

Campaign 8 Interim Report 1

Massachusetts Clean Energy Center

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Task/Deliverables	Schedule
Conduct March survey(s)/ Survey(s) completed	March 2023
Conduct April survey(s)/ Survey(s) completed	April 2023
Conduct May survey(s)/ Survey(s) completed	May 2023
Conduct June survey(s)/ Survey(s) completed	June 2023
Conduct July survey(s)/ Survey(s) completed	July 2023
Submit Campaign Interim Report 1	August 2023

Project Plan

The New England Aquarium has conducted aerial line-transect surveys of the Southern New England Wind Energy Areas (WEA) and surrounding waters as illustrated in Figure 1 (the “study area”) using a mix of observer sightings and automated aerial photography to estimate distributions and abundances of large whales, including the North Atlantic right whale (*Eubalaena glacialis*), and sea turtles.

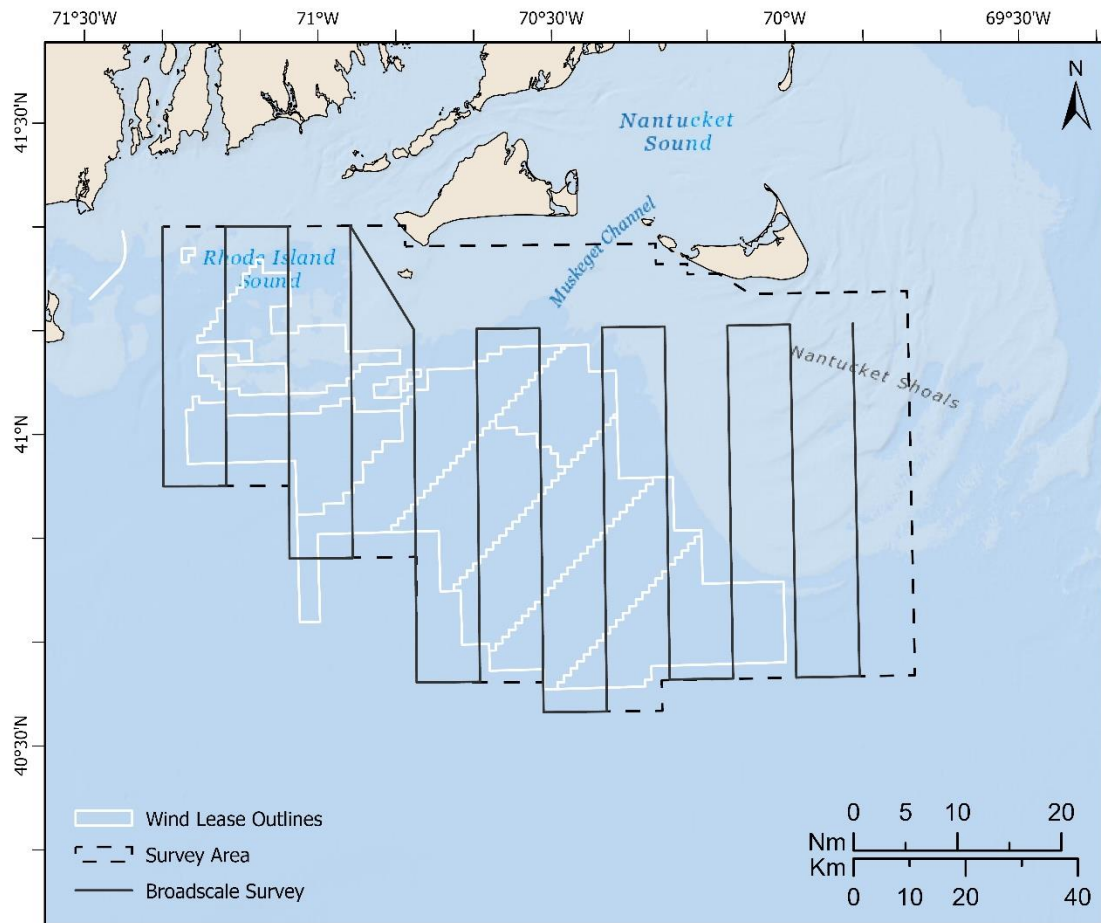


Figure 1. Wind energy areas in the offshore waters of Massachusetts and Rhode Island. Examples of tracklines for a general survey are depicted by black lines. Existing lease areas are depicted in white. Study area depicted by dashed black line.

Aerial surveys began in March 2023 and will continue through December 2023 (“Survey Campaign 8”) with a draft final report to be completed in April 2024. This survey campaign will provide data required by the federal resource agencies to assess the environmental effects associated with offshore wind energy development in the Southern New England WEAs, and will increase understanding of the seasonality, numbers, and distribution of right whales, other large whales, and sea turtles.

The key objectives of the surveys are:

1. Collect line-transect sightings from broad-scale, general surveys (hereafter, general surveys) that can be used to map the distribution of large whales (with a focus on right, sei [*Balaenoptera borealis*], humpback [*Megaptera novaeangliae*], fin [*Balaenoptera physalus*], and minke whales [*Balaenoptera acutorostrata*]) and sea turtles in the study area and estimate their relative abundance.
2. Collect opportunistic observer sightings of other cetaceans, seals, sharks, and fish.
3. Collect digital photography to capture marine mammals, sea turtles, birds, and smaller cryptic species likely to be missed by observers scanning out to 2 nm (e.g., harbor porpoise [*Phocoena phocoena*], sharks, fish and birds), and fixed fishing gear.
4. Conduct condensed, directed, and calibration surveys as needed to obtain fine-scale sightings and effort data, increase sample sizes, and understand the effects of conducting surveys at 1,500 feet, rather than 1,000 feet, which would be necessary during and after turbine construction.
5. Calculate density estimates for species with adequate sample sizes in an area of outer continental shelf federal waters off the coast of Massachusetts using the aerial observers' data. Species of interest include large whales (with a focus on right, humpback, fin and minke whales), common small cetaceans, and sea turtles.

We used the study area, design, and methodology that was previously reviewed and approved by MassCEC and BOEM. Surveys followed appropriate safety and communications protocols. NEAq provided a survey report to all survey partners within 24 hours of each survey. Details of tasks, milestones, and deliverables are provided in Table 1. Four types of line-transect aerial surveys are included in this project plan:

1. General surveys record all types of marine fauna visible from the aircraft. These line-transect surveys cover the entire wind energy area (5,811 km²) and extend slightly beyond the lease area boundaries (Figure 1). They have north-south tracklines that are 6 nm apart. Eight survey options are available: each option shifts all tracklines 0.75 nm east or west, but maintains the 6 nm spacing between tracklines. Survey options were selected at random before each survey. Our goal is to fly these surveys twice a month and we prioritize their completion over flying the other types of surveys. However, we also try to achieve some temporal separation between general surveys to maximize the oceanographic variability captured during each survey. Balancing these objectives may result in our only flying one general survey, if weather conditions change during our survey window.
2. Condensed surveys occur in areas used by aggregations of right whales to better determine demographic, distribution, and behavior patterns in the study area. The tracklines for these surveys are 3 nm apart. Four survey options are available: each option shifts all tracklines 0.75 nm east or west, but maintains the 3 nm spacing between tracklines. The exact number of condensed surveys will be determined as surveys progress. For example, additional condensed surveys may be conducted if aggregations of right whales persist and monthly general surveys are completed in less time than budgeted (e.g., this situation could occur when we have good weather conditions). These surveys may also be flown in between general surveys to achieve temporal separation between general surveys.

3. Directed surveys are flown to respond to aggregations of right whales within the study area. These surveys are coordinated with NOAA Fisheries' Northeast Fisheries Science Center (hereafter, NEFSC). The exact number of directed surveys will be determined as surveys progress, similar to condensed surveys.
4. Calibration surveys are conducted to estimate the effect of changing altitude on our ability to detect different species. Specifically, the same set of tracklines are flown twice during each of these surveys: once at the standard 1,000 feet and once at 1,500 feet. Understanding the effect of changing altitude is important because surveys conducted during turbine construction and operation will need to be flown at 1,500 feet. The timing of these surveys will be selected to maximize the opportunity to complete two general surveys each month and to maximize the expected number of multiple species in the study area for a calibration survey. The exact number of calibration surveys will be determined as surveys progress, similar to condensed and directed surveys.

In addition, NEAq has been concurrently flying additional broadscale surveys and condensed surveys funded under a different contract (the Department of Energy funded Wildlife and Offshore Wind [WOW] project lead by Duke University), and will continue to fly additional surveys through the end of Campaign 8. Because we consider this work additive, we report on all surveys conducted in the study area during the period of performance.

Table 1. Amended Tasks, Milestones, and Deliverables.

Task Number	Description	Milestone/Deliverable	Completion Date
1	Establish and monitor safety protocols for aerial surveys	Contractor COVID-19 protocols Aviation operations and safety practices documentation Updates to COVID-19 or aviation protocols and practices	February 15, 2023 February 15, 2023 Within 14 calendar days of adoption by Contractor
2-A	Conduct March surveys and submit a Daily Summary Report for each survey	Surveys completed Daily Summary Report	March 2023 Within 24 hours of completion of survey
2-B	Conduct April surveys and submit a Daily Summary Report for each survey	Surveys completed Daily Summary Report	April 2023 Within 24 hours of completion of survey
2-C	Conduct May surveys and submit a Daily Summary Report for each survey	Surveys completed Daily Summary Report	May 2023 Within 24 hours of completion of survey
2-D	Conduct June surveys and submit a Daily Summary Report for each survey	Surveys completed Daily Summary Report	June 2023 Within 24 hours of completion of survey
2-E	Conduct July surveys and submit a Daily Summary Report for each survey	Surveys completed Daily Summary Report	July 2023 Within 24 hours of completion of survey
2-F	Conduct August surveys and submit a Daily Summary Report for each survey	Surveys completed Daily Summary Report	August 2023 Within 24 hours of completion of survey
2-G	Conduct September surveys and submit a Daily Summary Report for each survey	Surveys completed Daily Summary Report	September 2023 Within 24 hours of completion of survey
2-H	Conduct October surveys and submit a Daily Summary Report for each survey	Surveys completed Daily Summary Report	October 2023 Within 24 hours of completion of survey
2-I	Conduct November surveys and submit a Daily Summary Report for each survey	Surveys completed Daily Summary Report	November 2023 Within 24 hours of completion of survey
2-J	Conduct December surveys and submit a Daily Summary Report for each survey	Surveys completed Daily Summary Report	December 2023 Within 24 hours of completion of survey
2-H	<u>Optional</u> : Conduct additional month(s) of surveys	Surveys completed Daily Summary Report	To be Determined Within 24 hours of completion of survey
3	Prepare campaign interim report 1	Campaign Interim Report 1	August 30, 2023
4	Perform QA/QC review of survey data	QA/QC survey data	March 31, 2024 *
5	Prepare Final Survey Campaign 8 Report	Draft Report MassCEC and BOEM review period Final Report	April 30, 2024 * June 30, 2024 * July 31, 2024 *
6	Compile survey vertical photography	Hard-drive archive for BOEM Representative pictures for MassCEC	July 31, 2024 * July 31, 2024 *

* Subject to the Term set forth in Section 4, the completion date for these subtasks shall be extended by one (1) month for each additional month of surveys completed pursuant to Task 2-I.

2 Aerial Surveys

2.1 Preliminary Results

In this reporting period, 16 surveys were conducted on 16 days for a total of 13 general trackline surveys, one directed survey, and three condensed trackline surveys for WOW (details in Table 2). Total survey time was 99.2 h and covered 16,032.8 kilometers (km).

Table 2. Summary of aerial survey effort conducted in the study area offshore of Massachusetts and Rhode Island in 2023. Note: W = west, E = east, km = kilometers, NA = not applicable.

Month	Day	Year	Survey Type	Airtime hours	km	Direction	Option
March	10	2023	General	7.1	963.6	W → E	8
March	17	2023	Directed	5.2	732.1	W → E	NA
March	21	2023	General	7.0	933.2	E → W	5
April	14	2023	General	8.1	1,185.3	W → E	2
April	20	2023	General	7.3	1,173.4	W → E	1
May	15	2023	General	4.3	718.2	W → E	1
May	18	2023	General	6.7	1,101.6	W → E	7
May	21	2023	General	5.6	921.6	W → E	8
June	11	2023	General	7.3	1,356.6	W → E	6
June	16	2023	General	6.7	1,126.9	W → E	4
June	19	2023	Condensed	6.1	1,152.3	W → E	NA
June	23	2023	General	3.0	522.7	W → E	5
July	22	2023	General	5.4	983.0	W → E	2
July	23	2023	General + Cond	6.7	1,074.2	W → E	2
July	25	2023	General	7.5	1,195.6	W → E	7
July	30	2023	Condensed	5.2	892.5	E → W	NA

2.2 Survey date: March 10, 2023

Aircraft take off occurred from New Bedford Regional Airport at 0926 h. Survey conditions were clear, visibility was 5 nm, wind ranged from 4-10 knots from the SW, and Beaufort Sea State ranged from 2-4. This survey lasted 7.1 h and covered ten general survey tracklines. A total of 29 sightings of marine fauna were recorded by observers (Table 3). Survey tracklines and observer sightings are shown in Figure 2. A sample photograph from this survey can be seen in Figure 3.

