard operating conditions, some of which provided protections for the North Atlantic right whale. BOEM determined that no significant impacts on the environment were expected to occur as a result of any of the considered alternatives and issued a finding of no significant impact (FONSI).<sup>2</sup> The mitigation measures proposed by our organizations and their corresponding effects were not specifically addressed in the EA. However, BOEM's adoption of the proposed mitigation measures is consistent with relevant laws and policies for the reasons discussed below.

1. The environmental impacts of the proposed mitigation measures are within the range of impacts analyzed in the EA.

The environmental impacts of our proposed mitigation measures are within the range of impacts considered in the EA (see Attachment 1). Our proposed measures are similar to but more restrictive than the standard operating conditions set forth in Appendix B. The measures are also similar to but less restrictive than the area exclusion in Alternative B – certain aspects of the proposed mitigation measures are more restrictive than Alternative B, but overall Alternative B is more protective because it completely excludes lease issuances and approvals of site assessment activities in a specific area of the WEA where right whales are present or expected to be present during the spring and winter. Accordingly, the environmental impacts of the proposed mitigation measures are also similar to but less than those considered for Alternative A (full leasing scenario, including Appendix B standard operating conditions) and similar to but overall greater than those considered for Alternative B (area exclusion to protect right whales). Since BOEM's evaluation of the impacts of Alternatives A and B encompasses the impacts of the proposed mitigation measures, BOEM's EA adequately addresses the environmental impacts of the proposed measures. Further, based on BOEM's determination that neither Alternative A nor Alternative B would lead to a significant environmental impact, it is clear that the proposed mitigation measures will have no significant impact on the environment.

2. BOEM may adopt mitigation measures that are consistent with, but not specifically included as, mitigation measures in an EA.

BOEM may adopt mitigation measures that are not specifically included in its EA. In the context of mitigation measures in an EIS, the Supreme Court has explained that mitigation measures must only be "discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated" and that a fully developed mitigation plan is not necessary.<sup>3</sup> The Ninth Circuit applied this reasoning to mitigation measures in EAs and concluded that "the agency is not required to develop a complete mitigation plan detailing the precise nature of the mitigation measures," though "the proposed

---

<sup>2</sup> BOEM, "Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts, Revised Environmental Assessment," June 2014 (<http://www.boem.gov/Revised-MA-EA-2014/>)

<sup>3</sup> Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 352-53 (1989).

mitigation measures must be developed to a reasonable degree.”<sup>4</sup> BOEM was not required to include a full mitigation plan in its EA and is not limited to adopting the mitigation measures included in its EA. Further, BOEM does not have to analyze in an EA the specific mitigation measures that it ultimately adopts. **It is sufficient that the environmental impacts of those measures fall within the range of impacts considered in the EA.** Since the environmental impacts of these proposed mitigation measures fall within the range of impacts analyzed in the Massachusetts EA, BOEM may include these proposed mitigation measures as lease terms in its proposed lease.

3. **In compliance with the National Environmental Policy Act (NEPA), the public has had and will have a reasonable opportunity to comment on the proposed mitigation measures.**

The public has had and will have a **reasonable opportunity** to comment on the proposed mitigation measures. Since the measures are variants of the standard operating conditions contained in Appendix B and requirements detailed in Alternative B, the public had notice of the types of measures that BOEM proposed implementing in its EA. On November 2, 2012, BOEM announced the availability of the EA for public review and comment.<sup>5</sup> BOEM provided an opportunity for the public to submit comments on the draft EA, which enabled public input on proposed actions and anticipated environmental impacts. The public comments<sup>6</sup> served to inform BOEM of the public’s attitude toward Appendix B and Alternative B. Further, the public currently has an opportunity to comment on measures that it believes suitable or unsuitable for inclusion in the proposed lease. **BOEM has provided notice that it will consider comments received on the Proposed Sale Notice, including proposed lease provisions, in developing final lease terms and conditions.**<sup>7</sup> The public therefore has an opportunity to submit comments concerning the adoption of similar mitigation measures, including those set forth in this comment.

