



INCIDENTAL HARASSMENT AUTHORIZATION

Vineyard Wind, LLC (Vineyard Wind) 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 marine site characterization surveys off the coasts of Massachusetts, Rhode Island, Connecticut, and New York, when adhering to the following terms and conditions.

1. This incidental harassment authorization (IHA) is valid from the date of issuance through June 20, 2022.
2. This IHA is valid only for the marine site characterization survey specified in the IHA application, in the Atlantic Ocean.
3. General Conditions
 - (a) A copy of this IHA must be in the possession of Vineyard Wind, the vessel operators, the lead protected species observers (PSO), and any other relevant designees of Vineyard Wind 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. Any taking of species not listed in Table 1, or exceeding the authorized amounts listed in Table 1, is prohibited and may result in the modification, suspension, or revocation of this IHA.
 - (c) The taking by injury, serious injury, or death of any of the species listed in Table 1 of the Authorization or any taking of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this IHA.
 - (d) Vineyard Wind 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.
4. Mitigation Requirements – The holder of this Authorization is required to implement the following mitigation measures:



- (a) Vineyard Wind must employ a minimum of two (2) NMFS-approved PSOs on each survey vessel at all times when high-resolution geophysical (HRG) equipment is in use (*i.e.* daylight and night time operations). PSOs must be on duty 30 minutes prior to ramp-up of HRG equipment on each survey vessel. PSOs must have no tasks other than to conduct observational effort, record observational data, and communicate with and instruct relevant vessel crew with regard to the presence of marine mammals and mitigation requirements.
- (b) 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.
- (c) Exclusion Zones – PSOs must establish and monitor marine mammal Exclusion Zones. Distances to Exclusion Zones must be from any survey equipment, not the distance from the vessel. Exclusion Zones must be as follows:
 - (i) 500-m Exclusion Zone for North Atlantic right whales;
 - (ii) 100-m Exclusion Zone for all other marine mammals.
- (d) Marine Mammal Monitoring Zone – PSOs must establish and monitor a marine mammal Monitoring Zone that represents a distance of 500 meters from survey equipment.
- (e) Marine Mammal Buffer Zone – PSOs must establish and monitor a 200-m Buffer Zone.
 - (i) During use of geophysical sources with the potential to result in marine mammal harassment (*i.e.*, anytime the acoustic source is active, including ramp-up), occurrences of marine mammals within the Buffer Zone must be communicated to the vessel operator to prepare for potential shutdown of the acoustic source.
 - (ii) The Buffer Zone is not applicable when the EZ is greater than 100 meters.
- (f) Shutdown requirements
 - (i) If a marine mammal is observed within or entering the relevant Exclusion Zones as described under 4(c) while geophysical survey equipment is operational, the geophysical survey equipment must be immediately shut down.

- (ii) Any PSO on duty has the authority to call for shutdown of survey equipment. When there is certainty regarding the need for mitigation action on the basis of visual detection, the relevant PSO(s) must call for such action immediately.
- (iii) When a shutdown is called for by a PSO, the shutdown must occur and any dispute resolved only following shutdown.
- (iv) The vessel operator must establish and maintain clear lines of communication directly between PSOs on duty and crew controlling the geophysical source(s) to ensure that shutdown commands are conveyed swiftly while allowing PSOs to maintain watch.
- (v) Upon implementation of a shutdown, survey equipment may be reactivated when all marine mammals that triggered the shutdown have been confirmed by visual observation to have exited the relevant Exclusion Zone or an additional time period has elapsed with no further sighting of the animal that triggered the shutdown (15 minutes for small odontocetes and seals and 30 minutes for all other marine mammals).
- (vi) If geophysical survey equipment shuts down for less than 30 minutes for reasons other than marine mammal mitigation (*e.g.*, due to mechanical or electronic failure) the equipment may be re-activated as soon as is practicable at full operational level if PSOs have maintained constant visual observation during the shutdown and no visual detections of marine mammals occurred within the applicable Exclusion and Buffer Zones during that time. For a shutdown of 30 minutes or longer, or if visual observation was not continued diligently during the pause, pre-clearance observation is required, as described under 4(g).
- (vii) If a delphinid(s) from the genera *Delphinus*, *Lagenorhynchus*, or *Tursiops* is visually detected approaching the vessel (*e.g.*, 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.
- (viii) Shutdown of geophysical survey equipment is required upon observation of a species for which authorization has not been granted, or, observation of a species for which authorization has been granted but the authorized number of takes has been met, approaching or observed within the Level B harassment zone (*i.e.*, within 195 meters of active geophysical survey equipment).

