



# MARINE MAMMAL COMMISSION

13 July 2020

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 Equinor Wind, LLC (Equinor) under section 101(a)(5)(D) of the Marine Mammal Protection Act (the MMPA). Equinor is seeking authorization to take small numbers of marine mammals by harassment incidental to high-resolution geophysical (HRG) surveys off New Jersey, New York, Connecticut, Rhode Island, and Massachusetts. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 24 June 2020 notice (85 Fed. Reg. 37848) requesting comments on its proposals to issue the authorization, subject to certain conditions.

## Background

Equinor is proposing to conduct HRG surveys to characterize lease areas<sup>1</sup> and export cable route areas (ECRAs) in support of offshore wind project facilities off the mid-Atlantic and southern New England. The surveys would occur during day and night in the lease areas and ECRAs and would involve the use of two concurrently-operating source vessels and a surveyor remotely operated vehicle (SROV). The estimated total duration of the surveys would be 218 days. Sound-generating equipment proposed for use includes sub-bottom profilers (SBPs; including chirp and sparker types), ultra-short baseline (USBL) and global acoustic positioning systems (GAPS), multibeam echosounders, and side-scan sonar. All equipment except the sparker and the USBL pinger would be mounted on the SROV, which would maintain a depth of no more than 6 m above the seabed at all times while surveying, thereby minimizing exposure of marine mammals to the SROV-mounted sources.

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—

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<sup>1</sup> Bureau of Ocean Energy Management (BOEM) lease numbers OCS-A 0520 and OCS-A 0512.

- conducting survey activities in the Cape Cod Bay and Off Race Point Seasonal Management Areas (SMAs) only from June through December and in the Great South Channel SMA only from August through March to protect North Atlantic right whales;
- using at least one protected species observer to monitor the exclusion zones<sup>2</sup>, a 500-m monitoring zone, and a 200-m buffer zone<sup>3</sup> at all times during daylight hours (30 minutes before sunrise through 30 minutes after sunset) and 30 minutes prior to, during, and 30 minutes after use of HRG survey equipment;
- using standard pre-clearance, ramp-up, delay, and shutdown procedures<sup>4</sup>;
- using shutdown 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 is met, approaches or is observed within the Level B harassment zone;
- using standard vessel strike avoidance procedures and monitoring<sup>8</sup> 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; and
- submitting a draft and final report to NMFS.

Although the Commission has commented and continues to comment on the appropriateness of the Level A and B harassment zones for HRG surveys, the Commission questions whether incidental harassment authorizations are necessary for these activities. The regulatory burden could be reduced significantly for both action proponents and the agency if NMFS were to advise them that authorizations are not necessary in instances similar to those specified herein for Equinor. In the event that NMFS continues to propose to issue authorizations for HRG surveys, the Commission will assess to what extent it will continue to review and comment on them.

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

*Background*—The Commission has commented repeatedly on the inappropriateness of Level A and B harassment zones associated with multiple HRG surveys in the past (e.g., see its [6 July 2020](#)<sup>5</sup>, [26 June 2020](#)<sup>6</sup>, [12 March 2020](#)<sup>7</sup>, [18 October 2019](#)<sup>8</sup>, [23 August 2019](#)<sup>9</sup>, [6 July 2018](#)<sup>10</sup>, [13 June 2018](#)<sup>11</sup> letters). However, NMFS continues to include inaccurate Level A and B harassment zones in its *Federal Register* notices and to prohibit applicants from using in-situ measurements of Level B harassment zones. Instead, NMFS has required action proponents to use harassment zones calculated from source levels obtained either from Crocker and Fratantonio (2016) or manufacturer

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<sup>2</sup> 500 m for North Atlantic right whales and 100 m for all other marine mammals, with the exception of small delphinids as identified herein.

<sup>3</sup> Which encompasses the 141-m Level B harassment zone.

<sup>4</sup> Shutdowns would not be required for small delphinids (*Delphinus* spp., *Tursiops* spp., *Stenella* spp., and *Lagenorhynchus* spp.) that voluntarily approach the survey vessel or equipment.

<sup>5</sup> For Dominion Energy Virginia's (Dominion) proposed HRG surveys.

<sup>6</sup> For Mayflower Energy, LLC's (Mayflower) proposed HRG surveys.

