



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

INCIDENTAL HARASSMENT AUTHORIZATION

Ørsted Wind Power LLC is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1371(a)(5)(D)) to harass marine mammals incidental to high-resolution geophysical (HRG) survey investigations in coastal waters from New York to Massachusetts.

1. This Authorization is valid for a period of one year beginning from the date of issuance.
2. This Authorization is valid only for incidental take caused by underwater noise during marine site characterization surveys in the coastal waters of the Atlantic Ocean delineated in the IHA Application.

3. General Conditions

- (a) A copy of this IHA must be in the possession of Ørsted, its designees, the lead protected species observer (PSO), and work crew personnel operating under the authority of this IHA.
- (b) The species authorized for taking are listed in Table 1. The taking, by Level B harassment only, is limited to the species and numbers listed in Table 1.
- (c) The taking of any species of marine mammal by serious injury or death, the taking of any species of marine mammal not listed in Table 1, or any taking exceeding the authorized amounts listed in Table 1 are prohibited and may result in the modification, suspension, or revocation of this IHA.
- (d) Ørsted must ensure that the vessel operator and other relevant vessel personnel are briefed on all responsibilities, communication procedures, marine mammal monitoring protocols, operational procedures, and IHA requirements prior to the start of survey activity, and when relevant new personnel join the survey operations.
- (e) Ørsted must develop an environmental training program for all vessel crew prior to the start of survey and during any changes in crew. Prior to implementation, the training program must be provided to NOAA Fisheries for review and approval. Confirmation of the training and understanding of the requirements must be documented on a training course log sheet.



- (f) Acoustic sources must be deactivated when not acquiring data or preparing to acquire data, except as necessary for testing. Unnecessary use of the acoustic source must be avoided.
4. Mitigation Measures – The Holder of this Authorization is required to implement the following mitigation measures:
- (a) Visual monitoring must begin no less than 30 minutes prior to initiation of survey equipment and must continue until 30 minutes after use of survey equipment ceases.
 - (b) Monitoring Zone – PSOs must establish and monitor a marine mammal Monitoring Zone that represents a distance of 500 m from survey equipment, including autonomous survey vehicles (ASVs). Data on animals observed in the monitoring zone must be recorded as described in section 5(e).
 - (c) Exclusion Zone – PSOs must establish and monitor marine mammal Exclusion Zones. Distances to Exclusion Zones must be from any survey equipment, including ASVs. The Exclusion Zones are as follows:
 - (i) 500-m Exclusion Zone for North Atlantic right whales; and
 - (ii) 100-m Exclusion Zone for all other marine mammals.
 - (d) Harassment Zone – This zone represents the area within which marine mammals would be considered taken by Level B harassment and must encompass a distance between 180 m from all survey equipment, including ASVs. Data on marine mammal observed in the harassment zone must be recorded as takes and as described in section 5(d).
 - (e) Pre-clearance Zone – This zone represents the area that must be clear of marine mammals prior to starting any sources. The Pre-clearance zones are as follows:
 - (i) 500-m pre-clearance zone for NARW; and
 - (ii) 100-m pre-clearance zone for all other marine mammals.
 - (f) Shutdown requirements – If a marine mammal is observed within, entering, or approaching the relevant Exclusion Zones as described under 4 (b) while geophysical survey equipment is operational, the geophysical survey equipment must be immediately shut down.
 - (i) Any PSO on duty has the authority to delay the start of survey operations or to call for shutdown of the acoustic source if a marine mammal is detected within the applicable exclusion zone.

