



# MARINE MAMMAL COMMISSION

18 October 2019

Ms. Jolie Harrison, Chief  
Permits and Conservation Division  
Office of Protected Resources  
National Marine Fisheries Service  
1315 East-West Highway  
Silver Spring, MD 20910-3225

Dear Ms. Harrison:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the application submitted by Skipjack Offshore Energy, LLC (Skipjack) under section 101(a)(5)(D) of the Marine Mammal Protection Act (the MMPA). Skipjack is seeking authorization to take small numbers of marine mammals by harassment incidental to conducting high-resolution geophysical (HRG) surveys offshore of Delaware and Maryland. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 27 September 2019 notice (84 Fed. Reg. 51118) requesting comments on its proposal to issue the authorization, subject to certain conditions.

## Background

Skipjack is proposing to conduct HRG surveys to characterize its wind energy lease area<sup>1</sup> and potential submarine cable routes to support the siting of potential future offshore wind projects. The surveys would occur year-round, during day and night, for a maximum of 200 total survey days and would involve the use of up to five vessels, with up to three operating concurrently. Sound-generating equipment proposed for use includes mobile and stationary sub-bottom profilers (SBPs)<sup>2</sup>, acoustic positioning systems, multiband echo sounders, and side-scan sonar.

NMFS preliminarily has determined that the proposed activities could cause Level B harassment of small numbers of 17 marine mammal species. It also anticipates that any impact on the affected species and stocks would be negligible. NMFS does not anticipate any take of marine mammals by death or serious injury and believes that the potential for disturbance will be at the least practicable level because of the proposed mitigation measures. The proposed mitigation, monitoring, and reporting measures include—

- using protected species observers to monitor the exclusion zones<sup>3</sup> and the Level B harassment zone<sup>4</sup> for 30 minutes before, during, and for 30 minutes after the HRG surveys;

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<sup>1</sup> Bureau of Ocean Energy Management (BOEM) Lease Area OCS-A 0519 (formerly lease OCS-A 0482).

<sup>2</sup> Including parametric, chirp, sparker, and boomer types.

<sup>3</sup> 500 m for North Atlantic right whales; 200 m for fin, sei, and sperm whales; and 100 m for all other marine mammals.

<sup>4</sup> A 500-m monitoring zone also would be observed and all marine mammals within that zone recorded.

- using standard pre-clearance, ramp-up, delay, and shut-down procedures<sup>5</sup>;
- using shut-down procedures if a species for which authorization has not been granted, or a species for which authorization has been granted but the authorized number of takes are met, approaches or is observed within the Level B harassment zone;
- using night-vision equipment (night-vision goggles and/or infrared technology) to detect marine mammals during nighttime operations<sup>6</sup>;
- using standard vessel strike avoidance procedures and monitoring the NMFS North Atlantic right whale reporting systems during all survey activities;
- reporting injured and dead marine mammals to the Office of Protected Resources and the New England/Mid-Atlantic Stranding Coordinator<sup>7</sup> using NMFS's phased approach and suspending activities, if appropriate; and
- submitting a comprehensive draft and final report to NMFS.

### **Inputs for Level A harassment zones**

Neither the *Federal Register* notice nor Skipjack's application provided the various inputs that were used to estimate the extents of the Level A harassment zones for the sound sources, beyond the GeoSource 800 J sparker (Table 6 of the *Federal Register* notice). Given that ranges of values were provided for the operating frequency, pulse duration, and repetition rate for the various sources, it is impossible to know which of those inputs NMFS used to inform the Level A harassment zones. Although the zones for the remaining sources are expected to be less than 5 m, they cannot be substantiated from the information provided. The Commission recommends that NMFS include the relevant inputs (i.e., source level, weighting factor adjustment, source velocity, pulse duration, and repetition rate) used to estimate the Level A harassment zones for all sources proposed for use by the various action proponents in each of its *Federal Register* notices.