- (g) Pre-clearance observation – PSOs must conduct 30 minutes of pre-clearance observation prior to initiation of geophysical survey equipment. If a marine mammal is observed within or approaching the pre-clearance zones described below during the pre-clearance period, geophysical survey equipment must not be initiated until the marine mammal(s) is confirmed by visual observation to have exited the relevant zone, or, until an additional time period has elapsed with no further sighting of the animal (15 minutes for small odontocetes and seals and 30 minutes for all other species). The pre-clearance requirement includes small delphinids (as described in 4(f)(vii) above) that approach the vessel (*e.g.*, bow ride). Geophysical surveys must not be initiated if:
 - (i) a North Atlantic right whale is observed within a 500-m radius of geophysical survey equipment during the pre-clearance period; or
 - (ii) any other marine mammals are observed within a 200-m radius 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 gradually turned up and other acoustic sources added in a way such that the source level would increase gradually.
- (i) Seasonal Restrictions
 - (i) Survey activities in the Cape Cod Bay SMA and Off Race Point SMA are limited to the months of August and September.
 - (ii) Vineyard Wind must not operate more than three HRG survey vessels concurrently within a seasonal restriction area as shown in Figure 1 with HRG survey equipment operating at or below 180 kHz.
 - (A) December through February restriction area is delineated by latitudes and longitudes of 41.183 N; 40.366 N; 69.533 W; and 70.616 W. This area is marked by a solid line in Figure 1.
 - (B) March through June restriction area is delineated by a polygon with the following vertices: 40.746 N 70.748 W; 40.953 N 71.284 W; 41.188 N 71.284 W; 41.348 N 70.835 W; 41.35 N 70.455 W; 41.097 N 70.372 W; and 41.021 N 70.37 W. This area is marked by a dashed line in Figure 1.

- (j) 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) The vessel operator and crew must maintain vigilant watch for cetaceans and pinnipeds, and slow down or stop the vessel to avoid striking marine mammals;
 - (ii) The vessel operator must reduce vessel speed to 10 knots (18.5 km/hr) or less when any large whale, any mother/calf pairs, whale or dolphin pods, or larger assemblages of non-delphinoid cetaceans are observed near (within 100 m (330-ft)) an underway vessel;
 - (iii) The survey vessel must maintain a separation distance of 500 meters (1640 ft) or greater from any sighted North Atlantic right whale. 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 meters.
 - (iv) If underway, the vessel must steer a course away from any sighted North Atlantic right whale at 10 knots (18.5 km/hr) or less until the 500-m (1640 ft) minimum separation distance has been established. If a North Atlantic right whale is sighted in a vessel's path, or within 500 meters to an underway vessel, the underway vessel must reduce speed and shift the engine to neutral. Engines must not be engaged until the North Atlantic right whale has moved outside of the vessel's path and beyond 500 meters. If stationary, the vessel must not engage engines until the North Atlantic right whale has moved beyond 500 m;
 - (v) The vessel must maintain a separation distance of 100 meters (330 ft) or greater from any sighted non-delphinoid cetacean. If sighted, the vessel underway must reduce speed and shift the engine to neutral, and must not engage the engines until the non-delphinoid cetacean has moved outside of the vessel's path and beyond 100 meters. If a survey vessel is stationary, the vessel must not engage engines until the non-delphinoid cetacean has moved out of the vessel's path and beyond 100 meters;
 - (vi) The vessel must maintain a separation distance of 50 meters (164 ft) or greater from any sighted delphinoid cetacean or pinniped. Any vessel underway must

remain parallel to a sighted delphinoid cetacean's course whenever possible, and avoid excessive speed or abrupt changes in direction. Vessels may not adjust course and speed until the delphinoid cetaceans have moved beyond 50 meters and/or the abeam of the underway vessel;