Table 3: Species sighted by observers during the March 10th aerial survey.

Species	Number of sightings	Number of individuals
Common dolphin (<i>Delphinus delphis</i>)	5	109
Fin whale (<i>Balaenoptera physalus</i>)	3	4
Gray seal (<i>Halichoerus grypus</i>)	2	351
Minke whale (<i>Balaenoptera acutorostrata</i>)	2	2
North Atlantic right whale (<i>Eubalaena glacialis</i>)	11	22
Unidentified dolphin/porpoise	5	12
Unidentified seal	1	1

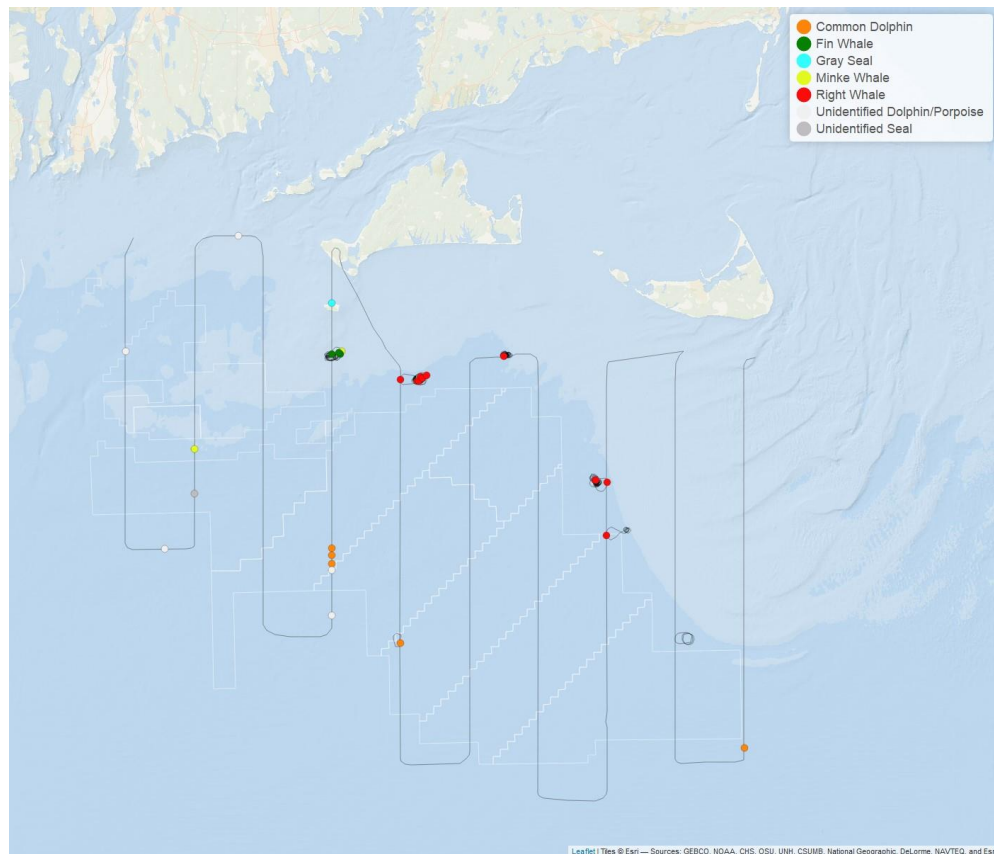


Figure 2. Marine mammal sightings and tracklines from a general survey conducted on March 10th in the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy lease sites.



Figure 3. Five right whales observed in a surface active group during the March 10th aerial survey. Right whale photos taken under NOAA Permit #25739.

2.3 Survey date: March 17, 2023

Aircraft take off occurred from New Bedford Airport at 0814 h. Survey conditions were clear, visibility was 5 nm, wind speed was 4 knots from the ESE, and Beaufort Sea State ranged from 3-4. This survey lasted 5.2 h and covered six directed tracklines. A total of 32 sightings of marine fauna were recorded by observers (Table 4). Survey tracklines and observer sightings are shown in Figure 4.

Table 4. Species sighted by observers during the March 17th aerial survey.

Species	Number of sightings	Number of individuals
Humpback whale (<i>Megaptera novaeangliae</i>)	4	7
North Atlantic right whale (<i>Eubalaena glacialis</i>)	27	29
Unidentified seal	1	1

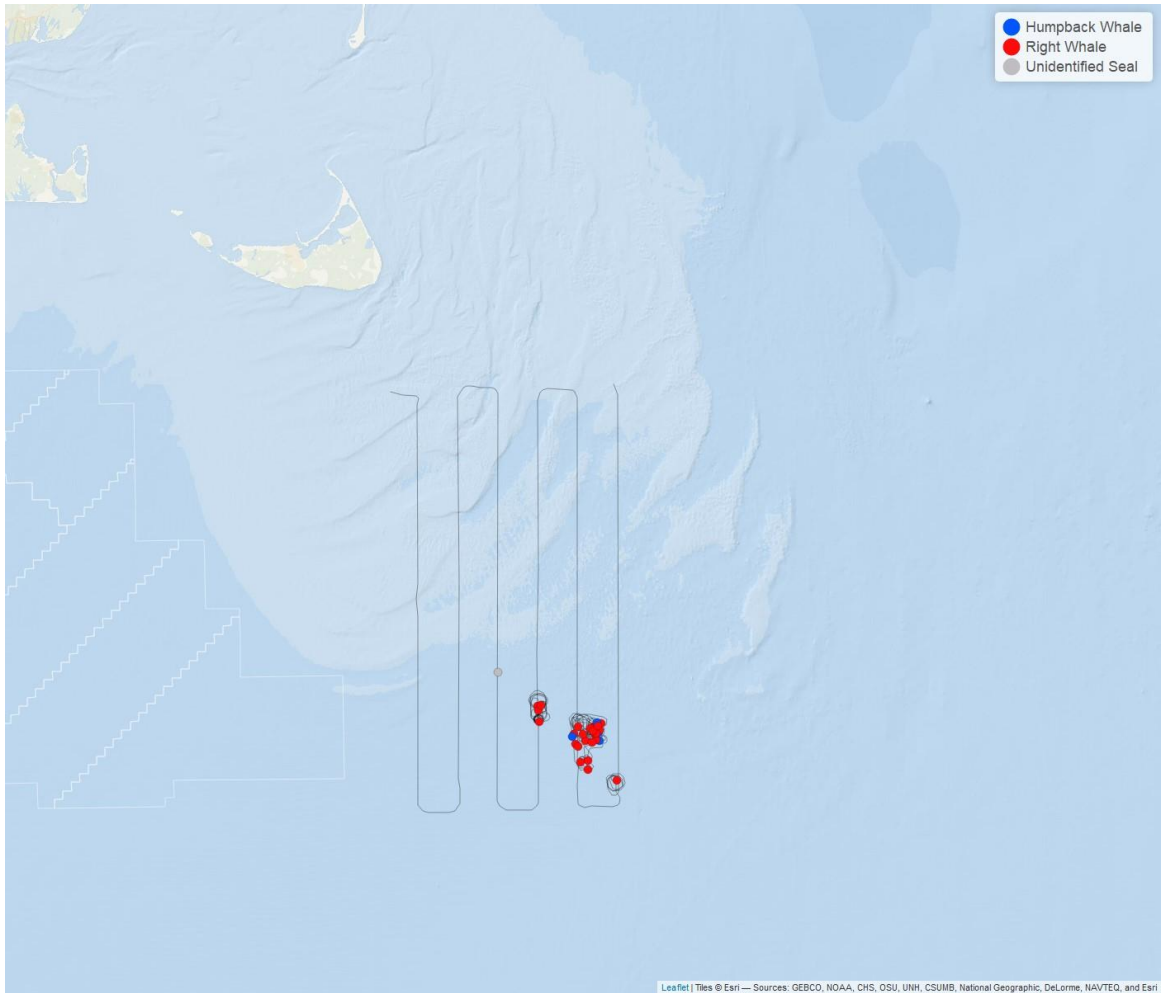


Figure 4. Marine mammal sightings and tracklines from a directed survey conducted on March 17th south of Nantucket. White outlines represent the offshore wind energy area lease sites.

2.4 Survey date: March 21, 2023

Aircraft take off occurred from New Bedford Regional Airport at 0808 h. Survey conditions were hazy, visibility was 5 nm, wind ranged from 6-10 knots from the WSW, and Beaufort Sea State ranged from 3-5. This survey lasted 7.0 h and covered eight general survey tracklines. A total of 44 sightings of marine fauna were recorded by observers (Table 5). Survey tracklines and observer sightings are shown in Figure 5. A sample photograph from this survey can be seen in Figure 6.

Table 5. Species sighted by observers during the March 21st aerial survey.

Species	Number of sightings	Number of individuals
Gray seal (<i>Halichoerus grypus</i>)	2	601
North Atlantic right whale (<i>Eubalaena glacialis</i>)	36	37
Unidentified dolphin/porpoise	5	13
Unidentified seal	1	1

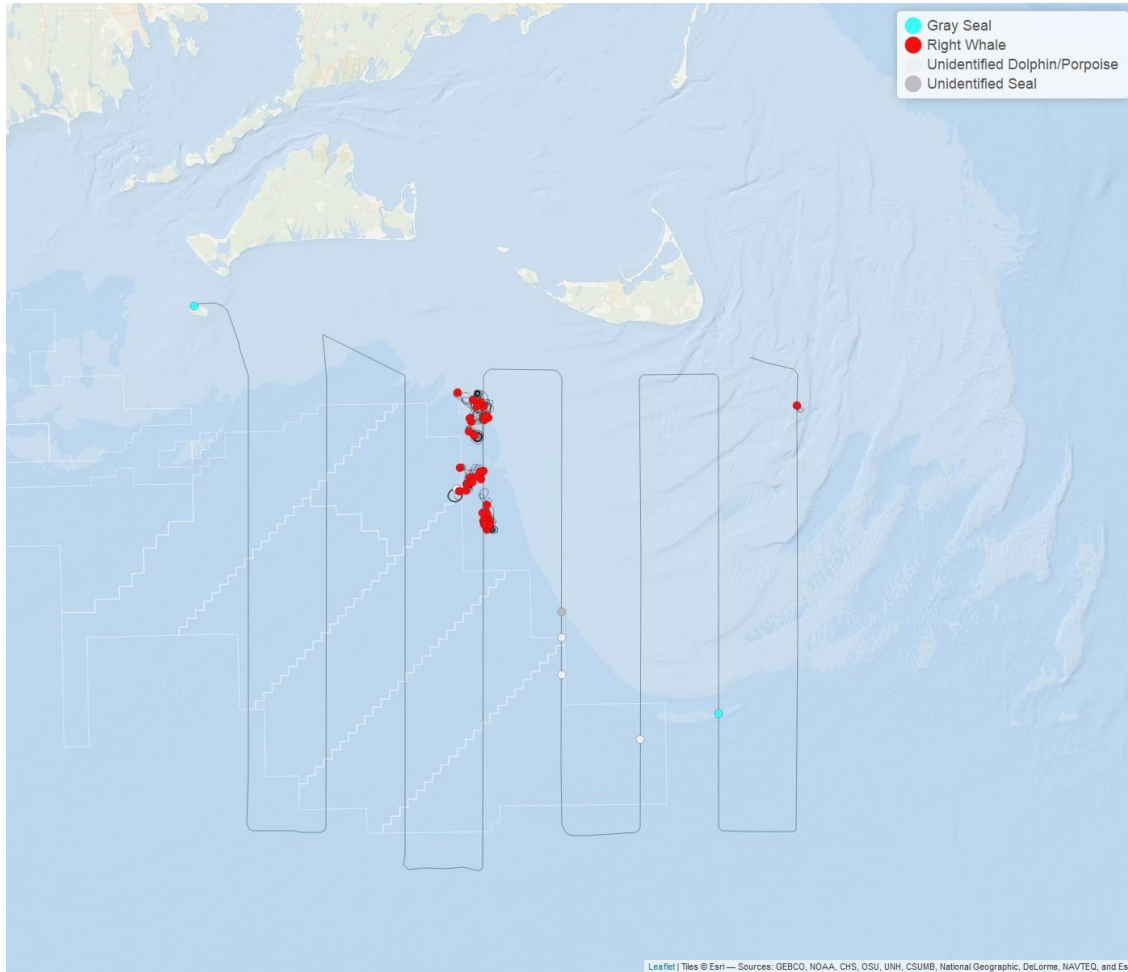


Figure 5. Marine mammal sightings and tracklines from a general survey conducted on March 21st in the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy area lease sites.