### **Appropriateness of Level B harassment zones**

NMFS has proposed to implement a 141-m Level B harassment zone for all sound sources<sup>8</sup> based on source levels from Crocker and Fratantonio (2016)<sup>9</sup>. However, measurements of the same sources conducted off the east coast of the United States<sup>10</sup> during previous HRG surveys indicate that the Level B harassment zones are in fact quite small, 27 m or less (see Gardline 2016 as one example). NMFS chose to use Level B harassment zones based on Crocker and Fratantonio (2016) in lieu of the in-situ measurements, because it believes that some measurements may not be

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<sup>5</sup> A 200-m buffer zone would be monitored for all marine mammals except North Atlantic right whales as well. Shut-down procedures would not be required to be implemented for small delphinids (*Delphinus* spp., *Tursiops* spp., *Stenella* spp., and *Lagenorhynchus* spp.) that approach the source vessel or towed survey equipment.

<sup>6</sup> NMFS included this standard measure in the proposed authorization but not in the *Federal Register* notice.

<sup>7</sup> Identified as the Northeast/Mid-Atlantic Stranding Coordinator in the proposed authorization.

<sup>8</sup> The 141-m zone, based on two types of sparkers, is the largest Level B harassment zone of all the various sound sources Skipjack proposed to use (see Table 5 in the *Federal Register* notice).

<sup>9</sup> As well as the beamwidth and lowest operating frequency, Sparkers are omni-directional and operate in the low-frequency range, so neither parameter had any effect on the estimated Level B harassment zones for those sources.

<sup>10</sup> In-situ measurements were obtained in water depths from 41 to 46 m, which are comparable to the 40-m water depth in which Skipjack plans to conduct its HRG surveys and that was used to estimate the Level B harassment zones.

accurate. In response to the Commission's [23 August 2019 letter](#)<sup>11</sup> recommending that NMFS use in-situ measurements, NMFS indicated that discrepancies between in-situ measurements and data from Crocker and Fratantonio (2016) likely were due to the beam pattern of many HRG sources<sup>12</sup> and the fact that measurements likely were measured outside the main lobe of the source (84 Fed. Reg. 52465). The Commission agrees that that issue may exist, but it does not exist for sparkers (and boomers<sup>13</sup>) that produce the largest Level B harassment zones<sup>14</sup> based on Crocker and Fratantonio (2016). Specifically, a sparker is an omni-directional source that does not exhibit main or side lobes—sound radiates equally in all directions from the source.

The issue with in-situ measurements from a sparker may have involved the hydrophone clipping the data in the nearfield, which was discussed by Gardline (2016). Gardline used a high-sound pressure level hydrophone to capture the nearfield measurements<sup>15</sup>. Figure D.1 in Gardline (2016)<sup>16</sup> shows that the measured sound levels at approximately 140 m are approximately 140 dB re 1  $\mu$ Pa or less and were not affected by hydrophone clipping. Thus, the Level B harassment zone of 141 m based on Crocker and Fratantonio (2016) is a vast overestimate.

The Commission understands that *some* in-situ measurements and resulting data may be inaccurate and therefore this is a cause of concern for NMFS. However, the Commission is not convinced that is the case for sparkers and believes a 50-m Level B harassment zone should be sufficient for all of the sound sources Skipjack proposes to use. As such, the Commission recommends that NMFS implement a 50-m Level B harassment zone for Skipjack's proposed survey. With regard to inaccuracies associated with in-situ measurements, the Commission believes that many of the issues<sup>17</sup> could be minimized with proper methodological requirements and signal processing standards. In response to a related recommendation from the Commission's [23 August 2019 letter](#), NMFS indicated that it is working collaboratively with BOEM to address the need for such standards (84 Fed. Reg. 52466). Although that effort has yet to be initiated, standards are needed in the near term, specifically for sparkers and boomers that generally produce the largest Level B harassment zones. To ensure that the data are collected and analyzed appropriately, the Commission recommends that NMFS and BOEM expedite efforts to develop and finalize, in the

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<sup>11</sup> For Ørsted Wind Power LLC's (Ørsted) proposed HRG survey activities.