4. BOEM may modify a proposal in response to public comments consistent with the Administrative Procedure Act (APA).

BOEM may include the proposed mitigation measures as conditions in the proposed lease consistent with the Administrative Procedure Act (APA). In this instance, BOEM’s adoption of the proposed mitigation measures would comply with applicable law. Pursuant to regulation, BOEM must publish a Proposed Sale Notice in which it “request[s] public comment” on such items as “[p]roposed and final lease provisions and conditions, including, but not limited to...[s]ite-specific lease stipulations.”<sup>8</sup> BOEM must then “consider all public comments received in developing the final lease sale terms and conditions.”<sup>9</sup> BOEM has complied with the public notice requirement by stating in its Proposed Sale Notice that it “invites comments” on information including **“proposed lease provisions and conditions”**<sup>10</sup> and that **“after considering comments on the PSN and these proposed provisions, BOEM will publish final lease terms and conditions in a [Final Sale Notice].”**<sup>11</sup> It is worth noting that during agency

---

<sup>4</sup> *Nat'l Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 734 (9th Cir. 2001) (internal quotations omitted), abrogated on unrelated grounds by *Monsanto Co. v. Geertson Seed Farms*, 130 S. Ct. 2743 (2010).

<sup>5</sup> See 77 Fed. Reg. 66185 (November 2, 2012),

[http://www.boem.gov/uploadedFiles/BOEM/Renewable\\_Energy\\_Program/State\\_Activities/FR77\\_213.pdf](http://www.boem.gov/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/FR77_213.pdf)

<sup>6</sup> See public comments submitted at [regulations.gov](http://www.regulations.gov) on Docket No. BOEM-2012-0086,

<http://www.regulations.gov/#!docketBrowser;rpp=25;po=0;dct=PS;D=BOEM-2012-0086>.

<sup>7</sup> See 79 Fed. Reg. 34771 (June 18, 2014), <http://www.boem.gov/79-FR-34771/>

<sup>8</sup> 30 CFR § 585.216(b)(5).

<sup>9</sup> 30 CFR § 585.216.

<sup>10</sup> 79 Fed. Reg. at 34771.

<sup>11</sup> 79 Fed. Reg. at 34771.

rulemaking, an agency's final rule may deviate from a proposed rule so long as "the final rule is a 'logical outgrowth' of the rulemaking proceeding."<sup>12</sup> A final rule is considered a "logical outgrowth" of a proposed rule if "the agency's notice...fairly apprise[d] interested persons of the subjects and issues [of the rulemaking]."<sup>13</sup> "It is, of course, elementary that a final rule need not be identical to the original proposed rule. The whole rationale of notice and comment rests on the expectation that the final rules will be somewhat different—and improved—from the rules originally proposed by the agency."<sup>14</sup> Here, it is certainly the case that BOEM's Proposed Sale Notice fairly apprises the public that it invites comments on the proposed lease and that it will consider such comments in the course of developing final lease terms and conditions. BOEM may include these proposed mitigation measures as modified lease provisions in its final lease in compliance with applicable law and the APA.

### Conclusion

For the reasons discussed above, the undersigned organizations respectfully request that these proposed mitigation measures be included in any commercial renewable energy lease on the Outer Continental Shelf offshore Massachusetts. The proposed measures provide necessary protections for North Atlantic right whales. The impacts of these proposed mitigation measures are within the range of impacts considered in BOEM's Revised EA and FONSI for the MA WEA. BOEM has the authority to adopt these measures in the Final Sale Notice and should do so. Thank you for considering these comments and please feel free to contact us if would you like further information.

Respectfully submitted,



Michael Jasny – mjasny@nrdc.org  
Director, Marine Mammal Project  
**Natural Resources Defense Council**  
Sarah Chasis – schasis@nrdc.org  
Kit Kennedy – kkennedy@nrdc.org



Catherine Bowes - bowes@nwf.org  
Senior Manager, Climate & Energy Program  
**National Wildlife Federation**



Tricia Jedele – tjedele@clf.org  
Vice President and Director, Rhode Island Advocacy Center  
**Conservation Law Foundation**  
Priscilla Brooks – pbrooks@clf.org

---

<sup>12</sup> United Steelworkers of Am., AFL-CIO-CLC v. Marshall, 647 F.2d 1189, 1221 (D.C. Cir. 1980) (quoting South Terminal Corp. v. EPA, 504 F.2d 646, 659 (1st Cir. 1974)).

<sup>13</sup> Nat'l Black Media Coal. v. FCC, 791 F.2d 1016, 1022 (2d Cir. 1986) (internal quotation marks omitted).

<sup>14</sup> Am. Fed'n of Labor & Cong. of Indus. Organizations v. Donovan, 757 F.2d 330, 338 (D.C. Cir. 1985) (internal quotation marks omitted).

## ATTACHMENT 1

### **Comparison of Right Whale Protections in BOEM's EA and Proposed Mitigation Measures**

Following is a comparison of our proposed mitigation measures ("the Proposal") to both Appendix B and Alternative B (which is the most protective alternative for the North Atlantic right whale considered in the Revised EA).

