

ADDENUM TO

2022 REQUEST FOR AN INCIDENTAL HARASSMENT

AUTHORIZATION TO ALLOW THE NON-LETHAL TAKE OF

MARINE MAMMALS INCIDENTAL TO SITE

CHARACTERIZATION SURVEYS FOR VINEYARD NORTHEAST

SUMMARY OF UPDATES TO 2022 IHA APPLICATION

Original Application Section	Summary of Changes
1. Description of Activity	No change to the type of high resolution geophysical (HRG) survey activities is proposed. Table 1 has been revised to reflect the linear distance of survey trackline (kilometers, km) and the active sound source days needed to complete the survey activities. Figure 1 has been revised to reflect the reduced HRG survey area in which survey is expected to occur. See also Section 2 for changes to the specified geographic region.
2. Dates, Duration, and Specified Geographic Region	HRG survey activities are anticipated to be conducted between July 27, 2023 and July 26, 2024. See updated Section 2.1 below. Figure 1 has been revised to reflect the reduced HRG survey area in which survey is expected to occur.
3. Species and Numbers of Marine Mammals	Table 2 is updated to reflect the updated abundance estimate for North Atlantic Right Whale (NARW) as reported in the <i>2022 Draft US Atlantic and Gulf of Mexico Marine Mammal Stock Assessment Report</i> (Hayes et al. 2023).
4. Affected Species Status and Distribution	In addition to updated estimates for NARW, estimated human-caused mortality and serious injury has been updated.
5. Type of Incidental Taking Authorization Request	No change
6. Take Estimates for Marine Mammals	Take estimates for the 2023–2024 period have been updated using the latest density estimates (refer to Section 3) calculated within the reduced survey area and based on the lower amount of anticipated survey activity. Tables 8 through 11 have been updated.
7. Anticipated Impact of the Activity	No change
8. Anticipated Impacts on Subsistence Uses	No change
9. Anticipated Impacts on Habitat	No change
10. Anticipated Effects of Habitat Impacts on Marine Mammals	No change
11. Mitigation Measures to Protect Marine Mammals and Their Habitat	No change
12. Mitigation Measures to Protect Subsistence Uses	No change
13. Monitoring and Reporting	No change
14. Suggested Means of Coordination	No change
15. Literature Cited	Two citations have been added.
Appendix A	No change

Section 1 Revisions – Description of Specified Activity

The extent of the survey area has been reduced based on survey work completed and further survey work expected to be needed. As shown on Figure 1, this reduced area does not include the Cape Cod Seasonal Management Area. The reduced survey area is 33,814 square kilometers (km²) with an average water depth of 37.73 meters (not including the lease areas.) The reduced HRG survey area for 2023 – 2024 is shown in Figure 1 and the revised amount of survey effort is shown in Table 1.