<sup>7</sup> For Vineyard Wind, LLC (Vineyard) and Atlantic Shores Offshore Wind, LLC's proposed HRG surveys.

<sup>8</sup> For Skipjack Offshore Energy, LLC's (Skipjack) proposed HRG surveys.

<sup>9</sup> For Ørsted Wind Power LLC's (Ørsted) proposed HRG surveys.

<sup>10</sup> For Dominion's proposed HRG surveys.

<sup>11</sup> For Ørsted/Bay State Wind's (Bay State Wind) proposed HRG surveys.

specifications, which has resulted in overestimated Level A and B harassment zones. These and other issues are summarized herein.

*Parameters, assumptions, and methods for estimating Level A and B harassment zones*—there are multiple issues with the parameters, assumptions, and methods used by Equinor, and in turn NMFS, to estimate the Level A and B harassment zones. These issues include, but are not limited to—

- NMFS using inconsistent source levels for the same equipment that operates under the same parameters. In the proposed incidental harassment authorization for Dominion that is available for public comment concurrently with Equinor’s proposed authorization, NMFS used a source level of 200 dB re  $1\mu\text{Pa}_{\text{root-mean-square (rms)}}$  at 1 m and 210 dB re  $1\mu\text{Pa}_{\text{peak}}$  for the GeoMarine Dual 400 sparker 800J<sup>12</sup> (GeoMarine sparker; see Table 1 in 85 Fed. Reg. 36540) operating at 0.25–4 kHz based on source levels provided by the manufacturer (see footnote 6 in the table). However, NMFS used a source level of 203 dB re  $1\mu\text{Pa}_{\text{rms}}$  at 1 m and 213 dB re  $1\mu\text{Pa}_{\text{peak}}$  operating at 0.25–3.25 kHz based on source levels for the ELC820 sparker in Crocker and Fratantonio (2016) as a proxy for the GeoMarine sparker for Equinor’s proposed authorization (see Table 2 in 85 Fed. Reg. 37851). The Level B harassment zone would have been 100 m rather than 141 m, if the lower source level used in the other recently proposed authorization had been used in this instance (see Table 7 in 85 Fed. Reg. 36555 and Table 5 in 85 Fed. Reg. 37865, respectively). Source levels must be consistent and based on the same information (e.g., either manufacturer’s specifications *or* Crocker and Fratantonio (2016)) when the same equipment (i.e., a GeoMarine 400 tip 800J sparker) is proposed for use by different action proponents.
- NMFS stipulating that, when the GeoMarine sparker is not operated, the potential for take of marine mammals by Level B harassment would be much lower based on the Level B harassment zone for the USBL pinger (i.e., 4 m; 85 Fed. Reg. 37864). It is impossible for a PSO to determine whether an animal approaches a pinger (either placed on the seabed or on any of the equipment) within 4 m in water depths that range from 20 to 75 m. Furthermore, NMFS indicated that, based on the very small Level A harassment zones (i.e., of no more than 3.5 m), the potential for any marine mammal to be taken by Level A harassment is considered so low as to be discountable (85 Fed. Reg. 37865). That same rationale applies to the Level B harassment zone for the USBL pinger and was used in another recently proposed and final authorization when NMFS discounted the USBL pinger (85 Fed. Reg. 14903 and 30930, respectively)<sup>13</sup>. It is unclear why NMFS did not use the same rationale for Equinor’s proposed authorization. NMFS must use its rationale for considering the potential of a marine mammal to be taken for both Level A *and* B harassment consistently across proposed authorizations.
- Neither Equinor nor NMFS specifying the Level A harassment input parameters and thresholds used to estimate the Level A harassment zones, which is inconsistent with other recently proposed authorizations that used NMFS’s user spreadsheet (e.g., see Table 5 in 85

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<sup>12</sup> Which is the same as Equinor’s Geo-Source 400 tip sparker 800J. GeoMarine is the manufacturer of Geo-Source sparkers, 400 denotes 400 tip, and both would operate at a maximum power of 800J.

<sup>13</sup> NMFS assumed that HRG sources that had a Level B harassment zone of 25 m or less would not have the potential to result in marine mammal harassment.