Figure 6. Right whale Catalog #3623 (“Bongo”) and Catalog #3940 (“Koala”) observed in a surface active group during the March 21st aerial survey. Right whale photos taken under NOAA Permit #25739.

2.5 Survey date: April 14, 2023

Aircraft take off occurred from New Bedford Regional Airport at 0907 h. Survey conditions were clear to hazy, visibility was 5 nm, wind ranged from 4-6 knots from the WSW, and Beaufort Sea State ranged from 2-4. This survey lasted 8.1 h and covered 12 general survey tracklines. A total of 53 sightings of marine fauna were recorded by observers (Table 6). Survey tracklines and observer sightings are shown in Figure 7. A sample photograph from this survey can be seen in Figure 8.

Table 6. Species sighted by observers during the April 14th aerial survey.

Species	Number of sightings	Number of individuals
Common dolphin (<i>Delphinus delphis</i>)	2	18
Fin whale (<i>Balaenoptera physalus</i>)	1	1
Gray seal (<i>Halichoerus grypus</i>)	8	807
Harbor porpoise (<i>Phocoena phocoena</i>)	2	2
Minke whale (<i>Balaenoptera acutorostrata</i>)	4	4
North Atlantic right whale (<i>Eubalaena glacialis</i>)	15	16
Sei whale (<i>Balaenoptera borealis</i>)	7	8
Unidentified dolphin/porpoise	6	21
Unidentified seal	8	9

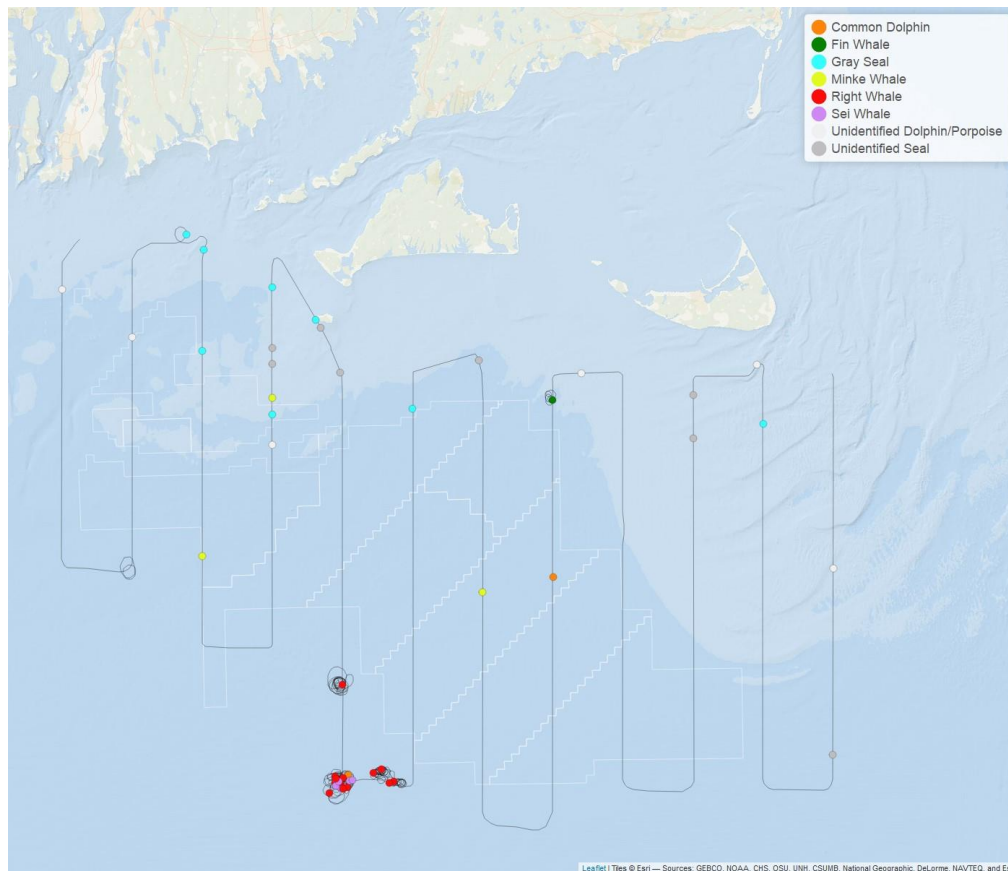


Figure 7. Marine mammal sightings and tracklines from a general survey conducted on April 14th in the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy area lease sites.



Figure 8. Right whales Catalog #1250 (“Herb”) and Catalog #2950 observed subsurface feeding during the April 14th aerial survey. Right whale photos taken under NOAA Permit #25739.

2.6 Survey date: April 20, 2023

Aircraft take off occurred from New Bedford Regional Airport at 0919 h. Survey conditions were clear, visibility was 5 nm, wind ranged from 8-10 knots from the W, and Beaufort Sea State ranged from 2-4. This survey lasted 7.3 h and covered 12 general survey tracklines. A total of 19 sightings of marine fauna were recorded by observers (Table 7). Survey tracklines and observer sightings are shown in Figure 9.

Table 7. Species sighted by observers during the April 20th aerial survey.

Species	Number of sightings	Number of individuals
Basking shark (<i>Cetorhinus maximus</i>)	2	2
Fin whale (<i>Balaenoptera physalus</i>)	2	2
Gray seal (<i>Halichoerus grypus</i>)	1	300
Humpback whale (<i>Megaptera novaeangliae</i>)	1	1
Minke whale (<i>Balaenoptera acutorostrata</i>)	3	3
North Atlantic right whale (<i>Eubalaena glacialis</i>)	6	7
Unidentified dolphin/porpoise	3	5
Unidentified seal	1	1

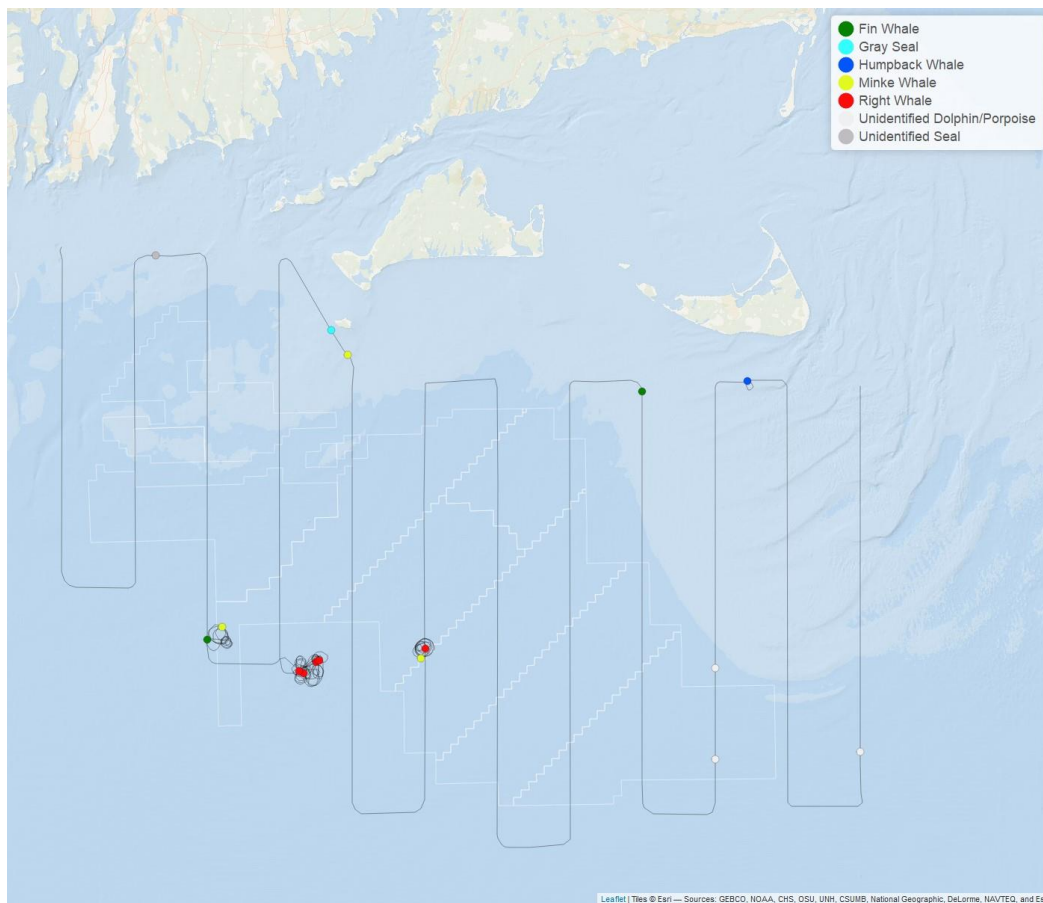


Figure 9. Marine mammal sightings and tracklines from a general survey conducted on April 20th in the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy area lease sites.

2.7 Survey date: May 15, 2023

Aircraft take off occurred from New Bedford Regional Airport at 0837 h. Survey conditions were clear to hazy, visibility was 5 nm, wind was 13 knots from the S, and Beaufort Sea State ranged from 3-4. This survey lasted 4.3 h and covered eight general survey tracklines. A total of seven sightings of marine fauna were recorded by observers (Table 8). Survey tracklines and observer sightings are shown in Figure 10.

Table 8. Species sighted by observers during the May 15th aerial survey.

Species	Number of sightings	Number of individuals
Basking shark (<i>Cetorhinus maximus</i>)	1	1
Bottlenose dolphin (<i>Tursiops truncatus</i>)	1	10
Common dolphin (<i>Delphinus delphis</i>)	1	20
Fin whale (<i>Balaenoptera physalus</i>)	1	1
Minke whale (<i>Balaenoptera acutorostrata</i>)	2	2
Unidentified dolphin/porpoise	1	12

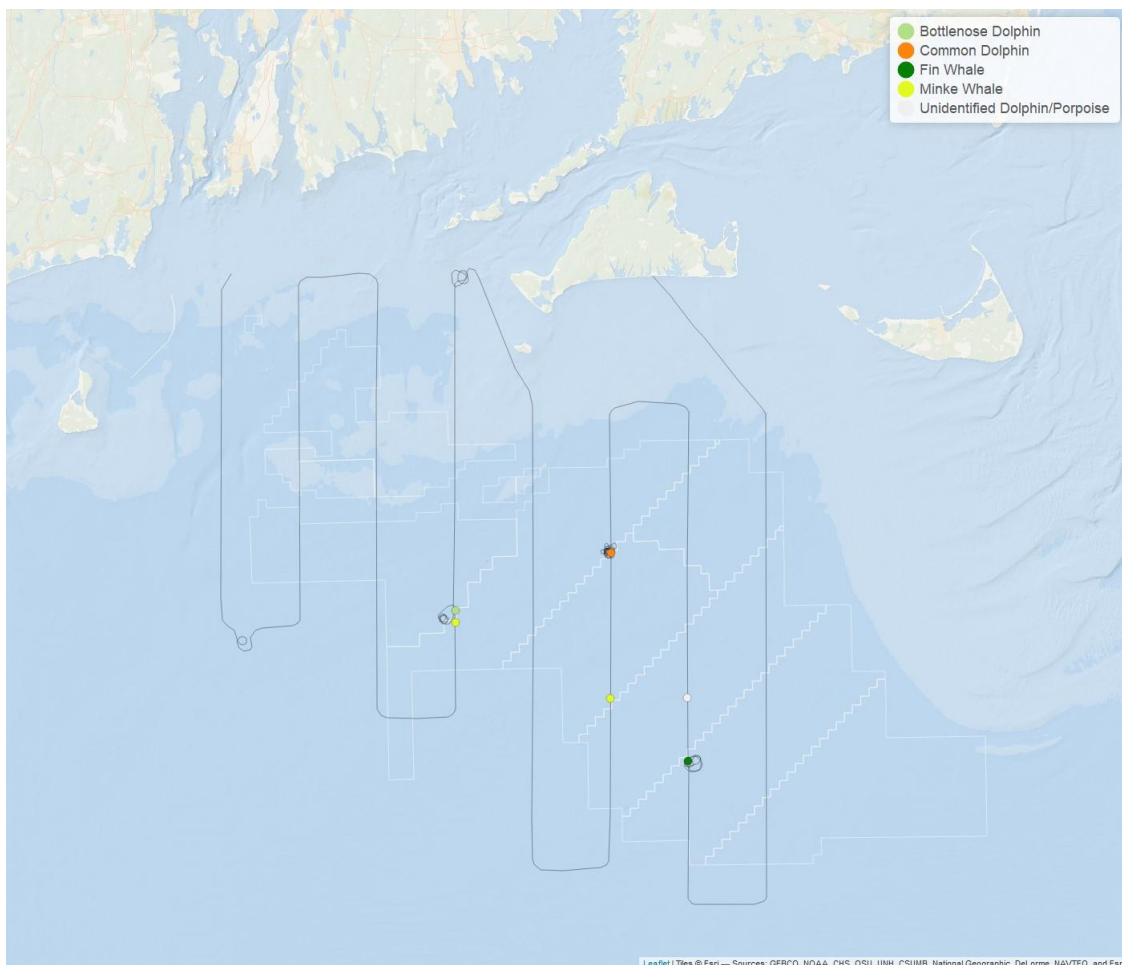


Figure 10. Marine mammal sightings and tracklines from a general survey conducted on May 15th the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy area lease sites.