- (ii) The operator must establish and maintain clear lines of communication directly between PSOs on duty and crew controlling the acoustic source to ensure that shutdown commands are conveyed swiftly while allowing PSOs to maintain watch.
 - (iii) 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 have been reached, approaches or is observed within the 180-m Level B harassment zone, shutdown must occur.
 - (iv) Upon implementation of shutdown, the source may be reactivated after the marine mammal has been observed exiting the applicable exclusion zone or following a clearance period (15 minutes for small odontocetes and 30 minutes for all other species).
 - (v) If geophysical equipment shuts down for reasons other than mitigation (i.e., mechanical or electronic failure), resulting in the cessation of the survey activity for a period of less than 30 minutes, the equipment may be restarted as soon as practicable if visual surveys were continued diligently throughout the silent period and the relevant Exclusion Zones are confirmed by PSOs to have remained clear of marine mammals. If visual surveys were not conducted continuously during the pause of 30 minutes or less, a 30-minute pre-clearance period must precede the restart of the geophysical survey equipment as described in 4(f).
 - (vi) If a delphinid(s) from the genera *Delphinus*, *Lagenorhynchus*, *Stenella*, or *Tursiops* is visually detected approaching the vessel (i.e., to bow ride) or towed survey equipment, shutdown is not required. If there is uncertainty regarding identification of a marine mammal species (i.e., whether the observed marine mammal(s) belongs to one of the delphinid genera for which shutdown is waived), PSOs must use best professional judgment in making the decision to call for a shutdown. If delphinids from the above genera are observed within or entering the relevant EZ but do not approach the vessel or towed survey equipment, shutdown is required.
 - (vii) If a delphinid is visually detected within the marine mammal exclusion zone, no shutdown is required unless the visual PSO confirms the individual to be of a genus other than those listed, in which case a shutdown is required.
- (g) Pre-clearance observation – 30 minutes of pre-clearance observation must be conducted prior to use of geophysical survey equipment. If a marine mammal is observed within or approaching the pre-clearance zones described below during the pre-clearance period, use of geophysical survey equipment must not be initiated until the animal(s) is confirmed by visual observation to have exited the

relevant pre-clearance zone, or, until an additional time period has elapsed with no further sighting of the animal (i.e. 15 minutes for small cetaceans and seals and 30 minutes for all other species). Use of geophysical survey equipment must not be initiated if:

- (i) A North Atlantic right whale is observed within 500 m of geophysical survey equipment during the pre-clearance period;
 - (ii) Any other large marine mammals are sighted within 100 m of geophysical survey equipment during the pre-clearance period.
- (h) Ramp-up – when technically feasible, survey equipment must be ramped up at the start or re-start of survey activities. Ramp-up must begin with the power of the smallest acoustic equipment at its lowest practical power output appropriate for the survey. When technically feasible the power must then be turned up and other acoustic sources added such that the source level would increase gradually.
- (i) Vessel Strike Avoidance – Vessel operator and crew must maintain a vigilant watch for all marine mammals and slow down or stop the vessel or alter course, as appropriate, to avoid striking any marine mammal, unless such action represents a human safety concern. Survey vessel crew members responsible for navigation duties must receive site-specific training on marine mammal sighting/reporting and vessel strike avoidance measures. Vessel strike avoidance measures must include the following, except under circumstances when complying with these requirements would put the safety of the vessel or crew at risk:
- (i) All vessels regardless of size, must observe a 10-knot speed restriction in specific areas designated by NMFS for the protection of North Atlantic right whales from vessel strikes. These include any Dynamic Management Areas (DMA) when in effect, and the Mid-Atlantic Seasonal Management Areas (SMA) (from November 1 through April 30).
 - (ii) Vessel speeds must also be reduced to 10 knots or less when mother/calf pairs, pods, or large assemblages of cetaceans are observed near a vessel.
 - (iii) All vessels must maintain a minimum separation distance of 500 m from right whales. If a whale is observed but cannot be confirmed as a species other than a right whale, the vessel operator must assume that it is a right whale and maintain a minimum separation distance of 500 m.
 - (iv) All vessels must maintain a minimum separation distance of 100 m from sperm whales and all baleen whales.
 - (v) All vessels must, to the maximum extent practicable, attempt to maintain a minimum separation distance of 50 m from all other marine mammals,

with an understanding that at times this may not be possible (*e.g.*, for animals that approach the vessel).