Fed. Reg. 36554). Thus, Equinor, and in turn NMFS, underestimated the Level A harassment zones. The Level A harassment zones should have been based on the information provided in Table 2<sup>14</sup>, an average vessel speed of 4 knots (85 Fed. Reg. 37849), and the impulsive thresholds and would have resulted in a Level A harassment zone of 1.2 m rather than <1 m for LF cetaceans and 8.4 m rather than <1 m for HF cetaceans for the cumulative sound exposure level thresholds. If NMFS intends to estimate Level A harassment zones for HRG sources, it must specify the input parameters and thresholds used and validate the zones provided by the action proponent using NMFS's user spreadsheet.

As the Commission noted in its [26 June 2020](#) and [6 July 2020](#) letters, NMFS must impart some consistency and transparency in the manner in which it estimates Level A and B harassment zones for HRG surveys. If NMFS intends to continue to estimate both Level A and B harassment zones associated with HRG surveys, the Commission recommends that NMFS (1) use consistent source levels for the same equipment that operates under the same parameters across the various action proponents, (2) specify the Level A harassment input parameters and thresholds used, particularly when using NMFS's user spreadsheet, and (3) consistently discount sources for both Level A and B harassment within the same *Federal Register* notice and across notices. The Commission also recommends that NMFS (1) use its revised user spreadsheet, in-beam source levels, the actual beamwidth, and the maximum water depth in the survey area to estimate the Level B harassment zones for *all* future proposed authorizations involving HRG sources and (2) revise the Level B harassment zone for the GeoMarine sparker to be 100 m based on the 200 dB re 1  $\mu\text{Pa}_{\text{rms}}$  at 1 m source level from the manufacturer, consistent with 85 Fed. Reg. 36540. Given that NMFS consistently asserts that Level A harassment is 'so low as to be discountable' even when those zones are estimated to be 3,950 m (85 Fed. Reg. 31874) *and* the shut-down zones don't encompass the full extents of the Level A harassment zones, the Commission questions why NMFS continues to estimate Level A harassment zones for these sources. To maximize efficiencies and ensure best available science is being used, the Commission recommends that NMFS consult with its acoustic experts<sup>15</sup> to determine how to estimate Level A harassment zones accurately, what Level A harassment zones are actually expected, and whether it is necessary to estimate Level A harassment zones for HRG surveys in general.

*In-situ measurements and standardized methods*—The Commission again notes that in-situ measurements of the same sources conducted off the east coast of the United States during previous HRG surveys indicate that the Level B harassment zones are in fact quite small, 27 m or less (e.g., Gardline 2016), for sparkers, including the GeoMarine sparker 800J<sup>16</sup> (GeoMarine sparker; see the Commission's [26 June 2020 letter](#) detailing this issue). Those Level B harassment zones are much less than the 141-m Level B harassment zone estimated by Equinor and the revised 100-m Level B harassment zone that the Commission recommended NMFS use. The Commission is not convinced that any of the HRG sources that Equinor plans to use would result in actual Level B harassment zones greater than 50

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<sup>14</sup> With the lower frequencies (700 Hz to 3.25 kHz) being the worst-case scenario for low-frequency (LF) cetaceans and the higher frequency (3.25 kHz) being the worst-case scenario for high-frequency (HF) cetaceans.

<sup>15</sup> Those personnel with expertise and formal training in underwater acoustics and bioacoustics.

<sup>16</sup> Gardline (2016) conducted measurements of the GeoMarine Geo-Source 400LW operating at 600 and 800J, which is the same as the sparker Equinor plans to use.

m, let alone more than the 100-m shut-down zone.

The Commission maintains that many of the in-situ measurement issues<sup>17</sup> that NMFS apparently is concerned about could be minimized with proper methodological requirements and signal processing standards, particularly for omnidirectional sources, and that those measurements should inform any incidental harassment authorizations NMFS intends to issue. To ensure that *in-situ* data are collected and analyzed appropriately, the Commission again recommends that NMFS and BOEM expedite efforts to develop and finalize methodological and signal processing standards for HRG sources. 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.