2.8 Survey date: May 18, 2023

Aircraft take off occurred from New Bedford Regional Airport at 0910 h. Survey conditions were clear, visibility was 5 nm, wind was 6 knots from the N, and Beaufort Sea State ranged from 1-4. This survey lasted 6.7 h and covered 12 general survey tracklines. A total of 42 sightings of marine fauna were recorded by observers (Table 9). Survey tracklines and observer sightings are shown in Figure 11.

Table 9. Species sighted by observers during the May 18th aerial survey.

Species	Number of sightings	Number of individuals
Basking shark (<i>Cetorhinus maximus</i>)	11	11
Bottlenose dolphin (<i>Tursiops truncatus</i>)	2	36
Common dolphin (<i>Delphinus delphis</i>)	3	213
Fin whale (<i>Balaenoptera physalus</i>)	9	10
Humpback whale (<i>Megaptera novaeangliae</i>)	3	3
Minke whale (<i>Balaenoptera acutorostrata</i>)	9	9
Ocean sunfish (<i>Mola mola</i>)	1	1
Unidentified dolphin/porpoise	4	15

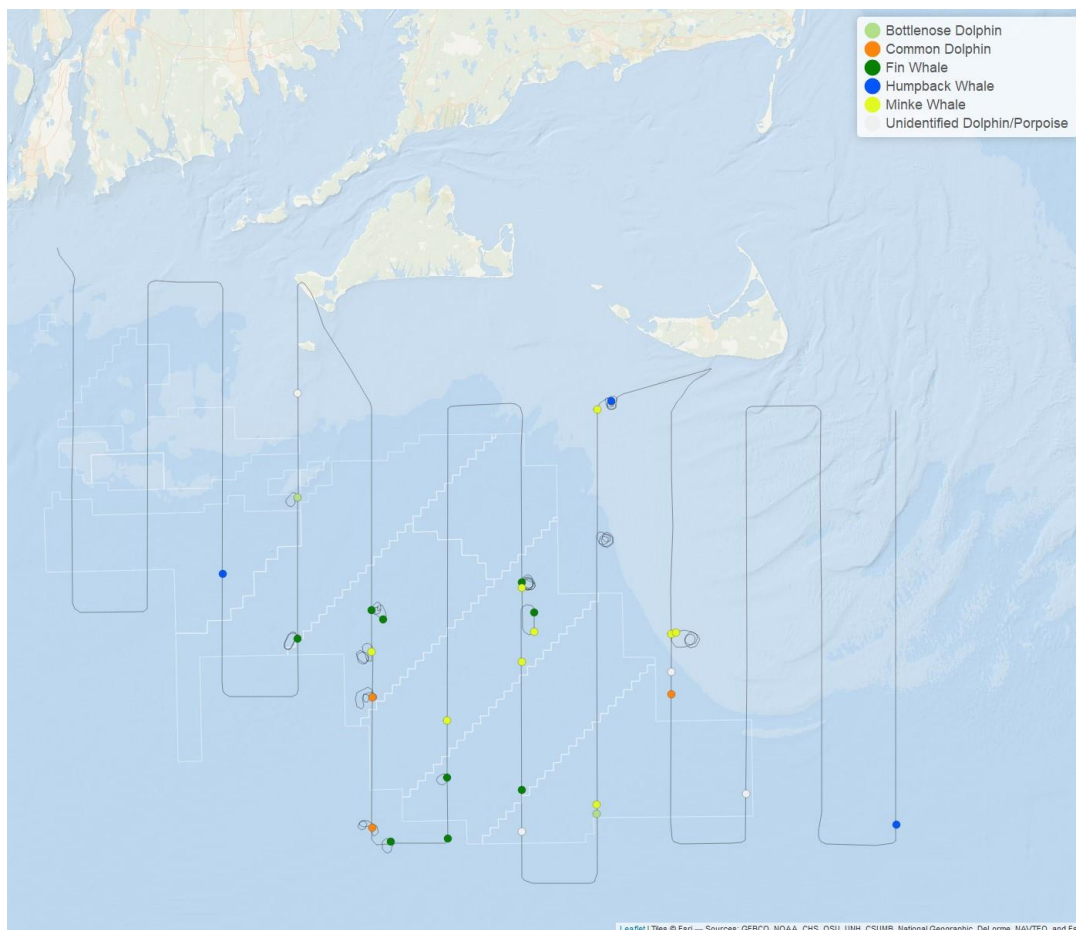


Figure 11. Marine mammal sightings and tracklines from a general survey conducted on May 18th in the study area offshore of Massachusetts and Rhode. White outlines represent the offshore wind energy area lease sites.

2.9 Survey date: May 21, 2023

Aircraft take off occurred from New Bedford Regional Airport at 1202 h. Survey conditions were hazy; visibility ranged from 4-5 nm, wind ranged from 10-12 knots from the W, and Beaufort Sea State ranged from 3-4. This survey lasted 5.6 h and covered ten general survey tracklines. A total of 15 sightings of marine fauna were recorded by observers (Table 10). Survey tracklines and observer sightings are shown in Figure 12. A sample photograph from this survey can be seen in Figure 13.

Table 10. Species sighted by observers during the May 21st aerial survey.

Species	Number of sightings	Number of individuals
Common dolphin (<i>Delphinus delphis</i>)	1	10
Fin whale (<i>Balaenoptera physalus</i>)	7	8
Gray seal (<i>Halichoerus grypus</i>)	1	60
Humpback whale (<i>Megaptera novaeangliae</i>)	4	6
Minke whale (<i>Balaenoptera acutorostrata</i>)	1	1
Unidentified large whale	1	1

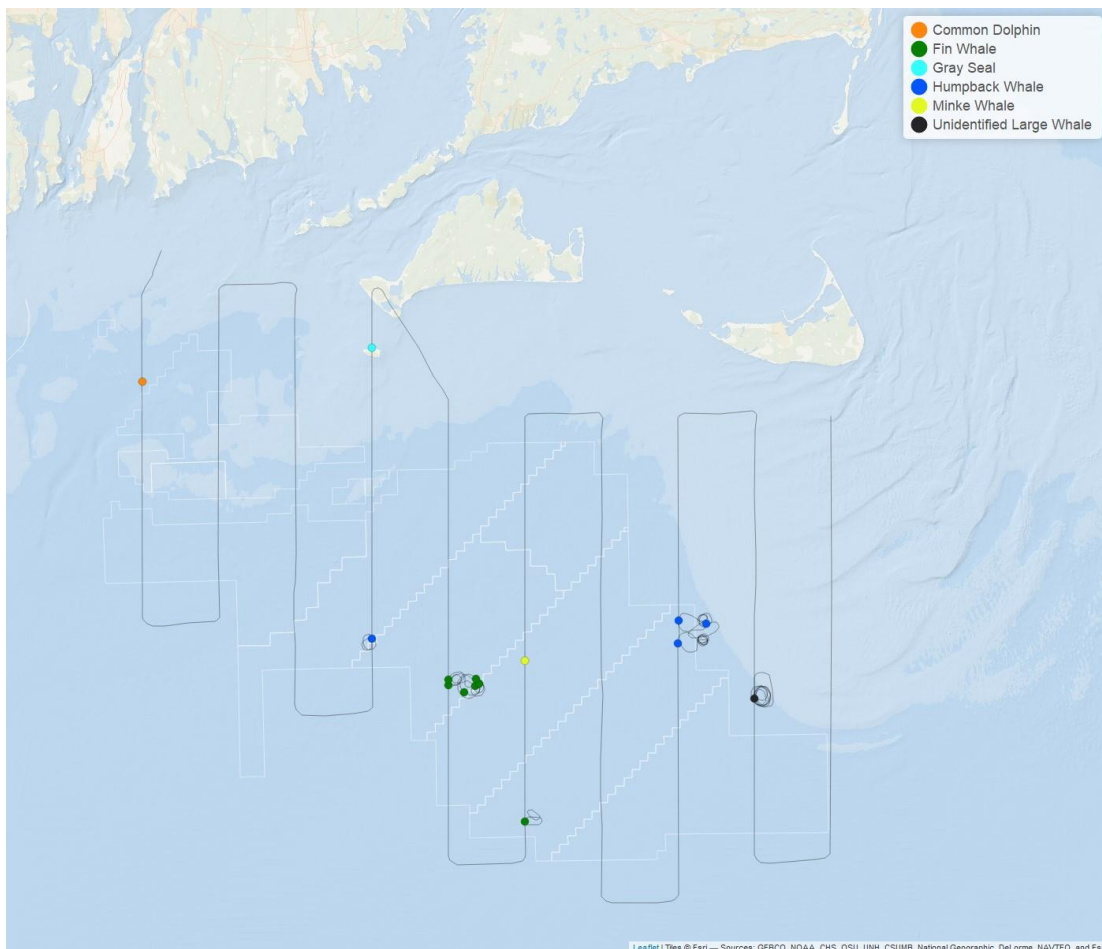


Figure 12. Marine mammal sightings and tracklines from a general survey conducted on May 21st in the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy area lease sites.



Figure 13. Two humpback whales observed bubble feeding during the May 21st aerial survey.

2.10 Survey date: June 11, 2023

Aircraft take off occurred from New Bedford Regional Airport at 0925 h. Survey conditions were hazy, visibility was 4-5 nm, wind ranged from 2-4 knots SE to 6-8 knots S, and Beaufort Sea State ranged from 1-2. This survey lasted 7.3 h and covered 12 general survey tracklines. A total of 56 sightings of marine fauna were recorded by observers (Table 11). Survey tracklines and observer sightings are shown in Figure 14. Sample photographs from this survey can be seen in Figures 15 and 16.

Table 11. Species sighted by observers during the June 11th aerial survey.

Species	Number of sightings	Number of individuals
Basking shark (<i>Cetorhinus maximus</i>)	2	2
Bottlenose dolphin (<i>Tursiops truncatus</i>)	4	62
Common dolphin (<i>Delphinus delphis</i>)	1	4
Fin whale (<i>Balaenoptera physalus</i>)	16	23
Humpback whale (<i>Megaptera novaeangliae</i>)	8	20
Killer whale (<i>Orcinus orca</i>)	1	4
Minke whale (<i>Balaenoptera acutorostrata</i>)	5	5
Ocean sunfish (<i>Mola mola</i>)	11	12
Unidentified dolphin	7	29
Unidentified shark	1	1

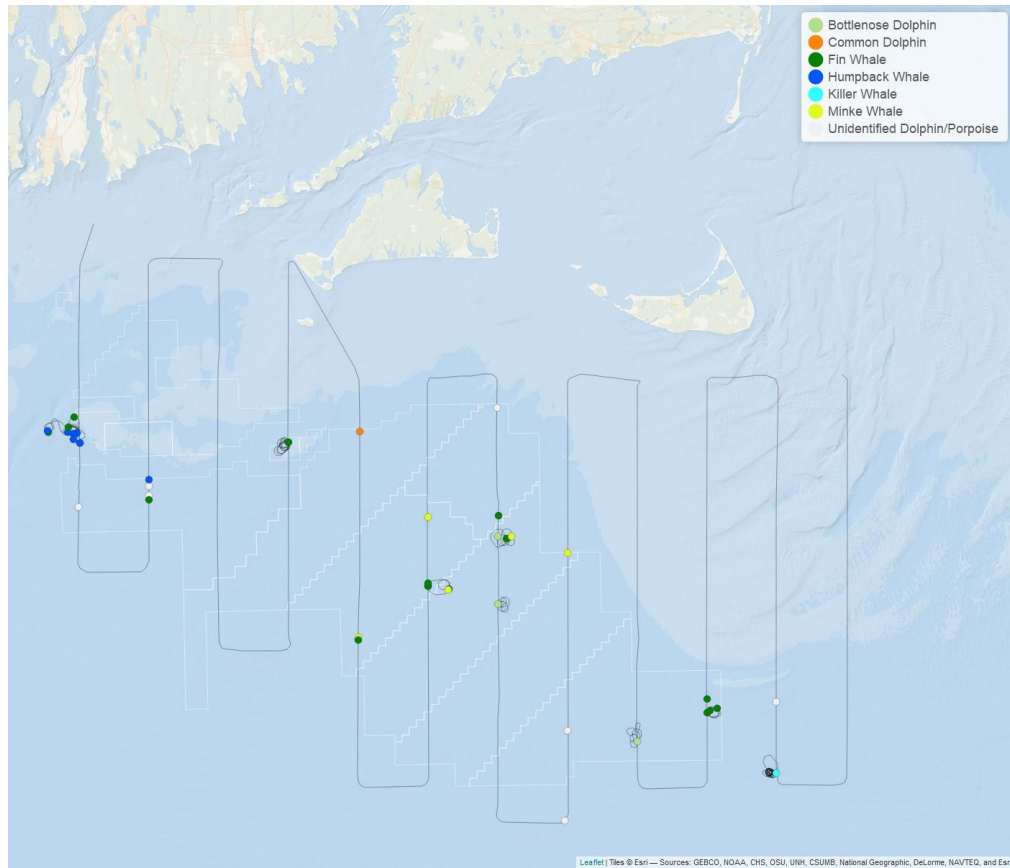


Figure 14. Marine mammal sightings and tracklines from a general survey conducted on June 11th in the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy area lease sites.