- (vi) When marine mammals are sighted while a vessel is underway, the vessel must take action as necessary to avoid violating the relevant separation distance, *e.g.*, attempt to remain parallel to the animal's course, avoid excessive speed or abrupt changes in direction until the animal has left the area. If marine mammals are sighted within the relevant separation distance, the vessel must reduce speed and shift the engine to neutral, not engaging the engines until animals are clear of the area. This does not apply to any vessel towing gear or any vessel that is navigationally constrained.
- (vii) These requirements do not apply in any case where compliance would create an imminent and serious threat to a person or vessel or to the extent that a vessel is restricted in its ability to maneuver and, because of the restriction, cannot comply.
- (j) Seasonal Restrictions – No more than 3 survey vessels may operate concurrently from March through June within the area that includes the three lease areas (OCS-A 0486, 0487, and 0500) and ECR areas north of the lease areas up to, but not including, coastal and bay waters.

5. Monitoring

The holder of this Authorization is required to implement the following monitoring requirements:

- (a) Ørsted must employ qualified, trained PSOs to conduct marine mammal monitoring. PSO requirements are as follows:
 - (i) PSOs may be on watch for a maximum of four consecutive hours followed by a break of at least two hours between watches and must not exceed a combined watch schedule of more than 12 hours in a 24-hour period.
 - (ii) During daylight hours without an ASV in use, 1 PSO must be on watch during source operations. 2 PSOs must be on watch during ASV operations, ramp up procedures (not including the 30-minute pre clearance period) and during night time source operations. PSOs will work in shifts. During ASV operations, ramp-up procedures and nighttime operations PSOs must work in pairs with one PSO solely dedicated to monitoring ASV at all times..
 - (iii) PSOs must observe and collect data on marine mammals in and around the project area.

- (iv) PSOs must be independent observers (i.e., not survey personnel). Non-independent observers may be approved by NMFS, on a case-by-case basis, for limited, specific duties in support of approved, independent PSOs.
 - (v) At least one PSO on duty at all times must have prior experience working as a PSO.
 - (vi) Other PSOs may substitute education (i.e., degree in biological science or related field) or training for experience.
 - (vii) One PSO must be designated as lead observer or monitoring coordinator.
 - (viii) The lead observer must have prior experience working as an observer.
 - (ix) For monitoring around the ASV, a dual thermal/HD camera must be installed on the mother vessel, facing forward, angled in a direction so as to provide a field of view ahead of the vessel and around the ASV.
 - (x) One PSO must be assigned to monitor the ASV exclusively at all times during both day and night when in use.
 - (xi) The ASV must be kept in sight of the mother vessel at all times (within 800 m). The dedicated ASV PSO must have a clear, unobstructed view of the ASV's exclusion and monitoring zones during daytime operations
 - (xii) During nighttime, ASV operations the dedicated ASV PSO must monitor display showing real-time video from the thermal/HD camera installed on the front of the ASV.
 - (xiii) Night-vision goggles with thermal clip-ons and a hand-held spotlight must be provided such that PSOs can focus observations in any direction, around the mother vessel and/or the ASV.
 - (xiv) PSOs must be approved by NMFS. Ørsted must submit PSO CVs to NMFS for approval.
- (b) The following equipment must be provided to PSOs:
- (i) PSOs must be equipped with binoculars and have the ability to estimate distances to marine mammals located in proximity to their established zones using range finders.
 - (ii) Cameras of appropriate quality must be used for photographs and video to record sightings and verify species identification.