<sup>12</sup> For the more narrow-beam sources, the estimated Level B harassment zones are 50 m or less based on Crocker and Fratantonio (2016; see Table 5 in the *Federal Register* notice). Many of the Level B harassment zones for the acoustic positioning systems are much less, than the 50 m reported in Table 5, even when based on source levels from Crocker and Fratantonio (2016). For example, the Level B harassment zone is 4 m for the Kongsberg HiPAP USBL receiver and 25 m for the Sonardyne Scout Pro Transponder. In-situ measurements of these types of sources yield much smaller Level B harassment zones than noted in Table 5. Furthermore, NMFS does not authorize taking by acoustic positioning systems. NMFS has considered acoustic positioning systems, chirps, multiband echo sounders, and side-scan sonar to be *de minimus* sources for which take need not be authorized (see as recent examples, Table 2 in 84 Fed. Reg. 37244 and Table 3.01-2 in the Navy's Final Environmental Impact Statement; [https://www.hstteis.com/portals/hstteis/files/hstteis\\_p3/feis/section/HSTT\\_FEIS\\_3.00\\_Introduction\\_October\\_2018.pdf](https://www.hstteis.com/portals/hstteis/files/hstteis_p3/feis/section/HSTT_FEIS_3.00_Introduction_October_2018.pdf)).

<sup>13</sup> With beamwidths of 80° or more, see Table 1 of the preamble as an example (84 Fed. Reg. 51121).

<sup>14</sup> For both Skipjack's and Ørsted's proposed activities.

<sup>15</sup> Which were used to inform the waveform and to validate the near-field digital signal processing scaling implemented by Gardline (2016; see section 2.3.2).

<sup>16</sup> Figure 3.3 in Gardline (2016) and Figure 1 in Gardline (2017) show similar results as well.

<sup>17</sup> Including contractors having difficulty obtaining adequate on-axis measurements of the signals and georeferencing the source relative to the hydrophone, the hydrophone clipping the sound, and signal processing issues.

next six months, methodological and signal processing standards for sparkers and boomers. Those standards should be used by action proponents that conduct HRG surveys and that either choose to conduct in-situ measurements to inform an authorization application or are required to conduct measurements to fulfill a lease condition set forth by BOEM.

Skipjack accounted for water depth, beamwidth, and frequency-related absorption in its estimation of Level B harassment zones based on source levels from Crocker and Fratantonio (2016). The Commission understands and appreciates that Skipjack's contractor has developed a simple spreadsheet that incorporates all of the relevant inputs<sup>18</sup>. That tool, in addition to NMFS's guidance on how to estimate propagation loss for HRG surveys, is essential for action proponents proposing to conduct HRG surveys. As such, the Commission recommends that NMFS provide to all action proponents a simple spreadsheet that includes beamwidth and source frequency when it provides them with its guidance regarding sound propagation modeling for HRG sources.

### **HRG surveys in general**

As stated herein, many of the HRG sources are considered *de minimus* sources<sup>19</sup> by NMFS in other incidental harassment authorizations and rulemakings. Thus, it is unclear why they are considered in HRG-related authorizations. The Commission recommends that NMFS evaluate the impacts of sound sources consistently across all action proponents and deem sources *de minimus* in a consistent manner for all proposed incidental harassment authorizations and rulemakings.

In addition, Skipjack is required by BOEM to implement shut-down procedures at 500 m for North Atlantic right whales and 200 m for other cetaceans and pinnipeds, respectively, based on conditions stipulated in Addendum C of the lease<sup>20</sup>. For the proposed authorization, NMFS would require Skipjack to implement a 500-m exclusion zone for North Atlantic right whales, a 200-m exclusion zone for cetaceans listed under the Endangered Species Act, and a 100-m exclusion zone for all other marine mammals. All of those zones are greater than in-situ measured Level B harassment zones and a standard 50-m Level B harassment zone. As NMFS seeks to streamline and improve the efficiency of its authorization processes, the Commission recommends that NMFS consider whether, in such situations involving HRG surveys<sup>21</sup>, incidental harassment authorizations are even necessary given the small size of the Level B harassment zones, the proposed shutdown requirements, and the added protection afforded by the lease-stipulated exclusion zones. Specifically, NMFS should evaluate whether taking needs to be authorized for those sources that are not considered *de minimus*, including sparkers and boomers, and for which implementation of the various mitigation measures should be sufficient to avoid Level B harassment takes.

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<sup>18</sup> Similar to NMFS's user spreadsheet for estimating Level A harassment zones.

<sup>19</sup> Defined as sources that have low source levels, narrow beams, downward-directed transmission, short pulse lengths, frequencies outside known marine mammal hearing ranges, or some combination of those factors (84 Fed. Reg. 37244).