- (vii) All vessels underway must not divert or alter course in order to approach any whale, delphinoid cetacean, or pinniped. Any vessel underway must avoid excessive speed or abrupt changes in direction to avoid injury to the sighted cetacean or pinniped; and
 - (viii) All survey 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: any DMAs or Slow Zones when in effect, and the Block Island Seasonal Management Area (SMA) (from November 1 through April 30), Cape Cod Bay SMA (from January 1 through May 15), Off Race Point SMA (from March 1 through April 30) and Great South Channel SMA (from April 1 through July 31).
5. Monitoring Requirements – Vineyard Wind is required to conduct marine mammal visual monitoring during geophysical survey activity. Monitoring must be conducted in accordance with the following requirements:
- (a) A minimum of two (2) NMFS-approved PSOs must be on duty and conducting visual observations when HRG equipment is in use on all survey vessels during geophysical surveys (*i.e.* daylight and night time operations).
 - (b) PSO resumes must be provided to NMFS for approval prior to commencement of the survey. PSO qualifications must include completion of a PSO training course and direct field experience conducting similar surveys.
 - (c) PSOs must be employed by a third-party observer provider, must have no tasks other than to conduct observational effort, collect data, and communicate with and instruct relevant vessel crew with regard to the presence of marine mammals and mitigation requirements (including brief alerts regarding maritime hazards), and must have successfully completed an approved PSO training course appropriate for their designated task. Non-third-party observers may be approved by NMFS on a case-by-case basis for limited, specific duties in support of approved, independent PSOs.

- (d) Visual monitoring must begin no less than 30 minutes prior to initiation of geophysical survey equipment and must continue until one hour after use of the acoustic source ceases or until 30 minutes past sunset.
- (e) PSOs must coordinate to ensure 360° visual coverage around the vessel from the most appropriate observation posts.
- (f) Visual observations must be conducted using binoculars and the naked eye while free from distractions and in a consistent, systematic, and diligent manner.
- (g) PSOs may be on watch for a maximum of four consecutive hours followed by a break of at least two hours between watches and may conduct a maximum of 12 hours of observation per 24-hour period.
- (h) In cases where multiple vessels are surveying concurrently, any observations of marine mammals must be communicated to PSOs on all active survey vessels.
- (i) PSOs must be equipped with binoculars and have the ability to estimate distances to marine mammals located in proximity to the vessel and/or Exclusion Zones using range finders. Reticulated binoculars must also be available to PSOs for use as appropriate based on conditions and visibility to support the sighting and monitoring of marine species.
- (j) Position data must be recorded using hand-held or vessel global positioning system (GPS) units for each sighting.
- (k) Vineyard Wind must consult NMFS' North Atlantic right whale reporting systems for the presence of North Atlantic right whales throughout survey operations for the establishment of a Dynamic Management Area (DMA or Slow Zone).
- (l) During good conditions (*e.g.*, daylight hours; Beaufort sea state (BSS) 3 or less), to the maximum extent practicable, visual PSOs must conduct observations when the acoustic source is not operating for comparison of sighting rates and behavior with and without use of the acoustic source and between acquisition periods.
- (m) Night-vision equipment (*i.e.*, night-vision goggles and infrared technology) must be available for use during nighttime monitoring.
- (n) Any observations of marine mammals by crew members aboard any vessel associated with the survey must be relayed to the PSO team.

- (o) If Exclusion Zones, Buffer Zone and/or Monitoring Zone are not fully visible to PSOs due to darkness or inclement weather, survey activities may continue, unless a marine mammal is detected within or entering the Exclusion Zones as described under 4(c).
- (p) Data on all PSO observations 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) PSO names and affiliations
 - (ii) Dates of departures and returns to port with port name
 - (iii) Dates and times (Greenwich Mean Time) of survey effort and times corresponding with PSO effort
 - (iv) Vessel location (latitude/longitude) when survey effort begins and ends; vessel location at beginning and end of visual PSO duty shifts
 - (v) Vessel heading and speed at beginning and end of visual PSO duty shifts and upon any line change
 - (vi) 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
 - (vii) 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)
 - (viii) Survey activity information, such as type of survey equipment in operation, acoustic source power output while in operation, and any other notes of significance (*i.e.*, pre-clearance survey, ramp-up, shutdown, end of operations, etc.)
 - (ix) If a marine mammal is sighted, the following information should be recorded:
 - (A) Watch status (sighting made by PSO on/off effort, opportunistic, crew, alternate vessel/platform);
 - (B) PSO who sighted the animal;