- (iii) Night-vision equipment (night-vision goggles with thermal clip-ons) and infrared technology must be used during any nighttime monitoring operations.
 - (iv) Position data must be recorded using hand-held or vessel global positioning system (GPS) units for each sighting.
 - (v) Radios for each PSO are required in order to communicate among vessel crew and PSOs
- (c) Observations must take place from the highest available vantage point on the survey vessel. General 360-degree scanning must occur during the monitoring periods, and target scanning by PSOs must occur when alerted of a marine mammal presence.
- (d) Data on all PSO observations within the monitoring zone must be recorded based on standard PSO collection requirements. PSOs must use standardized data forms, whether hard copy or electronic. The following information must be reported:
- (i) Vessel names (source vessel and other vessels associated with survey), vessel size and type, maximum speed capability of vessel, port of origin, and call signs;
 - (ii) PSO names and affiliations;
 - (iii) Dates of departures and returns to port with port name;
 - (iv) Date and participants of PSO briefings;
 - (v) Dates and times (Greenwich Mean Time) of survey effort and times corresponding with PSO effort;
 - (vi) Vessel location (latitude/longitude) when survey effort begins and ends; vessel location at beginning and end of visual PSO duty shifts;
 - (vii) Vessel heading and speed at beginning and end of visual PSO duty shifts and upon any line change;
 - (viii) Environmental conditions while on visual survey (at beginning and end of PSO shift and whenever conditions change significantly), including wind speed and direction, Beaufort sea state, Beaufort wind force, swell height, weather conditions, cloud cover, sun glare, and overall visibility to the horizon;

- (ix) Factors that may be contributing to impaired observations during each PSO shift change or as needed as environmental conditions change (e.g., vessel traffic, equipment malfunctions);
 - (x) Survey activity information, such as acoustic source power output while in operation, and any other notes of significance (i.e., pre-ramp-up survey, ramp-up, shutdown, testing, ramp-up completion, end of operations, etc.)
- (e) Upon visual observation of any marine mammal in the monitoring zone, the following information must be recorded:
- (i) Watch status (sighting made by PSO on/off effort, opportunistic, crew, alternate vessel/platform);
 - (ii) PSO who sighted the animal;
 - (iii) Time of sighting;
 - (iv) Vessel location at time of sighting;
 - (v) Water depth;
 - (vi) Direction of vessel's travel (compass direction);
 - (vii) Speed of the vessel(s) from which the observation was made;
 - (viii) Direction of animal's travel relative to the vessel;
 - (ix) Pace of the animal;
 - (x) Estimated distance to the animal and its heading relative to vessel at initial sighting;
 - (xi) Identification of the animal (e.g., genus/species, lowest possible taxonomic level, or unidentified); also note the composition of the group if there is a mix of species;
 - (xii) Estimated number of animals (high/low/best);
 - (xiii) Estimated number of animals by cohort (adults, yearlings, juveniles, calves, group composition, etc.);
 - (xiv) Description (as many distinguishing features as possible of each individual seen, including length, shape, color, pattern, scars or markings, shape and size of dorsal fin, shape of head, and blow characteristics);

- (xv) Detailed behavior observations (e.g., number of blows, number of surfaces, breaching, spy hopping, diving, feeding, traveling; as explicit and detailed as possible; note any observed changes in behavior);
- (xvi) Animal's closest point of approach and/or closest distance from the center point of the acoustic source;
- (xvii) Platform activity at time of sighting (e.g. , deploying, recovering, testing, data acquisition, other); and
- (xviii) Description of any actions implemented in response to the sighting (e.g., delays, shutdown, ramp-up, speed or course alteration, etc.) and time and location of the action. PSO names and affiliations;
- (xix) If observed within 180 m of geophysical survey equipment, marine mammals must be documented as takes by Level B harassment.

6. Reporting Measures

(a) Final Report

- (i) The holder of this Authorization is required to submit a technical report to NMFS within 90 days after completion of survey activities or expiration of IHA.
- (ii) The report must fully document the methods and monitoring protocols, summarize the data recorded during monitoring, estimate the number of marine mammals that may have been taken during survey activities, describes the effectiveness of the various mitigation techniques, and provides an interpretation of the results and effectiveness of all monitoring tasks.
- (iii) NMFS will provide comments within 30 days after receiving the final report, and Ørsted must address the comments and submit revisions within 30 days after receiving NMFS' comments. If no comment is received from NMFS within 30 days, the report is considered final.