#### ***Sub-bottom profiling***

In the general, the sub-bottom profiling recommendations in this Proposal adhere to a seasonal restriction and a precautionary period (the front end of May with the potential to expand to additional time frames, including late December, in response to forthcoming right whale data and surveying reports). For sub-bottom profiling occurring during the precautionary period, the lessee should complete a site-specific risk assessment that includes an assessment of the potential for North Atlantic right whale activity, an acoustic assessment of the specific equipment to be used, and a site-specific Marine Mammal Harassment Avoidance Plan. Sub-bottom profiling during the seasonal restriction (January 1 - April 30) should be prohibited.

As compared to Appendix B, the Proposal's additional recommendations during the precautionary periods and suggested prohibition on sub-bottom profiling during the seasonal restriction **are more restrictive** than Appendix B sub-bottom profiling requirements. Therefore, the Proposal's sub-bottom profiling measures would have **less of an environmental impact** than the measures in Appendix B. Alternative B prohibits lease issuance and site assessment activities in portions of the WEA where North Atlantic right whales occur or are predicted to occur. As compared to Alternative B, the Proposal (which allows sub-bottom profiling in portions of the WEA where right whales occur or are predicted to occur) would have a greater environmental impact.

#### ***Pile-driving for meteorological tower installation***

**In** the Proposal, general pile-driving recommendations adhere to a seasonal restriction and a precautionary period (the front end of May with the potential to expand to additional time frames in response to forthcoming right whale data and surveying reports). For pile-driving during the precautionary period, **the developer should complete a site-specific risk assessment that includes an assessment of the potential for right whale activity**, an acoustic assessment of the specific equipment to be used, and **a site-specific Marine Mammal Harassment Avoidance Plan. Pile-driving during the seasonal restriction (November 1-April 30) should be prohibited.**

#### **Appendix B contains a seasonal restriction on pile-driving from November 1-April 30.**

As compared to Appendix B, the Proposal's recommendations during the precautionary period and prohibition on pile-driving during the seasonal restriction are more restrictive than Appendix B pile-driving requirements. Therefore, the Proposal's pile-driving measures **would have less of** an environmental impact than the measures in Appendix B. As compared to Alternative B, the Proposal (which allows pile-driving in portions of the WEA where North Atlantic right whales occur or are predicted to occur) would have a greater environmental impact.



## ATTACHMENT 1

### **Use of noise attenuation and source level reduction technology to reduce sound during meteorological tower construction**

The Proposal recommends the use of best commercially available technology during the precautionary period for pile-driving (the front end of May with the potential to expand to additional time frames in response to forthcoming right whale data and surveying reports). **Suggestions include bubble curtains, cushion blocks, temporary noise attenuation pile design, vibratory pile drivers, and/or press-in pile drivers, unless such technology is prohibitively expensive for the project.** The Proposal also proposes the use of engineering expertise to determine the best available technology for each pile-driving site (or programmatically for a series of sites).

Appendix B requires all construction equipment to comply as much as possible with applicable **EPA equipment noise standards.** Further, all construction equipment must include **noise control devices** that are at least as effective as those provided on the original equipment.

As compared to Appendix B, the Proposal's recommended use of best commercially available technology during pile-driving as well as engineering expertise to determine the best available technology for each pile-driving site during the precautionary period is more restrictive than Appendix B requirements. The Proposal's sound reduction measures would therefore have less of an environmental impact than the measures in Appendix B. As compared to Alternative B, the Proposal (which allows pile-driving in portions of the WEA where North Atlantic right whales occur or are predicted to occur) would have a greater environmental impact.

### **Vessel speed restrictions**

The Proposal recommends a 10 knot speed limit restriction on all vessels of any length associated with site assessment surveys and site characterization activities that are operating in and transitioning to and from the WEAs. Our organizations support extension of the restriction to from November 1 through July 31, as BOEM has provided in its Revised EA.

Appendix B requires that all vessels longer than 65 feet operating within the WEA during November 1-July 31 period must operate at speeds less than 10 knots. The Proposal differs from Appendix B in that Appendix B imposes a 10 knot speed restriction only on vessels over 65 feet long. By contrast, the Proposal recommends a 10 knot speed restriction on all vessels of any length associated with site assessment surveys and site characterization activities, including survey vessels as well as support vessels, operating in and transiting to and from the Wind Energy Area.