### **Consistency in estimating numbers of proposed takes**

As noted herein, the shutdown zones for Equinor's proposed authorization are 500 m for North Atlantic right whales and 100 m for all other marine mammals. NMFS indicated that it was not confident that all takes of North Atlantic right whales could be avoided by implementing the proposed mitigation measures<sup>18</sup> and given the fact that activities would occur 24 hours per day. Thus, NMFS proposed to authorize 50 percent of the takes that Equinor had estimated for North Atlantic right whales. That approach does not comport and is inconsistent with the approach NMFS has taken for Dominion's concurrently proposed authorization<sup>19</sup>.

For Dominion's proposed authorization, NMFS asserted that take is expected to be avoided based on the proposed mitigation measures<sup>20</sup> and discounted the estimated Level B harassment takes for North Atlantic right whales, humpback whales, fin whales, sei whales, sperm whales, and minke whales (85 Fed. Reg. 36556). Dominion and Equinor are required by their BOEM leases to conduct alternative monitoring (e.g., using PAM and/or night-vision equipment) if lessees intend to conduct operations at night or when visual observation is otherwise impaired<sup>21</sup>. Although the use of PAM and night-vision equipment (including infrared technology) were discussed in both Dominion's and Equinor's applications, NMFS did not discuss them in either of its *Federal Register* notices or discuss how using those technologies would increase mitigation effectiveness at night. As such, that implies that NMFS did not consider the use of such technologies when it discounted the Level B harassment takes for Dominion's proposed authorization.

The Commission contends that the Level B harassment takes should be discounted for Equinor, consistent with the approach NMFS has taken for Dominion and considering that the revised Level B harassment zone is the same size or smaller than the shut-down zones and multiple

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<sup>17</sup> Including contractors geo-referencing the source relative to the hydrophone, the hydrophone clipping the sound, and signal processing issues.

<sup>18</sup> The shutdown zone is 500 m; whereas, the Level B harassment zone is either 141 m or 100 m if revised as recommended.

<sup>19</sup> Which is available for public comment at the same time as Equinor's proposed authorization.

<sup>20</sup> Dominion would implement a 500-m shut-down zone for North Atlantic right whales and a 100-m shut-down zone for all other large whales. The Level B harassment zone was estimated to be 100 m.

<sup>21</sup> Equinor is specifically required to use both night-vision and PAM technology during nighttime hours (see condition 4.3.3 in Addendum C of Equinor's OCS-A 0520 lease).

types of technologies would be implemented during nighttime hours to mitigate takes. As such, the Commission recommends that NMFS follow a consistent approach and discount Level B harassment takes for those species in which the shut-down zones are equal to or greater than the Level B harassment zones for *all* draft and final authorizations involving HRG surveys, including Equinor's final authorization.

### **HRG surveys in general**

*Many* of the HRG sources<sup>22</sup> are considered *de minimis* sources<sup>23</sup> by NMFS in other incidental harassment authorizations and rulemakings. Thus, it is unclear why those sources, such as USBL pingers, which NMFS previously determined did not have the potential to result in marine mammal harassment (85 Fed. Reg. 14903 and 30933), continue to be considered in HRG-related authorizations. The Commission recommends that NMFS evaluate the impacts of sound sources consistently across all applications and provide notice in its guidance to applicants and to the public regarding those sources that it has determined to be *de minimis*. The Commission also again recommends that NMFS consider whether, in situations involving HRG surveys<sup>24</sup>, incidental harassment authorizations are necessary given the small size of the Level B harassment zones, the proposed shutdown requirements, and the various BOEM-stipulated lease requirements (e.g., using night-vision and PAM technologies during nighttime hours). Specifically, NMFS should evaluate whether taking needs to be authorized for those sources that *are not* considered *de minimis*<sup>24</sup>, including sparkers, *and* for which implementation of the various mitigation measures should be sufficient to avoid Level B harassment takes.

In addition, the Commission has noted informally and formally various errors and inconsistencies in estimating the extents of the Level A and B harassment zones for numerous incidental harassment authorizations, including those involving HRG surveys. It is apparent that dealing with the technical and quantitative aspects of authorizations involving HRG surveys is a challenge for NMFS and time consuming for both NMFS and the Commission. The Commission questions whether, rather than attempting to focus on activities that at most would result in a Level B harassment zone of 100 m, NMFS's efforts would be better focused on the actual construction phase of wind development, which has more potential to impact the various marine mammal species. In the meantime, NMFS should conduct more thorough reviews of future *Federal Register* notices and draft and final authorizations to minimize inaccuracies and inconsistencies and ensure transparency for the public.