(b) Reporting of injured or dead marine mammals:

- (i) In the unanticipated event that the specified activities clearly cause the take of a marine mammal in a prohibited manner, such as an injury, serious injury, or mortality, Ørsted must immediately cease all operations related to the activity resulting in the unanticipated take and immediately report the incident to the NMFS Office of Protected Resources at 301-427-8401 and the NMFS Northeast/Mid-Atlantic Stranding Coordinator at 978-282- 8478. The report must include the following information:

- i. Time, date, and location (latitude/longitude) of the incident;
- ii. Description of the incident;
- iii. Status of all sound source use in the 24 hours preceding the incident;
- iv. Environmental conditions (e.g., wind speed and direction, sea state, cloud cover, visibility, and water depth);
- v. Description of marine mammal observations in the 24 hours preceding the incident;
- vi. Species identification or description of the animal(s) involved;
- vii. The fate of the animal(s); and
- viii. Photographs or video footage of the animal (if equipment is available).

The activity shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS shall work with Ørsted to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. Ørsted may not resume the activity until notified by NMFS via letter, email, or telephone.

- (ii) In the event that Ørsted discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (i.e., in less than a moderate state of decomposition as described in the next paragraph), Ørsted must immediately report the incident to the NMFS Office of Protected Resources and the NMFS Northeast/Mid-Atlantic Stranding Coordinator. The report must include the same information identified in paragraph 6(b)(i) of this IHA. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with Ørsted to determine whether modifications in the activities are appropriate.
- (iii) In the event that Ørsted discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), Ørsted must report the incident to the NMFS Office of Protected Resources and the NMFS Northeast/Mid-Atlantic Stranding Coordinator within 24 hours of the discovery. Ørsted must provide photographs or video footage (if available) or other documentation of the stranded animal

sighting to NMFS and the Marine Mammal Stranding Network. Ørsted can continue its operations under such a case.

7. This Authorization may be modified, suspended, or withdrawn if the holder fails to abide by the conditions prescribed herein or if NMFS determines that the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals.
8. Renewals — On a case-by-case basis, NMFS may issue a one-year IHA renewal with an expedited public comment period (15 days) when 1) another year of identical or nearly identical activities as described in the Specified Activities section is planned or 2) the activities would not be completed by the time the IHA expires and a second IHA would allow for completion of the activities beyond that described in the Dates and Duration section, provided all of the following conditions are met:
 - (a) A request for renewal is received no later than 60 days prior to expiration of the current IHA.
 - (b) The request for renewal must include the following:
 - (i) An explanation that the activities to be conducted beyond the initial dates either are identical to the previously analyzed activities or include changes so minor that the changes do not affect the previous analyses, take estimates, or mitigation and monitoring requirements.
 - (ii) A preliminary monitoring report showing the results of the required monitoring to date and an explanation showing that the monitoring results do not indicate impacts of a scale or nature not previously analyzed or authorized.
 - (c) Upon review of the request for renewal, the status of the affected species or stocks, and any other pertinent information, NMFS determines that there are no more than minor changes in the activities, the mitigation and monitoring measures remain the same and appropriate, and the original findings remain valid.

for


Donna S. Wieting, Director
Office of Protected Resources
National Marine Fisheries Service

SEP 26 2019

Date

Table 1. Numbers of Level B Incidental Take of Marine Mammals Authorized

Species	Level B Takes Authorization No.
North Atlantic right whale	10
Humpback whale	58
Fin whale	52
Sei whale	2
Sperm whale	5
Minke whale	19
Long-finned pilot whale	235
Bottlenose dolphin	2,357
Short beaked common dolphin	2,892
Atlantic white-sided dolphin	1,005
Spotted dolphin	50
Risso's dolphin	30
Harbor porpoise	2,177
Harbor seal	4,509
Gray Seal	4,509