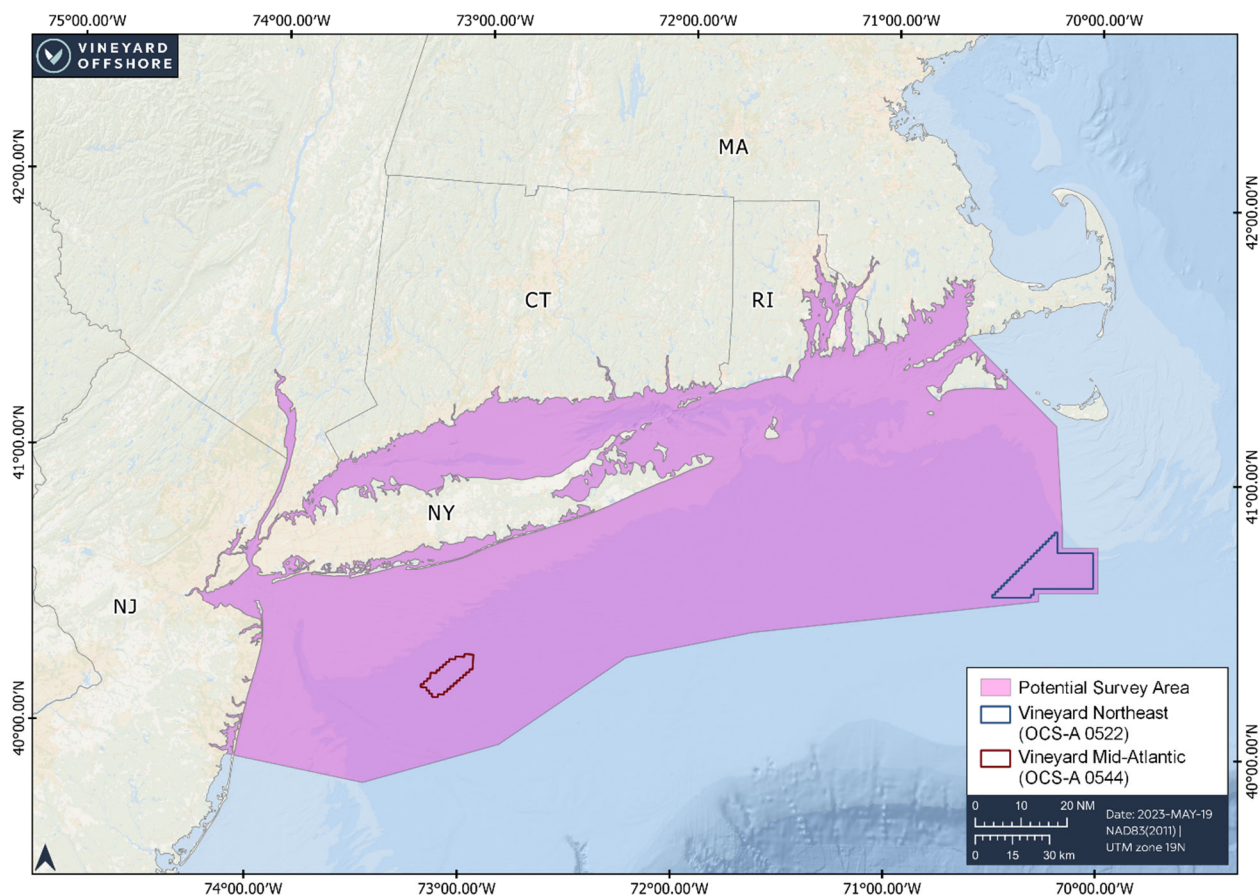


Figure 1. HRG surveys would occur within the Survey Area (shaded pink).

Table 1. Potential Geophysical Survey effort from June 21, 2023, through June 20, 2024.

Location	Approximate Survey Trackline (km)	Approximate Survey Distance Per Day (km)	Active Sound Source Days
HRG Survey Area	37,360	80	467

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Section 2 Revisions - Dates, Duration of the Proposed HRG Surveys

HRG survey activities are anticipated to be conducted between July 27, 2023 and July 26, 2024. Figure 1 is revised to reflect the reduced HRG survey area in which survey is expected to occur.

Section 3 Revisions – Species and Number of Marine Mammals

Table 2 below reflects the updated abundance estimate for the North Atlantic right whale (NARW) as reported in the *2022 Draft US Atlantic and Gulf of Mexico Marine Mammal Stock Assessment Report* (Hayes et al. 2023). This revised table replaces Table 2 within the original IHA Application.

Table 2. Marine mammal species that could be present in the Potential Survey Area.

Common Name (Species Name) and Stock	ESA/MMPA Status ^a	Hearing Group ^b	Occurrence in Potential Survey Area ^c	Seasonality in Potential Survey Area ^d	Abundance ^e (NOAA Fisheries best available)
Mysticetes					
Blue whale (<i>Balaenoptera musculus</i>) Western North Atlantic Stock	Endangered/ Strategic	Low-frequency cetacean	Uncommon	Mainly winter, but rare year- round	402
Fin whale (<i>Balaenoptera physalus</i>) Western North Atlantic Stock	Endangered/ Strategic	Low-frequency cetacean	Common	Year-round, but mainly spring and summer	6,802
Humpback whale (<i>Megaptera novaeangliae</i>) Gulf of Maine Stock	Not Listed/Not Strategic	Low-frequency cetacean	Common	Year-round, but mainly spring and summer	1,396
Minke whale (<i>Balaenoptera acutorostrata</i>) Canadian East Coast Stock	Not Listed/Not Strategic	Low-frequency cetacean	Common	Spring, summer, and fall (March to September)	21,968
North Atlantic right whale (<i>Eubalaena glacialis</i>) Western North Atlantic Stock	Endangered/ Strategic	Low-frequency cetacean	Common	Winter and spring (December to May)	338
Sei whale (<i>Balaenoptera borealis</i>) Nova Scotia Stock	Endangered/ Strategic	Low-frequency cetacean	Common	Spring and summer (March to June)	6,292