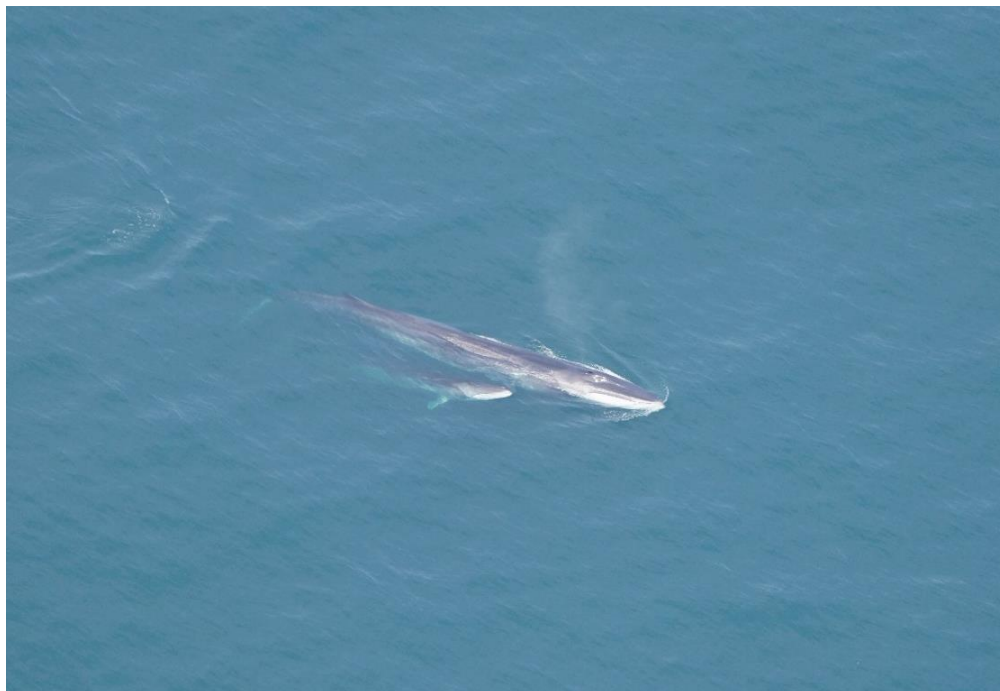


Figure 15: A fin whale mother-calf pair observed during the June 11th aerial survey.



Figure 16: A pod of four killer whales observed during the June 11th aerial survey.

2.11 Survey date: June 16, 2023

Aircraft take off occurred from New Bedford Regional Airport at 0908 h. Survey conditions were hazy, visibility was 5 nm, wind ranged from 6-8 knots from the W to 12 - 14 knots from the S, and Beaufort Sea State ranged from 2 - 3. This survey lasted 6.7 h and covered 12 general survey tracklines. A total of 51 sightings of marine fauna were recorded by observers (Table 12). Survey tracklines and observer sightings are shown in Figure 17.

Table 12. Species sighted by observers during the June 16th aerial survey.

Species	Number of sightings	Number of individuals
Basking shark (<i>Cetorhinus maximus</i>)	1	1
Bottlenose dolphin (<i>Tursiops truncatus</i>)	6	94
Fin whale (<i>Balaenoptera physalus</i>)	17	17
Humpback whale (<i>Megaptera novaeangliae</i>)	13	17
Minke whale (<i>Balaenoptera acutorostrata</i>)	5	5
Ocean sunfish (<i>Mola mola</i>)	3	3
Unidentified dolphin	6	39

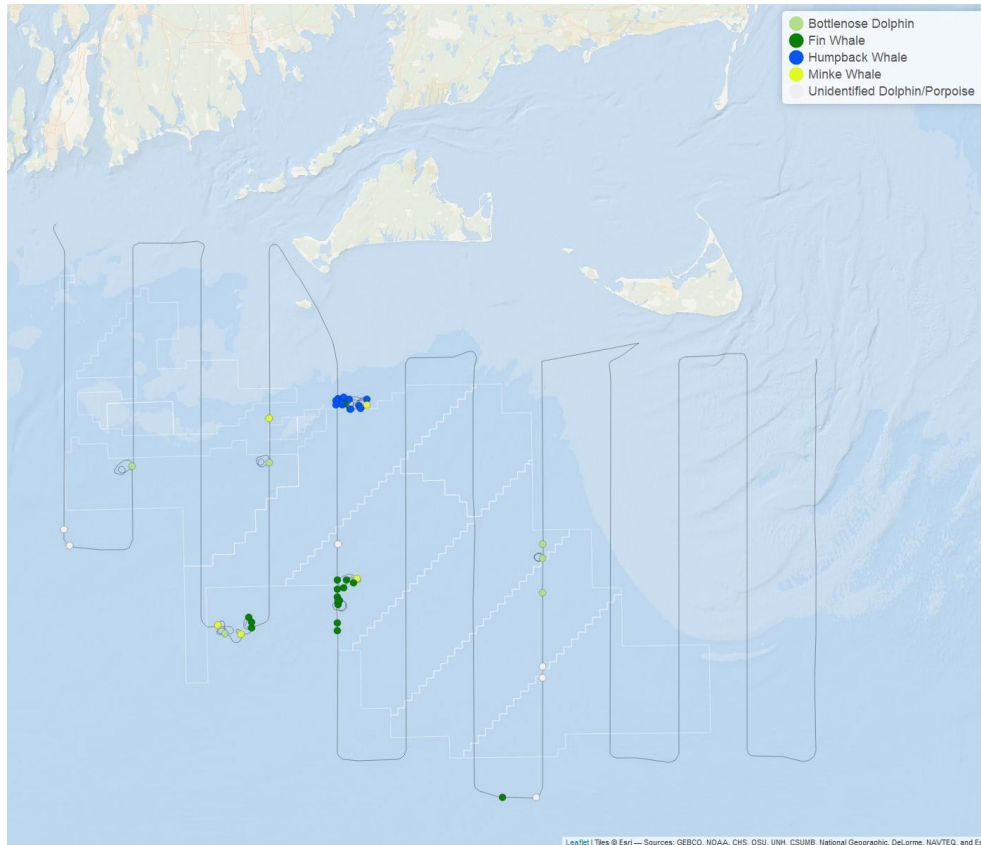


Figure 17. Marine mammal sightings and tracklines from a general survey conducted on June 16th in the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy area lease sites.

2.12 Survey date: June 19, 2023

Aircraft take off occurred from New Bedford Regional Airport at 0844 h. Survey conditions ranged from clear to patchy fog, visibility was 3 - 5 nm, wind ranged from 6 - 8 knots from the ESE to 10 - 12 knots from the E, and Beaufort Sea State ranged from 2 - 4. This survey lasted 6.1 h and covered 14 condensed survey tracklines. A total of 35 sightings of marine fauna were recorded by observers (Table 13). Survey tracklines and observer sightings are shown in Figure 18.

Table 13. Species sighted by observers during the June 19th aerial survey. Note: only the number of groups were recorded for schools of tuna.

Species	Number of sightings	Number of individuals
Bluefin tuna (<i>Thunnus thynnus</i>)	1	-
Bottlenose dolphin (<i>Tursiops truncatus</i>)	2	32
Fin whale (<i>Balaenoptera physalus</i>)	12	12
Humpback whale (<i>Megaptera novaeangliae</i>)	4	4
Minke whale (<i>Balaenoptera acutorostrata</i>)	2	2
Ocean sunfish (<i>Mola mola</i>)	1	1
Unidentified dolphin	2	13
Unidentified tuna	10	-

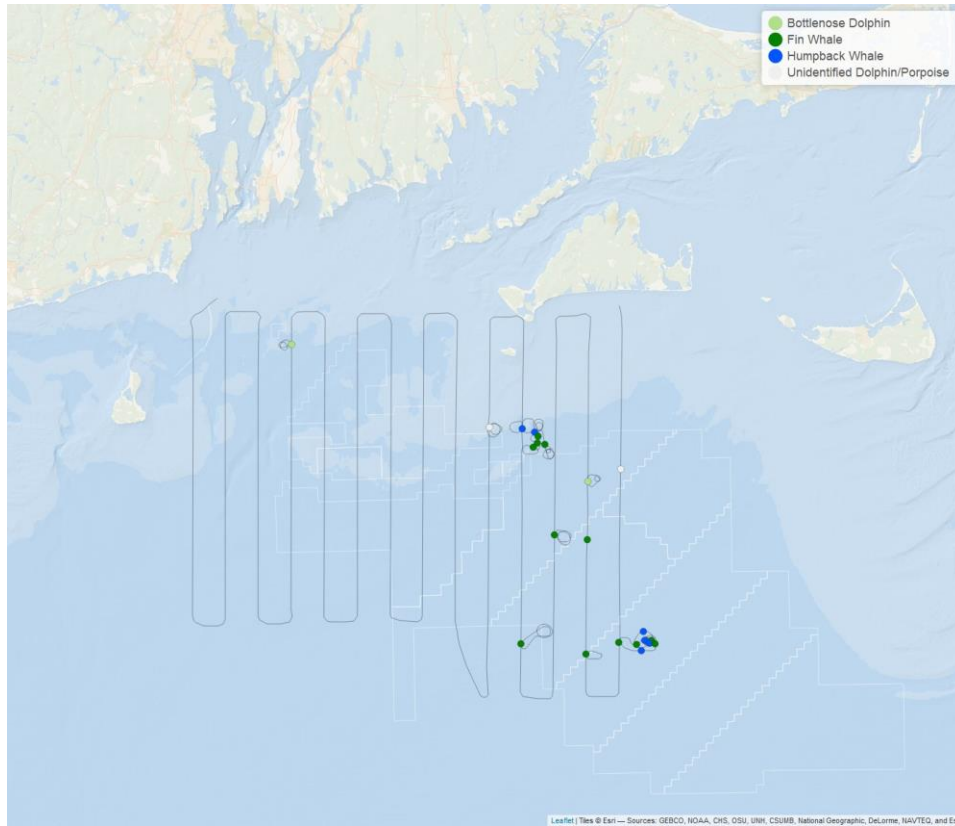


Figure 18. Marine mammal sightings and tracklines from a condensed survey for project WOW conducted on June 19th in the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy area lease sites.

2.13 Survey date: June 23, 2023

Aircraft take off occurred from New Bedford Regional Airport at 1209 h. Survey conditions were clear to patchy fog to fog, visibility was 1 - 5 nm, wind ranged from 6 knots from the NNW to 8 knots from the SSW, and Beaufort Sea State was 2. This survey lasted 3.0 h and covered five partial general survey tracklines due to widespread fog in the survey area. A total of 22 sightings of marine fauna were recorded by observers (Table 14). Survey tracklines and observer sightings are shown in Figure 19.

Table 14. Species sighted by observers during the June 23rd aerial survey.