<sup>20</sup> See [BOEM's 3 October 2014 letter to Bluewater Wind Delaware LLC](#) confirming receipt of the "Amendment of Renewable Energy Lease OCS-A 0482," and amending Section 4.3.6.1 of Addendum C to specify a 200-m default exclusion zone; no further amendments appear to have been made to Section 4.3.6.1 of Skipjack's lease.

<sup>21</sup> And until it revises its 160-dB re 1  $\mu$ Pa threshold for intermittent, non-impulsive sources.

## Reporting measures

The proposed incidental harassment authorization does not include a requirement that Skipjack include the marine mammal observational datasheets or raw sightings data in the draft or final report submitted to NMFS. Those data are important for providing the details regarding each sighting and take for the current activity and for informing future activities. The Commission recommends that NMFS include in section 6 of the final incidental harassment authorization, a requirement for Skipjack to provide the marine mammal observational datasheets or raw sightings data in its draft and final monitoring report.

## Proposed one-year authorization renewals

NMFS has indicated that it may issue a second one-year<sup>22</sup> incidental harassment authorization renewal for this and other future authorizations if various criteria are met and after an expedited public comment period of 15 days. The Commission is concerned that the proposed renewal process is inconsistent with the statutory requirements—section 101(a)(5)(D)(iii) clearly states that proposed authorizations are subject to a 30-day comment period—and Congressional expectations regarding the length of the comment period when it passed that provision<sup>23</sup>.

Another significant issue with the proposed 15-day comment period is the burden that it places on reviewers, who will need to review the original authorization and supporting documentation<sup>24</sup>, the draft monitoring report(s), the renewal application or request<sup>25</sup>, and the proposed authorization and then formulate comments very quickly. Depending on how frequently NMFS invokes the renewal option, how much the proposed renewal or the information on which it is based deviates from the original authorization, and how complicated the activities are and the taking authorization is, those who try to comment on all proposed authorizations and renewals, such as the Commission, would be hard pressed to do so within the proposed 15-day comment period. Therefore, the Commission recommends that NMFS refrain from using the proposed renewal process. The renewal process should be used sparingly and selectively, by limiting its use only to those proposed incidental harassment authorizations that are expected to have the lowest levels of impacts to marine mammals and that require the least complex analyses. Notices for other types of activities should not include the possibility that a renewal might be issued using the proposed foreshortened 15-day comment period. If NMFS intends to use the renewal process frequently *or* for authorizations that require a more complex review or for which much new information has been generated (e.g., multiple or extensive monitoring reports), the Commission recommends that NMFS provide the Commission and other reviewers the full 30-day comment opportunity set forth in section 101(a)(5)(D)(iii) of the MMPA.

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<sup>22</sup> NMFS has informed the Commission that renewals would be issued as a one-time opportunity, after which time a new authorization application would be required. NMFS has yet to specify this in any *Federal Register* notice detailing the new proposed renewal process but should do so.

<sup>23</sup> See, for example, the legislative history of section 101(a)(5)(D), which states "...in some instances, a request will be made for an authorization identical to one issued the previous year. In such circumstances, the Committee expects the Secretary to act expeditiously in complying with the notice and comment requirements." (H.R. Rep. No. 439, 103d Cong., 2d Sess. 29 (1994)). The referenced "notice and comment requirements" specify a 30-day comment period.

<sup>24</sup> Including the original application, hydroacoustic and marine mammal monitoring plans, take estimation spreadsheets, etc.

<sup>25</sup> Including any proposed changes or any new information.

Ms. Jolie Harrison  
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Please contact me if you have questions regarding the Commission's recommendations.

Sincerely,



Peter O. Thomas, Ph.D.,  
Executive Director

cc: Stan Labak and Jill Lewandowski, BOEM

### **References**

- Crocker, S.E., and F.D. Fratantonio. 2016. Characteristics of sounds emitted during high-resolution marine geophysical surveys. Naval Undersea Warfare Center Division, Newport, Rhode Island. 265 pages.
- Gardline 2016. Field verification and vessel signature report. Survey report for Bay State Wind Offshore Wind Farm, London, England. 62 pages.
- Gardline 2017. Technical memo in support of Bay State Wind field verification report. Bay State Wind Offshore Wind Farm, London, England. 3 pages.