Common Name (Species Name) and Stock	ESA/MMPA Status ^a	Hearing Group ^b	Occurrence in Potential Survey Area ^c	Seasonality in Potential Survey Area ^d	Abundance ^e (NOAA Fisheries best available)
Odontocetes					
Atlantic spotted dolphin (<i>Stenella frontalis</i>) Western North Atlantic Stock	Not Listed/Not Strategic	Mid-frequency cetacean	Rare	NA	39,921
Atlantic white-sided dolphin (<i>Lagenorhynchus acutus</i>) Western North Atlantic Stock	Not Listed/Not Strategic	Mid-frequency cetacean	Common	Year-round	93,233
Mesoplodont beaked whales (<i>Mesoplodon densirostris</i> , <i>M. europaeus</i> , <i>M. mirus</i> , <i>M. bidens</i>) Western North Atlantic Stock	MMPA Depleted and Strategic	Mid-frequency cetacean	Rare	NA	10,107 ^f
Common bottlenose dolphin (<i>Tursiops truncatus</i>) Western North Atlantic Offshore Stock	Not Listed/Not Strategic	Mid-frequency cetacean	Common	Year-round	62,851
Common bottlenose dolphin (<i>Tursiops truncatus</i>) Western North Atlantic Northern Migratory Coastal Stock	MMPA Depleted and Strategic	Mid-frequency cetacean	Uncommon	Year-round	6,639
Cuvier's beaked whale (<i>Ziphius cavirostris</i>) Western North Atlantic Stock	Not Listed/Not Strategic	Mid-frequency cetacean	Rare	NA	5,744
Dwarf and pygmy sperm whale (<i>Kogia sima</i> and <i>K. breviceps</i>) Western North Atlantic Stock	Not Listed/Not Strategic	High-frequency cetacean	Rare	NA	7,750
Harbor porpoise (<i>Phocoena phocoena</i>) Gulf of Maine/Bay of Fundy Stock	Not Listed/Not Strategic	High-frequency cetacean	Common	Year-round, but less abundant in summer	95,543
Killer whale (<i>Orcinus orca</i>) Western North Atlantic Stock	MMPA Non-strategic	Mid-frequency cetacean	Rare	NA	Unknown
Pilot whale, long-finned (<i>Globicephalus melas</i>) Western North Atlantic Stock	Not Listed/Not Strategic	Mid-frequency cetacean	Uncommon	Year-round	39,215

Common Name (Species Name) and Stock	ESA/MMPA Status ^a	Hearing Group ^b	Occurrence in Potential Survey Area ^c	Seasonality in Potential Survey Area ^d	Abundance ^e (NOAA Fisheries best available)
Pilot whale, short-finned (<i>Globicapalus macrorhynchus</i>) Western North Atlantic Stock	MMPA Depleted and Strategic	Mid-frequency cetacean	Rare	NA	28,924
Risso's dolphin (<i>Grampus griseus</i>) Western North Atlantic Stock	Not Listed/Not Strategic	Mid-frequency cetacean	Uncommon	Year-round	35,215
Common dolphin (<i>Delphinus delphis delphis</i>) Western North Atlantic Stock	Not Listed/Not Strategic	Mid-frequency cetacean	Common	Year-round, but more abundant in summer	172,974
Sperm whale (<i>Physeter macrocephalus</i>) North Atlantic Stock	Endangered/ Strategic	Mid-frequency cetacean	Uncommon	Mainly summer and fall	4,349
Striped dolphin (<i>Stenella coeruleoalba</i>) Western North Atlantic Stock	Not Listed/Not Strategic	Mid-frequency cetacean	Rare	NA	67,036
Pinnipeds					
Gray seal (<i>Halichoerus grypus</i>) Western North Atlantic Stock	Not Listed/Not Strategic	Phocid pinniped	Common	Year-round	27,300
Harbor seal (<i>Phoca vitulina</i>) Western North Atlantic Stock	Not Listed/Not Strategic	Phocid pinniped	Regular	Year-round, but rare in summer	61,336
Harp seal (<i>Pagophilus groenlandicus</i>) Western North Atlantic Stock	Not Listed/Not Strategic	Phocid pinniped	Rare	Winter and spring	7.6 M

NA = Not Applicable and/or insufficient data available to determine seasonal occurrence in the offshore project area.