Species	Number of sightings	Number of individuals
Blue Shark (<i>Prionace glauca</i>)	1	1
Bottlenose dolphin (<i>Tursiops truncatus</i>)	3	30
Common dolphin (<i>Delphinus delphis</i>)	1	200
Fin whale (<i>Balaenoptera physalus</i>)	9	11
Minke whale (<i>Balaenoptera acutorostrata</i>)	2	2
Ocean sunfish (<i>Mola mola</i>)	1	1
Unidentified dolphin	3	23
Unidentified shark	2	2

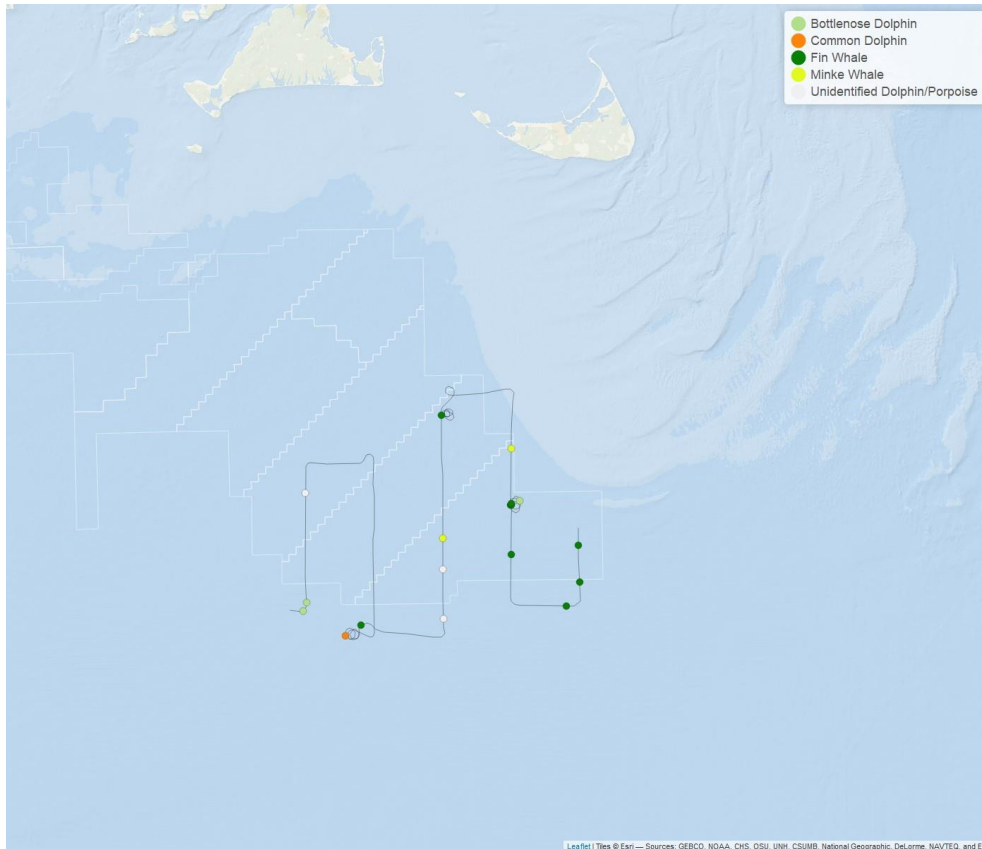


Figure 19. Marine mammal sightings and tracklines from a partial general survey conducted on June 23rd in the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy area lease sites.

2.14 Survey date: July 22, 2023

Aircraft take off occurred from New Bedford Regional Airport at 1311 h. Survey conditions were clear, visibility was 5 nm, wind ranged from 2-4 knots from the SE, and Beaufort Sea State ranged from 2 - 3. This survey lasted 5.4 h and covered eight general survey tracklines. The remaining four tracklines were not completed due to daylight constraints. A total of 92 sightings of marine fauna were recorded by observers (Table 15). Survey tracklines and observer sightings are shown in Figure 20.

Table 15. Species sighted by observers during the July 22nd aerial survey.

Species	Number of sightings	Number of individuals
Bottlenose dolphin (<i>Tursiops truncatus</i>)	6	245
Common dolphin (<i>Delphinus delphis</i>)	19	546
Fin whale (<i>Balaenoptera physalus</i>)	29	34
Humpback whale (<i>Megaptera novaeangliae</i>)	22	33
Minke whale (<i>Balaenoptera acutorostrata</i>)	7	7
Unidentified dolphin	9	91

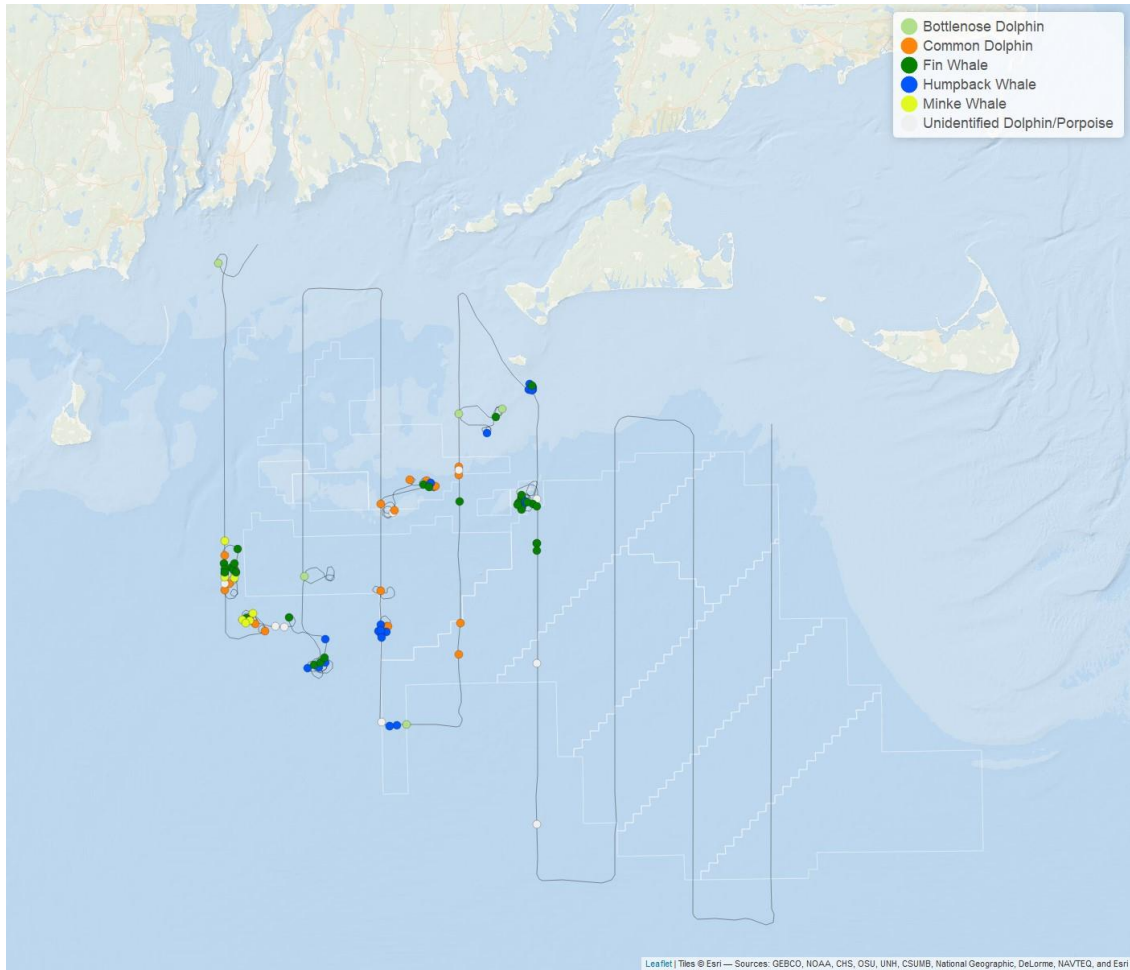


Figure 20. Marine mammal sightings and tracklines from a general survey conducted on July 22nd in the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy area lease sites.

2.15 Survey date: July 23, 2023

Aircraft take off occurred from New Bedford Regional Airport at 0911 h. Survey conditions were hazy, visibility was 5 nm, wind ranged from 12 - 14 knots from the N to 8-10 knots from the SE, and Beaufort Sea State ranged from 1 - 2. This survey lasted 6.7 h and covered eight condensed tracklines, and the four general survey tracklines remaining from the July 22nd survey. A total of 121 sightings of marine fauna were recorded by observers (Table 16). Survey tracklines and observer sightings are shown in Figure 21. Sample photographs from this survey can be seen in Figures 22 and 23.

Table 16. Species sighted by observers during the July 23rd aerial survey.

Species	Number of sightings	Number of individuals
Basking shark (<i>Cetorhinus maximus</i>)	1	1
Blue shark (<i>Prionace glauca</i>)	4	4
Bottlenose dolphin (<i>Tursiops truncatus</i>)	13	515
Common dolphin (<i>Delphinus delphis</i>)	10	590
Fin whale (<i>Balaenoptera physalus</i>)	8	12
Hammerhead shark (<i>Sphyrna</i> sp.)	1	1
Humpback whale (<i>Megaptera novaeangliae</i>)	7	17
Minke whale (<i>Balaenoptera acutorostrata</i>)	5	5
Ocean sunfish (<i>Mola mola</i>)	5	5
Risso's dolphin (<i>Grampus griseus</i>)	2	18
Unidentified dolphin	5	26
Unidentified large whale	1	3
Unidentified seal	3	3
Unidentified shark	51	60
White shark (<i>Carcharodon carcharias</i>)	6	6

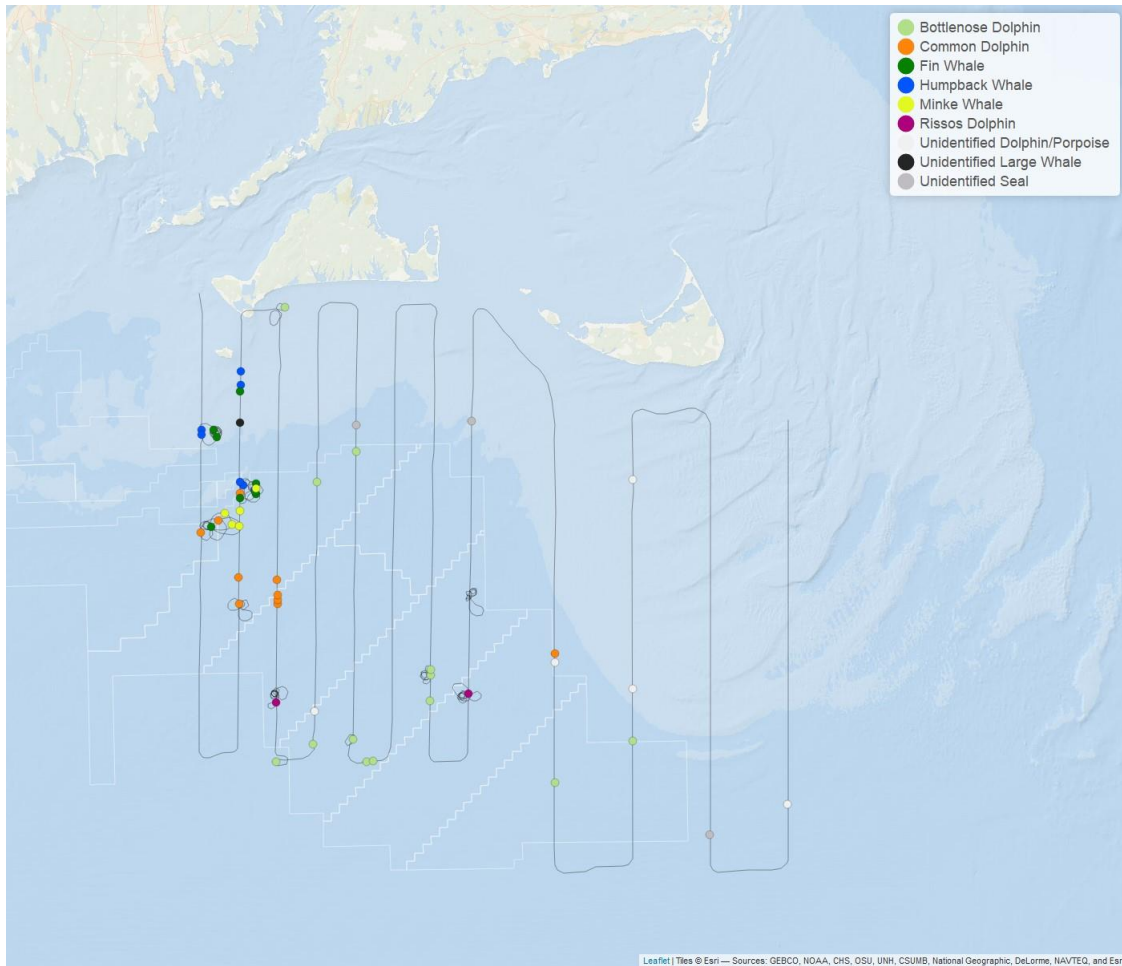


Figure 21. Marine mammal sightings and tracklines from a condensed survey for project WOW and partial general survey conducted on July 23rd in the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy area lease sites.



Figure 22. A humpback whale mother-calf pair observed during the July 23rd survey.