### **Mitigation, monitoring, and reporting measures**

*Mitigation and monitoring measures*—As noted herein, Equinor indicated in its application an intent to use PAM and night-vision equipment, including infrared technology, during nighttime operations.

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<sup>22</sup> NMFS mischaracterized a previous recommendation made by the Commission that *all* HRG sources should be considered *de minimis* (84 Fed. Reg. 66159). Some are considered *de minimis*, while others are not. However, the impacts of those sources would be mitigated based on the implementation of shutdown requirements and lease-stipulated exclusion zones.

<sup>23</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>24</sup> And until it revises its 160-dB re 1  $\mu$ Pa threshold for intermittent, non-impulsive sources.

However, NMFS did not include any such requirements in the *Federal Register* notice or draft authorization. The use of alternative monitoring during nighttime operations is required under Equinor's two leases with BOEM<sup>25</sup>. In addition, NMFS included requirements for action proponents to use night-vision equipment in final authorizations issued to Atlantic Shores and Vineyard and in draft authorizations for Mayflower and Dominion. As such, the Commission recommends that NMFS include a requirement for Equinor to use night-vision equipment in the final authorization.

*Reporting measures*—The proposed authorizations appear to represent a change in NMFS's longstanding requirement that action proponents *immediately* report an unauthorized injury or mortality to NMFS, including a vessel strike, and *cease* operations until they have consulted with NMFS. Instead, NMFS is proposing that Equinor merely report the incident *as soon as feasible*. In response to previous comments by the Commission regarding this apparent change, NMFS indicated that it does not agree that a blanket requirement for project activities to cease would be practicable for a vessel that is operating on the water, and it is unclear what mitigation benefit would result from such a requirement in the event of a vessel strike (or presumably other injury; 85 Fed. Reg. 26944). In response, the Commission suggests that an evaluation of the circumstances associated with the injury would prove helpful in developing additional mitigation measures. For example, if the injury or vessel strike were to occur while the vessel was transiting at a higher speed, NMFS might require that the operator implement lower speeds during transit. If the injury or vessel strike were to involve a bow-riding dolphin, NMFS might no longer allow operators to continue operations in the presence of bow-riding delphinids. The rationale for ceasing operations until the circumstances of the unauthorized taking can be reviewed is to determine whether additional mitigation measures can and should be taken to minimize the likelihood of additional prohibited takes. The Commission therefore recommends that NMFS require Equinor to report as soon as possible *and* cease project activities immediately in the event of an unauthorized injury or mortality of a marine mammal, including from a vessel strike until NMFS's Office of Protected Resources and the New England/Mid-Atlantic Regional Stranding Coordinator have determined whether additional measures are necessary to minimize the potential for additional unauthorized takes.

### **Proposed one-year authorization renewals**

In this instance and consistent with previous Commission recommendations, NMFS stipulated that a renewal is a *one-time opportunity* (a) in the *Federal Register* notice (see 85 Fed. Reg. 37874), (b) on its webpage(s) detailing the renewal process (see the revised webpages<sup>26</sup>), and (c) in its draft authorization for Equinor (see condition 8<sup>27</sup>). Although the Commission expects that this tack will be taken for *all* proposed and final incidental harassment authorizations that include the possibility of a renewal, it still has ongoing concerns regarding NMFS's renewal process. Those concerns can be reviewed in its [10 February 2020](#) letter. As such, the Commission again recommends that NMFS refrain from issuing renewals for any authorization and instead use its abbreviated *Federal Register* notice process, which is similarly expeditious and fulfills NMFS's intent

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<sup>25</sup> Condition 4.4.3 in Addendum C of Equinor's OCS-A 0512 lease and condition 4.3.3 in Addendum C of Equinor's OCS-A 0520 lease.

<sup>26</sup> See <https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act> and <https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-harassment-authorization-renewals>.

<sup>27</sup> <https://www.fisheries.noaa.gov/webdam/download/107889444>.

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to maximize efficiencies.

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

Sincerely,



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

cc: Dr. Stan Labak, Bureau of Ocean Energy Management

### **References**

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