^a Listing status under the US Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA).

^b Hearing group according to NOAA Fisheries technical guidance (NMFS 2018). NOTE: Hearing groups names were recently revised by Southall et al. (2019).

^c Occurrence in the Potential Survey Area was mainly derived from Hayes et al. (2020), Kenney and Vigness-Raposa (2010), Kraus et al. (2016), and Roberts et al.(2016; 2022).

^d Seasonality in the Potential Survey Area was mainly derived from Kraus et al. (2016) and Kenney and Vigness-Raposa (2010).

^e "Best Available" population estimate is from the 2021 Marine Mammal Stock Assessment Report (Hayes 2022; 2023).

^f Mesoplodont beaked whale abundance estimate accounts for all undifferentiated beaked whale species within the Western Atlantic (Hayes 2019).

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Section 4 Revisions– Affected Species Status and Distribution

As shown in Table 2 above, the abundance estimate for the North Atlantic right whale has been updated from 368 to 338 (Hayes et al. 2023). Additionally, the previously estimated human-caused mortality and serious injury between 2015 and 2019 has been updated to an average of 8.1 whales per year during 2016 through 2020 (Hayes et al. 2023).

Section 6 Revisions– Take Estimates for Marine Mammals

Take estimates for the 2023–2024 period have been updated using the latest marine mammal density estimates from Roberts et al. (2022) calculated within the reduced survey area and based on the lower amount of anticipated survey activity. Table 8 shows the new average monthly marine mammal densities within the survey area based on the density models released by Roberts et al. on June 24, 2022. The same or similar HRG survey equipment will be used in 2023–2024 so the same distances to threshold levels and daily ensonified area described in the original IHA Application were used to re-calculate potential take for the 2023–2024 proposed survey activity (Table 9 and Table 11). Similar to the 2022 IHA Application, the updated density models do not appear to adequately reflect the number of dolphins that may be encountered. Therefore, using the same methodology applied in the 2002 IHA Application, the requested take is based on the average number of common dolphins observed by Protected Species Observers (16) multiplied by the anticipated number of survey days (467). In addition, consistent with the current IHA, requested take for rare species (killer whale, false killer whale and white-beaked dolphin) are included and have not been changed since the 2022 IHA Application. Vineyard Northeast is requesting take for the three species based on the largest number of individuals observed within a single sighting during previous HRG surveys in the area (Vineyard Wind 2019; 2020): 30 white-beaked dolphins, 5 false killer whales, and 2 orca.

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Table 8. Average monthly and annual average marine mammal densities for the proposed HRG Survey Area (Roberts et al. 2016; Roberts et al. 2022).

Species	Monthly Average Densities (Individuals/km ²)												Annual Mean
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Density (Ind/km ²)
<i>Mysticetes</i>													
Blue Whale*	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fin Whale*	0.0015	0.0013	0.0011	0.0012	0.0017	0.0019	0.0027	0.0021	0.0016	0.0005	0.0004	0.0011	0.0015
Humpback Whale	0.0005	0.0004	0.0005	0.0010	0.0016	0.0017	0.0007	0.0005	0.0008	0.0011	0.0011	0.0006	0.0009
Minke Whale	0.0007	0.0008	0.0008	0.0063	0.0122	0.0092	0.0034	0.0021	0.0023	0.0025	0.0003	0.0006	0.0034
North Atlantic Right Whale*	0.0017	0.0021	0.0020	0.0018	0.0010	0.0002	0.0001	0.0001	0.0001	0.0002	0.0003	0.0009	0.0009
Sei Whale*	0.0002	0.0002	0.0003	0.0007	0.0009	0.0002	0.0001	0.0000	0.0001	0.0002	0.0005	0.0004	0.0003
<i>Odontocetes</i>													
Atlantic Spotted Dolphin	0.0000	0.0000	0.0000	0.0000	0.0002	0.0004	0.0003	0.0006	0.0023	0.0052	0.0015	0.0002	0.0009
Atlantic White-Sided Dolphin	0.0108	0.0071	0.0054	0.0090	0.0178	0.0179	0.0053	0.0022	0.0065	0.0111	0.0098	0.0126	0.0096
Bottlenose Dolphin	0.0075	0.0025	0.0017	0.0049	0.0154	0.0251	0.0253	0.0216	0.0211	0.0243	0.0230	0.0190	0.0160
Common Dolphin	0.0742	0.0316	0.0188	0.0294	0.0470	0.0747	0.0497	0.0670	0.1122	0.1526	0.0970	0.1067	0.0717
Harbor Porpoise	0.0539	0.0571	0.0558	0.0550	0.0297	0.0045	0.0047	0.0035	0.0033	0.0044	0.0058	0.0342	0.0260
Pilot Whales	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013
Risso's Dolphin	0.0007	0.0001	0.0000	0.0002	0.0008	0.0004	0.0005	0.0007	0.0010	0.0007	0.0009	0.0015	0.0006
Sperm Whale*	0.0001	0.0001	0.0001	0.0000	0.0001	0.0001	0.0002	0.0004	0.0002	0.0001	0.0002	0.0001	0.0001
<i>Pinnipeds</i>													
Seals (Harbor and Gray)	0.1606	0.1449	0.1190	0.1111	0.1639	0.1486	0.0297	0.0154	0.0228	0.0788	0.0789	0.1462	0.1017