As compared to Appendix B, the Proposal recommends restrictions on a potentially larger number of vessels (all vessels, not just vessels over 65 feet). Therefore, the Proposal's vessel speed restrictions would have less of an environmental impact than Appendix B's vessel speed restrictions. As compared to Alternative B, the Proposal (which allows pile-driving and sub-bottom profiling in portions of the WEA where right whales occur or are predicted to occur) would have a greater environmental impact.

### **Exclusion zones**

The Proposal recommends that a minimum **500 meter radius exclusion zone be established around sub-bottom profilers.** **The exclusion zone should be confirmed** using sound source validation before sub-bottom profiling begins and the exclusion zone should be enlarged if the 160 dB isopleth extends

## ATTACHMENT 1

beyond 500 meters from the sound source. The exclusion zone of 500m applies at all times regardless of whether the vessel is underway or stationary.

Appendix B requires that in the case of the North Atlantic right whale, the minimum separation distance of 1,640 ft (500 m) is in effect only when the vessel is underway as described in the vessel-strike avoidance measures. Appendix B also requires a 200 meter default radius exclusion zone around stationary high resolution geophysical surveying vessels for North Atlantic right whales. In addition, Appendix B specifies that if the exclusion zone doesn't encompass the 180 dB Level B harassment radius calculated for the acoustic source having the highest source level, BOEM will consult with NMFS about additional requirements.

As compared to Appendix B, the Proposal recommends a more expansive 500 meter exclusion zone around sub-bottom profilers for North Atlantic right whales. The Proposal's exclusion zone requirements would therefore have less of an environmental impact than Appendix B. As compared to Alternative B, the Proposal (which allows sub-bottom profiling in portions of the WEA where right whales occur or are predicted to occur) would have a greater environmental impact.

### Monitoring

In the Proposal, additional monitoring effort is required during both a precautionary period (the front end of May with the potential to expand to additional time frames in response to forthcoming right whale data and surveying reports) and non-precautionary period. During the non-precautionary period, 2 trained, experienced Marine Mammal Observers (MMOs) should be present at each sub-bottom profiling site and at least 4 trained, experienced MMOs should be present at each pile-driving site. During the precautionary period, at least 2 NMFS-approved observers should be present at each sub-bottom profiling site and 4 trained, experienced MMOs should be provided if the source vessel is of sufficient size to accommodate the two additional personnel. At least 4 NMFS-approved observers should be present at each pile-driving site during the precautionary period. It is recommended that observers employed during the precautionary period should have at least 1 year of experience as professional marine mammal observers or equivalent academic experience.

Appendix B requires that the lessee ensure that the exclusion zone for all G&G surveys performed in support of plan (i.e., SAP and/or COP) submittal is monitored by a NMFS approved Protected Species Observer. The lessee must provide to the Lessor a list of observers and their résumés no later than forty-five (45) calendar days prior to the scheduled start of surveys performed in support of plan submittal. The Lessor will send the observer information to NMFS for approval. However, there are no details about required observer qualifications. During pile-driving, the 7 kilometer exclusion zone must be monitored by one observer based at or near the sound source and responsible for monitoring the 180 dB field of ensonification out to 1000m from the sound source and another observer located on a separate vessel navigating approximately 4-5 km around the pile hammer monitoring 360° out to 7 kilometers from the sound source. Appendix B mandates that if this method is insufficient to allow the observers to adequately monitor the exclusion zone such that any whale in the exclusion zone would be detected, additional observers must be used to ensure complete coverage of the exclusion zone.

As compared to Appendix B, the Proposal's recommendations that lessees provide a minimum of 2 trained, experienced Marine Mammal Observers (MMOs) (1 on/1 off) at each sub-bottom profiling site to effectively maintain a steady visual watch during the course of all sub-bottom profiling activities. During the precautionary period, four trained, experienced MMOs (2 on/2 off) should be provided if the

## ATTACHMENT 1

source vessel is of sufficient size to accommodate the two additional personnel. Observers employed during the precautionary period should have at least 1 year of experience as professional marine mammal observers or equivalent academic experience; and that for pile driving recommend that lessees should provide a minimum of 4 trained, experienced Marine Mammal Observers (MMOs) (2 on/2 off with each observer covering 180 degrees from bow to stern) at each pile-driving site to effectively maintain a steady visual watch during the course of all pile-driving activity and to provide for effective monitoring in all directions around the sound source; and that additionally, observers employed during the precautionary period shall have at least 1 year of experience as professional marine mammal observers or equivalent academic experience are greater than Appendix B requirements. The Proposal's recommendations for observer numbers and qualification during both the precautionary and non-precautionary periods are also more restrictive than Appendix B measures. Therefore, the Proposal's monitoring requirements would lead to less environmental impacts than Appendix B monitoring requirements. As compared to Alternative B, the Proposal (which allows pile-driving and sub-bottom profiling in portions of the WEA where right whales occur or are predicted to occur) would have a greater environmental impact.