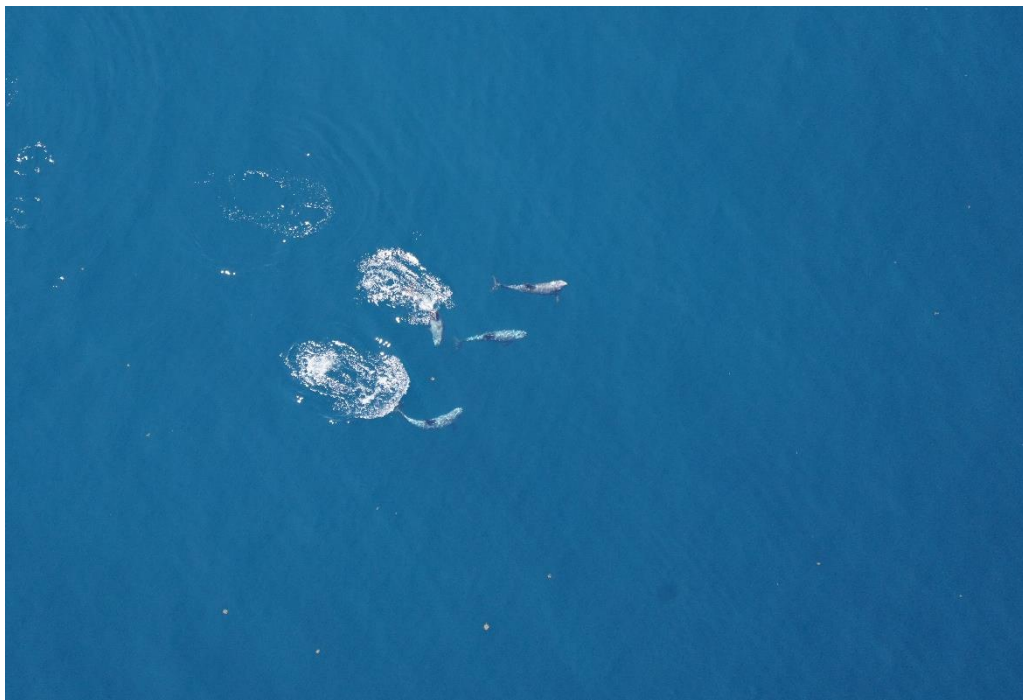


Figure 23. A small pod of Risso's dolphins observed during the July 23rd aerial survey.

2.16 Survey date: July 25, 2023

Aircraft take off occurred from New Bedford Regional Airport at 0922 h. Survey conditions ranged from clear to hazy to patchy fog, visibility was 3 - 5 nm, wind ranged from 8 – 16 knots S, and Beaufort Sea State ranged from 1 - 2. This survey lasted 7.5 h and covered 12 general survey tracklines. A total of 178 sightings of marine fauna were recorded by observers (Table 17). Survey tracklines and observer sightings are shown in Figure 24. A sample photograph from this survey can be seen in Figure 25.

Table 17. Species sighted by observers during the July 25th aerial survey. Note: only the number of groups was recorded for schools of tuna.

Species	Number of sightings	Number of individuals
Bluefin tuna (<i>Thunnus thynnus</i>)	1	-
Bottlenose dolphin (<i>Tursiops truncatus</i>)	3	15
Common dolphin (<i>Delphinus delphis</i>)	21	1,349
Fin whale (<i>Balaenoptera physalus</i>)	22	35
Hammerhead shark (<i>Sphyrna</i> sp.)	26	30
Humpback whale (<i>Megaptera novaeangliae</i>)	33	44
Leatherback sea turtle (<i>Dermochelys coriacea</i>)	1	1
Minke whale (<i>Balaenoptera acutorostrata</i>)	13	13
Risso's dolphin (<i>Grampus griseus</i>)	1	10
Unidentified shark	51	83
Unidentified tuna	5	-

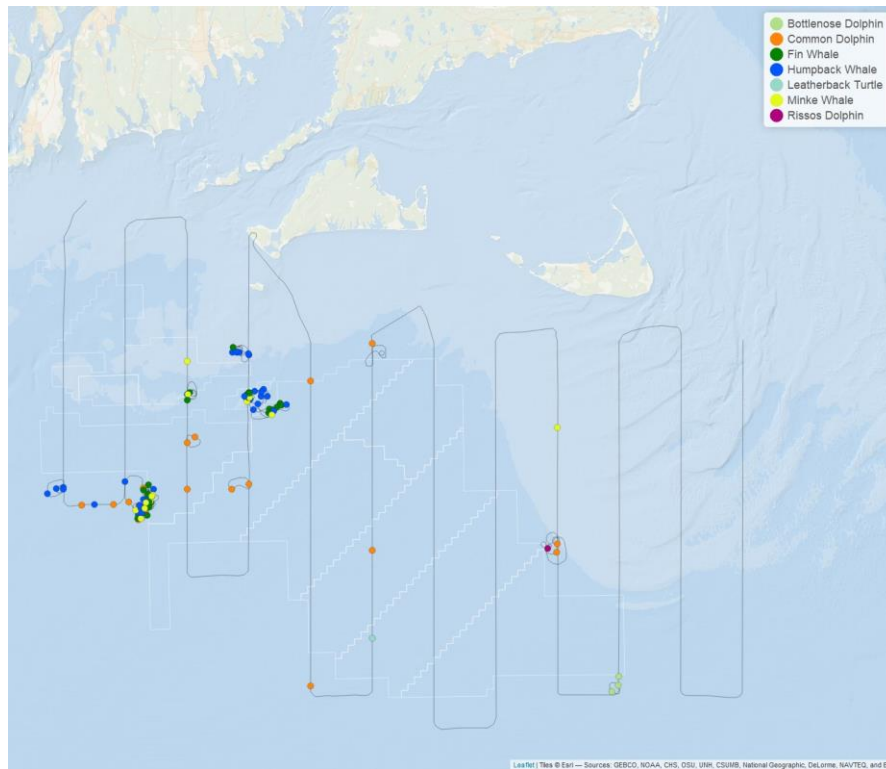


Figure 24. Marine mammal sightings and tracklines from a general survey conducted on July 25th in the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy area lease sites.

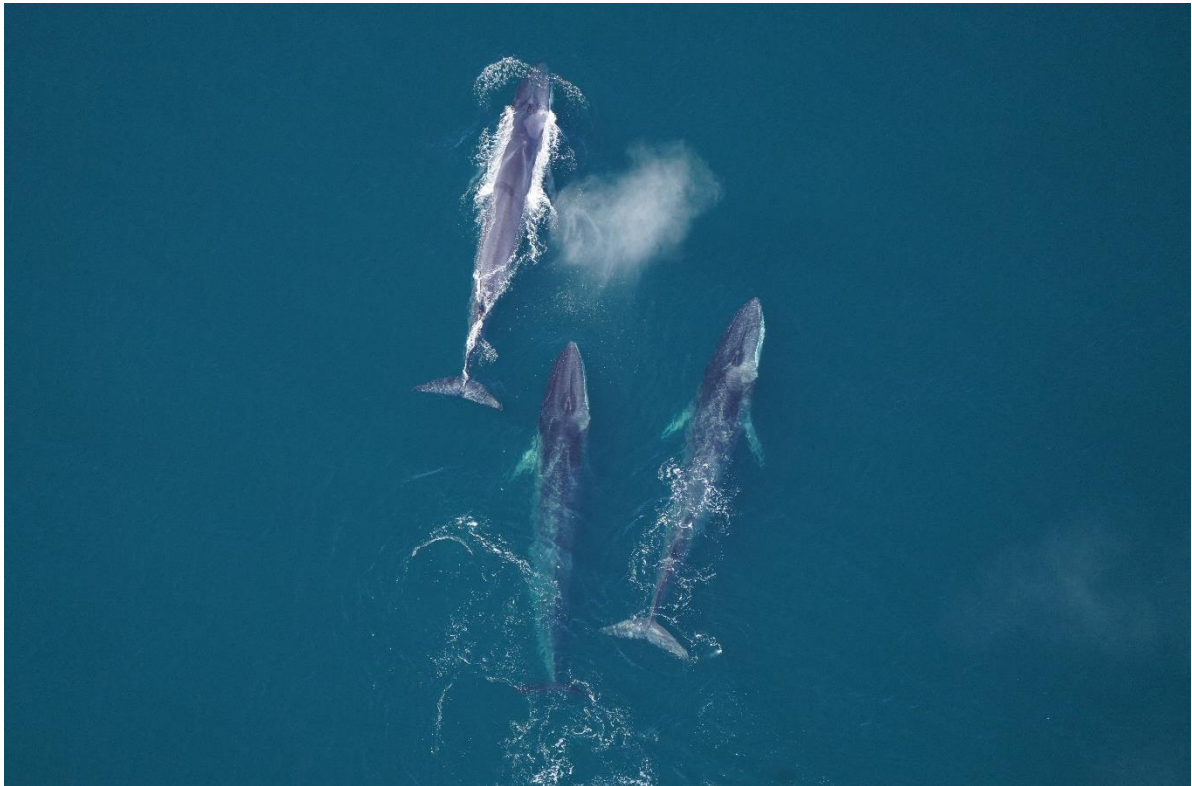


Figure 25. A group of fin whales observed during the July 25th aerial survey.

2.17 Survey date: July 30, 2023

Aircraft take off occurred from New Bedford Regional Airport at 1305 h. Survey conditions were clear to hazy, visibility was 5 nm, wind ranged from 10 knots from the N to 4 knots from the SE, and Beaufort Sea State ranged from 1 - 3. This survey lasted 5.2 h and covered 12 condensed survey tracklines. The last two lines were cut short due to daylight constraints. A total of 34 sightings of marine fauna were recorded by observers (Table 18). Survey tracklines and observer sightings are shown in Figure 26. A sample photograph from this survey can be seen in Figure 27.

Table 18. Species sighted by observers during the July 30th aerial survey.

Species	Number of sightings	Number of individuals
Bottlenose dolphin (<i>Tursiops truncatus</i>)	4	129
Common dolphin (<i>Delphinus delphis</i>)	13	291
Fin whale (<i>Balaenoptera physalus</i>)	3	3
Humpback whale (<i>Megaptera novaeangliae</i>)	5	18
Minke whale (<i>Balaenoptera acutorostrata</i>)	1	1
Unidentified dolphin	6	78
Unidentified shark	2	2

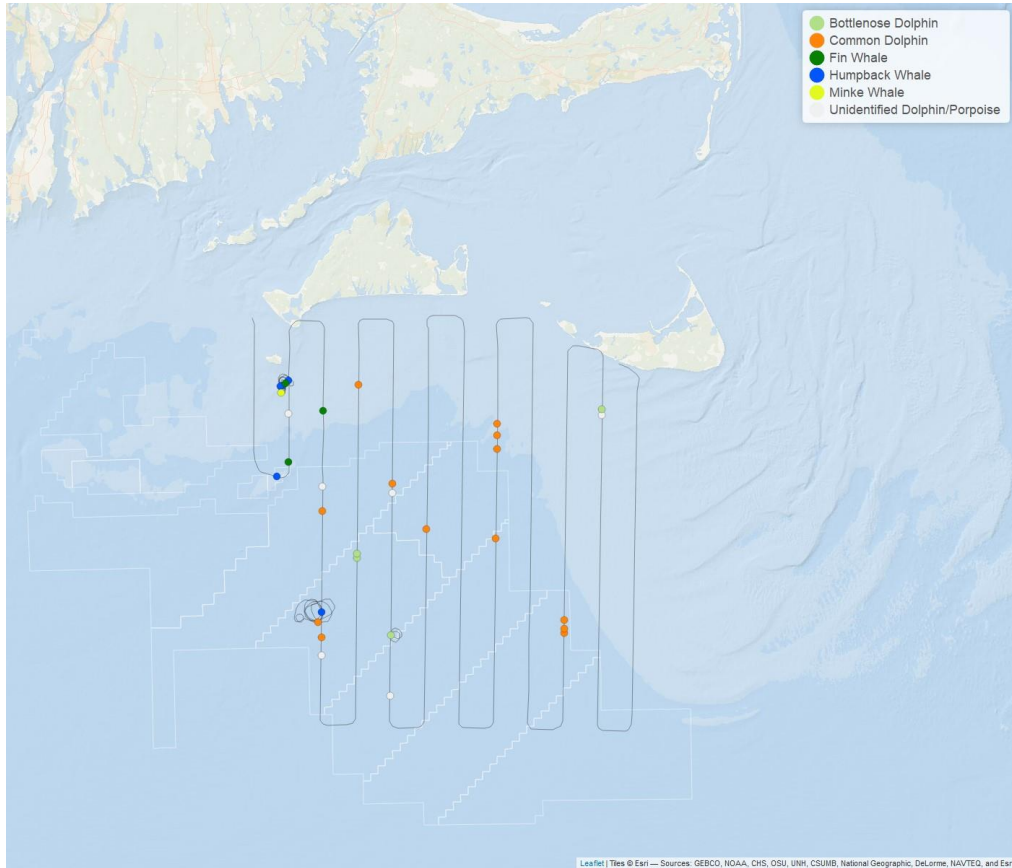


Figure 26. Marine mammal sightings and tracklines from a condensed survey for project WOW conducted on July 30th in the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy area lease sites.