- (C) Time of sighting;
- (D) Vessel location at time of sighting;
- (E) Water depth;
- (F) Direction of vessel's travel (compass direction);
- (G) Direction of animal's travel relative to the vessel;
- (H) Pace of the animal;
- (I) Estimated distance to the animal and its heading relative to vessel at initial sighting;
- (J) 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;
- (K) Estimated number of animals (high/low/best) ;
- (L) Estimated number of animals by cohort (adults, yearlings, juveniles, calves, group composition, etc.);
- (M) 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);
- (N) Detailed behavior observations (*e.g.*, number of blows, number of surfaces, breaching, spyhopping, diving, feeding, traveling; as explicit and detailed as possible; note any observed changes in behavior);
- (O) Animal's closest point of approach and/or closest distance from the center point of the acoustic source;
- (P) Platform activity at time of sighting (*e.g.*, deploying, recovering, testing, data acquisition, other);
- (Q) 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: and

- (R) Documentation of whether the marine mammal was estimated to have been within 195 meters of active survey equipment.

6. Reporting – a monitoring report must be provided to NMFS within 90 days after completion of survey activities that fully documents the methods and monitoring protocols, summarizes the data recorded during both visual and passive acoustic monitoring, estimates the number of marine mammals that may have been taken during survey activities, describes, assesses and compares the effectiveness of monitoring and mitigation measures. Any recommendations made by NMFS must be addressed in the final report prior to acceptance by NMFS. PSO datasheets or raw sightings data must also be provided with the draft and final monitoring report.

(a) Reporting sightings of North Atlantic right whales:

- (i) If a North Atlantic right whale is observed at any time by any project vessels, during surveys or during vessel transit, Vineyard Wind must immediately report sighting information to the NMFS North Atlantic Right Whale Sighting Advisory System: (866) 755-6622. North Atlantic right whale sightings in any location may also be reported to the U.S. Coast Guard via channel 16.

(b) Reporting injured or dead marine mammals:

- (i) Discovery of injured or dead marine mammal – In the event that personnel involved in the survey activities covered by the authorization discover an injured or dead marine mammal, the IHA-holder shall report the incident to the Office of Protected Resources (OPR) (301-427-8401), NMFS and to the New England/Mid-Atlantic Regional Stranding Coordinator (978-282-8478) as soon as feasible. The report must include the following information:
 - (A) Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
 - (B) Species identification (if known) or description of the animal(s) involved;
 - (C) Condition of the animal(s) (including carcass condition if the animal is dead);
 - (D) Observed behaviors of the animal(s), if alive;
 - (E) If available, photographs or video footage of the animal(s); and
 - (F) General circumstances under which the animal was discovered.

- (ii) Vessel Strike – In the event of a ship strike of a marine mammal by any vessel involved in the activities covered by the authorization, the IHA-holder shall report the incident to OPR, NMFS and to the New England/Mid-Atlantic Regional Stranding Coordinator as soon as feasible. The report must include the following information:
 - (A) Time, date, and location (latitude/longitude) of the incident;
 - (B) Species identification (if known) or description of the animal(s) involved;
 - (C) Vessel's speed during and leading up to the incident;
 - (D) Vessel's course/heading and what operations were being conducted (if applicable);
 - (E) Status of all sound sources in use;
 - (F) Description of avoidance measures/requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike;
 - (G) Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, visibility) immediately preceding the strike;
 - (H) Estimated size and length of animal that was struck;
 - (I) Description of the behavior of the marine mammal immediately preceding and following the strike;
 - (J) If available, description of the presence and behavior of any other marine mammals immediately preceding the strike;
 - (K) Estimated fate of the animal (e.g., dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared); and
 - (L) To the extent practicable, photographs or video footage of the animal(s).