### **Visibility**

The Proposal discusses visibility with respect to sub-bottom profiling and pile-driving during the yellow periods. For sub-bottom profiling, the organizations believe there is a lack of available data demonstrating that alternative monitoring (allowed pursuant to a provision in the proposed lease) can be conducted in a manner that will allow for effective right whale monitoring in low-visibility conditions. Until such time as relevant data becomes available, the organizations recommend caution in the agency's application of this provision, particularly during the precautionary period, when right whales are more likely to occur. The organizations also believe that pile driving should not take place at night during the precautionary period. The organizations propose that during the precautionary period, developers should not start driving a pile unless the pile can be completed during daylight hours under normal circumstances. In the event that a developer begins driving a pile with the plan to achieve full penetration during daylight hours, but a situation arises that jeopardizes pile penetration if the drive is not completed, the developer may continue driving the pile into the nighttime hours to protect human health, the environment, or completion of the drive. Finally, if the exclusion zone is obscured by fog, no pile-driving activity, including ramp-up, should be initiated until the exclusion zone is visible for 30 minutes.

Appendix B details visibility requirements for pile-driving. Pile-driving cannot be conducted at any time when lighting or weather conditions prevent monitoring of the exclusion zone. Pile-driving cannot begin during nighttime or when conditions prevent adequate monitoring of the exclusion zone unless an alternative BOEM- and NMFS-approved monitoring method (such as passive acoustic monitors) is employed. If a soft start is initiated before dark or the onset of inclement weather, pile-driving may continue but the driving of a new segment cannot begin until the exclusion zone can once again be monitored.

There are multiple differences between the Proposal and Appendix B.

- Although Section 4.3 in Addendum C of the proposed lease includes a provision detailing visibility requirements during G&G surveying, Appendix B does not impose visibility restrictions on sub-bottom profiling.
- The Proposal recommends a prohibition on nighttime pile-driving during the precautionary period. Appendix B prohibits pile-driving when lighting prevents monitoring of the exclusion

## ATTACHMENT 1

zone, which is not as restrictive as a complete ban on nighttime pile-driving during the precautionary period. Therefore, the environmental impacts of this recommendation would be greater than the impacts of the corresponding provision in Appendix B.

- The Proposal recommends a prohibition on the commencement of pile-driving during the precautionary period when completion cannot occur during daylight hours under normal conditions, although the Proposal allows for the completion of pile-driving after dark when certain jeopardizing circumstances arise. Appendix B is more lenient with respect to pile-driving activities during this period. Pile-driving may begin after dark if the lessee implements an alternative exclusion zone monitoring method that has been approved by BOEM and NMFS. Also, if a soft start has been initiated before dark, pile-driving of that segment may continue after dark. Therefore, the environmental impacts of this provision of Appendix B would be greater than the impacts of the corresponding recommendation in the Proposal.
- During the precautionary period, the Proposal suggests a prohibition on the initiation of pile-driving after an exclusion zone has been obscured by fog until the exclusion zone has been visible for at least 30 minutes. Appendix B only prohibits the commencement of pile-driving when weather conditions prevent monitoring of the exclusion zone. However, there is an exception for commencing pile-driving during fog if the lessee employs an approved monitoring method. There is also no required waiting period prior to initiating pile-driving under Appendix B. Therefore, the environmental impacts of this provision of Appendix B would be greater than the impacts of the corresponding provision in the Proposal.

As compared to Alternative B, the Proposal (which allows pile-driving and sub-bottom profiling in portions of the WEA where right whales occur or are predicted to occur) would have a greater environmental impact.

### *Additional monitoring for pile-driving*

The Proposal recommends that developers should conduct either aerial monitoring or real-time passive acoustic monitoring sufficient to detect aggregations of foraging right whales during pile-driving in the precautionary period. The organizations, taking into account the potential for impacts to right whales at substantial distances as well as the practical limitations in aerial monitoring, believe it is appropriate for this monitoring effort to cover a 20 kilometer radius around the pile-driving source.

Neither Appendix B nor Alternative B requires aerial surveying or passive acoustic monitoring during pile-driving.

As compared to Appendix B and Alternative B, the Proposal is more restrictive by recommending additional monitoring of a 20 kilometer radius during pile-driving activities. This provision of the Proposal's mitigation measures would very likely produce less of an environmental impact than Appendix B and Alternative B.