* Denotes species listed under the Endangered Species Act.

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Table 9. Estimated Level B exposures based on annual average marine mammal densities in the survey area.

Species	Annual Mean Density (Ind/km ²)	Density Based Exposures
<i>Mysticetes</i>		
Blue Whale*	0.0000	0.1
Fin Whale*	0.0015	19.4
Humpback Whale	0.0009	11.6
Minke Whale	0.0034	46.0
North Atlantic Right Whale*	0.0009	11.6
Sei Whale*	0.0003	4.3
<i>Odontocetes</i>		
Atlantic Spotted Dolphin	0.0009	12.0
Atlantic White-Sided Dolphin	0.0096	128.5
Bottlenose Dolphin	0.0160	213.1
Common Dolphin	0.0717	957.4
Harbor Porpoise	0.0260	346.9
Pilot Whales	0.0013	17.0
Risso's Dolphin	0.0006	8.4
Sperm Whale*	0.0001	2.0
<i>Pinnipeds</i>		
Gray Seal	0.0313	417.9
Harbor Seal	0.0703	938.9

* Denotes species listed under the Endangered Species Act.

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Table 11. Number of Level B takes requested and percentages of each species or stock abundance.

Species	Density Based Exposures	Mean Group Size	Requested Take	Abundance NMFS ^a	Percent of NMFS ^a Stock Abundance
<i>Mysticetes</i>					
Blue Whale*	0.1	1.0	1	402	0.2
Fin Whale*	19.4	1.8	20	6,802	0.3
Humpback Whale	11.6	2.0	12	1,396	0.9
Minke Whale	46.0	1.2	46	21,968	0.2
North Atlantic Right Whale*	11.6	2.4	12	338	3.6
Sei Whale*	4.3	1.6	5	6,292	0.1
<i>Odontocetes</i>					
Atlantic Spotted Dolphin	12.0	29.0	29	39,921	0.1
Atlantic White-Sided Dolphin	128.5	27.9	129	93,233	0.1
Bottlenose Dolphin - <i>Offshore Stock</i>	168.3	7.8	169	62,851	0.3
Bottlenose Dolphin - <i>Migratory Coastal Stock</i>	44.7	7.8	45	6,639	0.7
Common Dolphin	957.4	34.9	7,472	172,974	4.3
Harbor Porpoise	346.9	2.7	347	95,543	0.4
Pilot Whales	17.0	8.4	17	68,139	0.0
Risso's Dolphin	8.4	5.4	9	35,215	0.0
Sperm Whale*	2.0	1.5	2	4,349	0.0
<i>Pinnipeds</i>					
Gray Seal	417.9	0.4	418	27,300	1.5
Harbor Seal	938.9	1.0	939	61,336	1.5

* Denotes species listed under the Endangered Species Act.

^a Source – (Hayes 2022; Hayes 2023)

Section 15 Revision - Literature Cited

The following references are in addition to those presented in Section 15 of the original IHA Application.

- Hayes, S. A., E. Josephson, K. Maze-Foley, and P. E. Rosel. 2023. Draft 2022 U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessment *in* Northeast Fisheries Science Center, editor., Woods Hole, MA.
- Roberts, J. J. 2022. Habitat-based Marine Mammal Density Models for the U.S. Atlantic: Latest Versions. Marine Geospatial Ecology Laboratory/Duke University.