7. This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein, or if NMFS determines the authorized taking is

having more than a negligible impact on the species or stock of affected marine mammals.

Catherine Marzin,
Acting Director, Office of Protected Resources
National Marine Fisheries Service

Date

Table 1. Numbers of Incidental Take of Marine Mammals Authorized

Species	Authorized Takes by Level B Harassment
Fin whale	51
Humpback whale	34
Minke whale	31
North Atlantic right whale	10
Sei whale	3
Atlantic white sided dolphin	758
Bottlenose dolphin	611
Pilot whales	107
Risso's dolphin	6
Common dolphin	2,036
Sperm whale	3
Harbor porpoise	784
Gray seal	3,033
Harbor seal	3,033

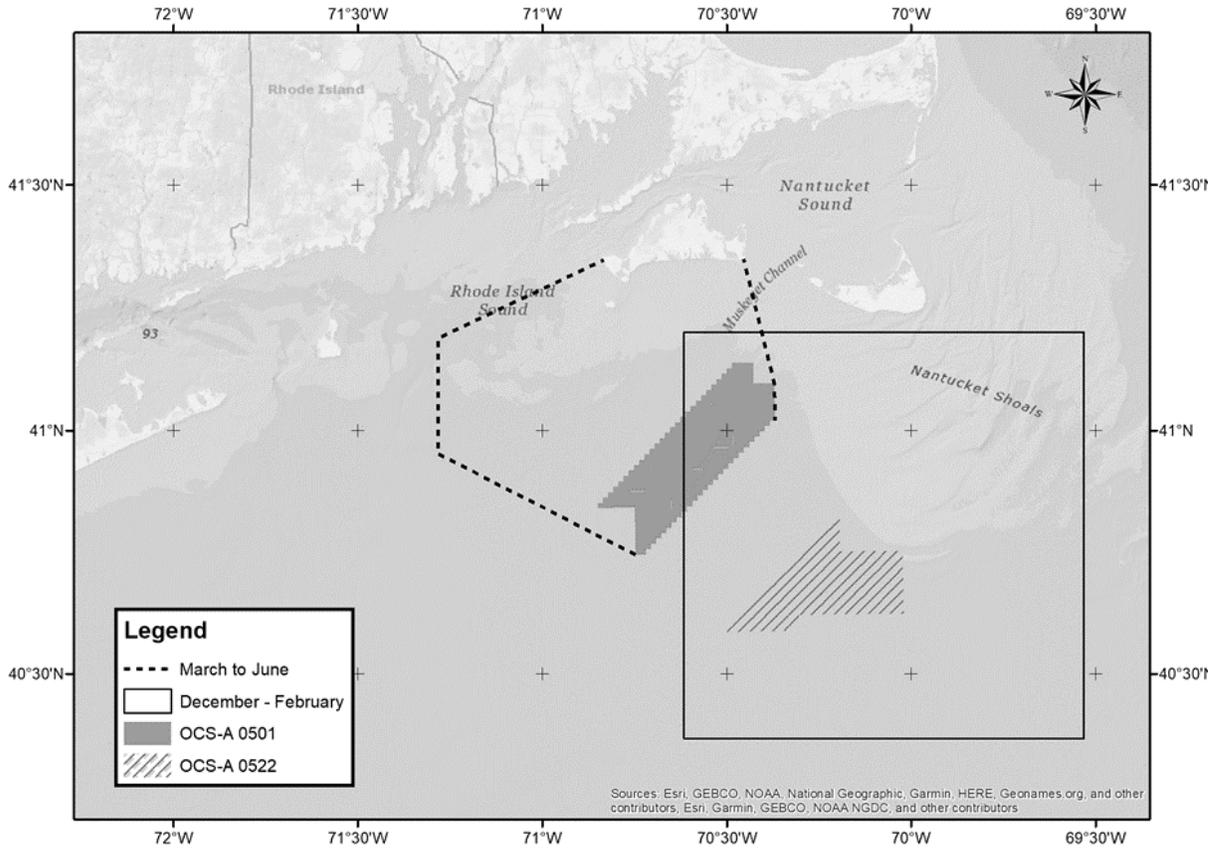


Figure 1. Seasonal Restriction Areas