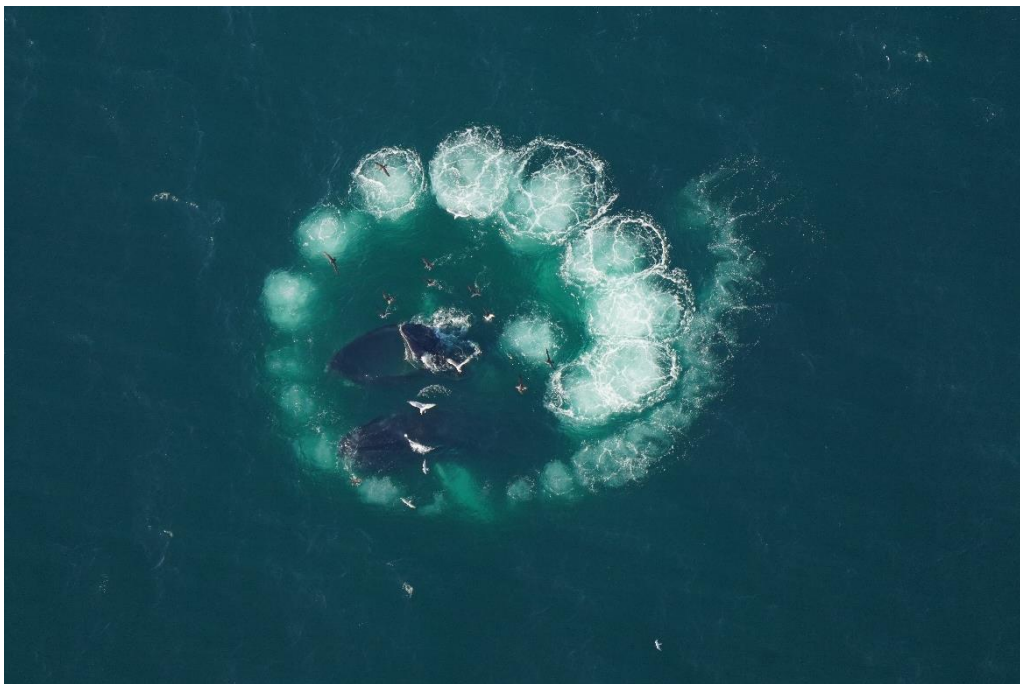


Figure 27. Bubble-feeding humpback whales observed on the July 30th aerial survey.

2.18: Sightings of right whales

During this reporting period, the NEAq team had 95 sightings of 111 right whales in the study area (Figure 28). The locations of the sightings are included in Table A-1 of the Appendix.

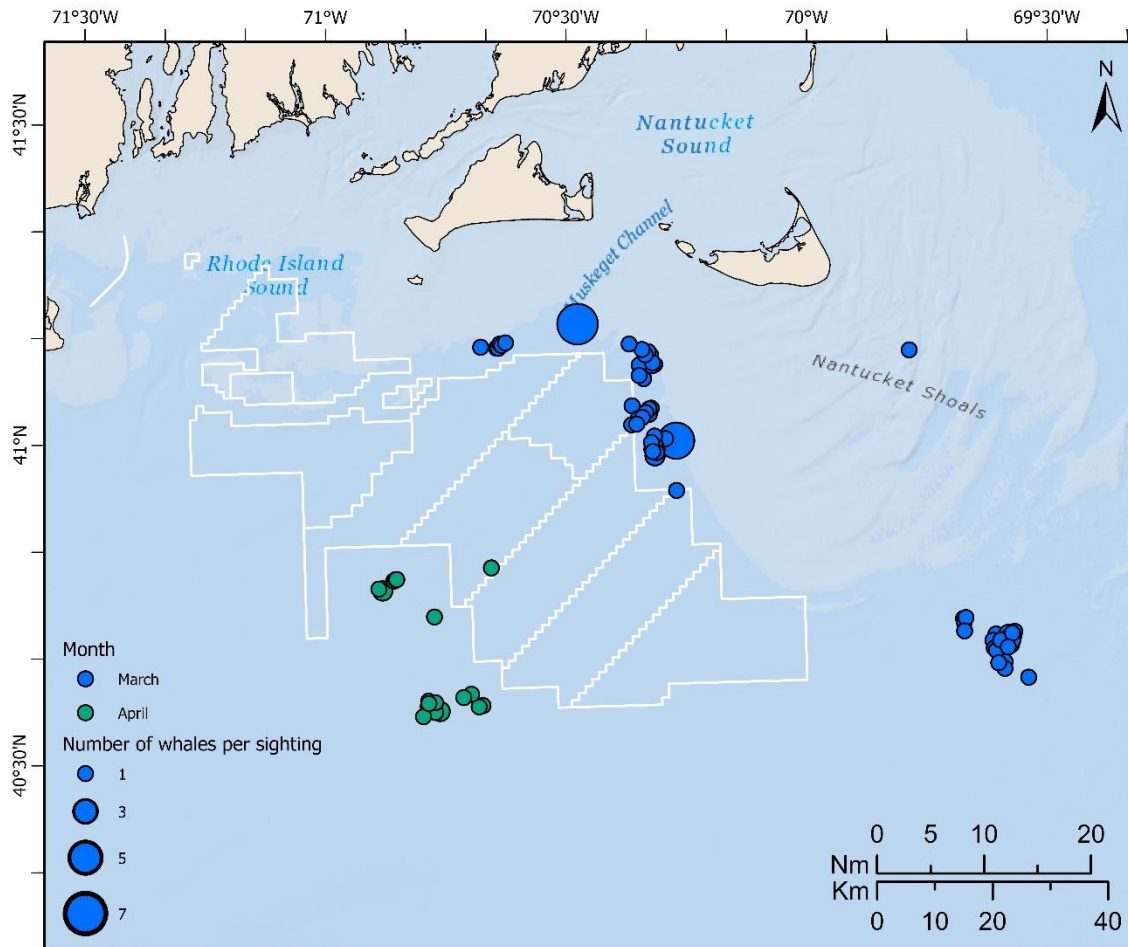


Figure 28. Right whale sightings from aerial surveys conducted during this reporting period in the study area offshore of Massachusetts and Rhode Island. White outlines represent the offshore wind energy area lease sites.

3 Photographic Analysis

3.1 Vertical photographs

During this reporting period, 51,658 vertical camera photographs were taken. There are no vertical photos from the first survey due to power and technical difficulties that were not resolved until the end of the survey. Photo analysis is complete for all fifteen surveys conducted in this reporting period (Table 19), double-checks on photo analysis have been completed for all surveys except 7/25/2023 and 7/30/2023. Marine megafauna sightings from vertical photos (that have been double checked) with trackline information can be found in Table B-1.

Table 19. Details of vertical camera photo analysis.

Survey Date	Survey Type	# Tracklines Reviewed	# Photos	Date Completed
3/17/2023	Directed	6	2,867	3/24/2023
3/21/2023	General	6	2,181	3/27/2023
4/14/2023	General	11	3,499	4/26/2023
4/20/2023	General	8	5,081	5/2/2023
5/15/2023	General	8	2,747	5/23/2023
5/18/2023	General	12	4,088	6/1/2023
5/21/2023	General	10	3,538	5/25/2023
6/11/2023	General	12	4,412	6/29/2023
6/16/2023	General	12	3,957	6/28/2023
6/19/2023	Condensed	14	3,952	7/6/2023
6/23/2023	General	5	893	7/7/2023
7/22/2023	General	8	3,456	8/14/2023
7/23/2023	General+Condensed	12	4,353	8/16/2023
7/25/2023	General	12	3,381	8/22/2023
7/30/2023	Condensed	12	3,253	8/25/2023

3.2 Handheld photographs of right whales:

During this reporting period, observers took 3,226 photographs and photographed at least 70 unique right whales, all of which have been identified. A total of 86 right whales were photographed on all surveys combined during this reporting period (this number includes individuals that were seen on multiple surveys). Twenty-five right whales were sighted but not photographed during the reporting period due to long dive times. Demographic information regarding the right whales that were identified during this reporting period is included in Table 20.

Table 20. Summaries of age class and sex for right whales observed on aerial surveys conducted in the study area during this reporting period.

Age class and sex	Number of individuals
Adult Females	15
Adult Males	40
Adults with unknown sex	2
Juvenile Females	4
Juvenile Males	3
Juveniles with unknown sex	4
Unknown sex and unknown age class	1
Unknown age class Female	1
Unknown age class Male	0

Appendix A: Right whale sightings

Table A-1. Sightings of right whales during aerial surveys conducted in the study area offshore of Massachusetts and Rhode Island during this reporting period.

Date	Time	Latitude	Longitude	Number of individuals
3/10/2023	11:34:53	41.1503	-70.6839	1
3/10/2023	11:39:12	41.1487	-70.6509	1
3/10/2023	11:51:28	41.1483	-70.6476	1
3/10/2023	11:55:54	41.1552	-70.6443	1
3/10/2023	12:06:24	41.1528	-70.6405	1
3/10/2023	12:09:09	41.1566	-70.6323	1
3/10/2023	13:06:02	41.1847	-70.4833	7
3/10/2023	14:14:09	40.9233	-70.2835	1
3/10/2023	14:23:18	41.0008	-70.2828	6
3/10/2023	14:24:10	41.0040	-70.3060	1
3/10/2023	14:30:29	41.0042	-70.3048	1
3/17/2023	09:55:33	40.7155	-69.6994	1
3/17/2023	10:06:14	40.7107	-69.6981	1
3/17/2023	10:16:36	40.7169	-69.6942	1
3/17/2023	10:18:15	40.6962	-69.6977	1
3/17/2023	11:01:27	40.6904	-69.6333	1
3/17/2023	11:07:25	40.6919	-69.6031	1
3/17/2023	11:08:37	40.6878	-69.6124	1
3/17/2023	11:11:21	40.6730	-69.6021	1
3/17/2023	11:13:08	40.6861	-69.6010	1
3/17/2023	11:13:38	40.6814	-69.6050	1
3/17/2023	11:14:11	40.6895	-69.6072	2
3/17/2023	11:15:57	40.6720	-69.6206	1
3/17/2023	11:20:58	40.6804	-69.6402	1
3/17/2023	11:23:32	40.6937	-69.5949	1
3/17/2023	11:27:48	40.6858	-69.5976	1
3/17/2023	11:30:02	40.6815	-69.6025	1
3/17/2023	11:31:03	40.6853	-69.6086	1
3/17/2023	11:32:21	40.6810	-69.6036	2
3/17/2023	11:38:34	40.6468	-69.6160	1
3/17/2023	11:40:51	40.6684	-69.6374	1
3/17/2023	11:41:09	40.6648	-69.6333	1
3/17/2023	11:41:54	40.6806	-69.6240	1
3/17/2023	11:43:40	40.6912	-69.5997	1
3/17/2023	11:48:05	40.6699	-69.6090	1
3/17/2023	11:51:04	40.6363	-69.6166	1
3/17/2023	12:14:45	40.6452	-69.6291	1
3/17/2023	12:20:54	40.6219	-69.5685	1
3/21/2023	08:38:05	41.1366	-69.7999	1
3/21/2023	10:21:35	41.1349	-70.3331	1
3/21/2023	10:23:14	41.1223	-70.3334	1

Table A-1 continued. Sightings of right whales during aerial surveys conducted in the study area offshore of Massachusetts and Rhode Island during this reporting period.

Date	Time	Latitude	Longitude	Number of individuals
3/21/2023	10:26:12	41.1204	-70.3250	1
3/21/2023	10:28:33	41.1152	-70.3536	1
3/21/2023	10:30:48	41.1363	-70.3432	1
3/21/2023	10:33:12	41.1403	-70.3382	1
3/21/2023	10:35:17	41.1181	-70.3313	1
3/21/2023	10:36:30	41.1199	-70.3570	1
3/21/2023	10:39:27	41.1229	-70.3296	1
3/21/2023	10:40:13	41.1356	-70.3445	1
3/21/2023	10:41:20	41.1440	-70.3512	1
3/21/2023	10:48:12	41.1527	-70.3774	1
3/21/2023	11:26:25	41.0983	-70.3486	1
3/21/2023	11:44:08	41.1033	-70.3575	1
3/21/2023	11:49:00	41.0522	-70.3333	1
3/21/2023	11:51:31	41.0441	-70.3564	1
3/21/2023	11:53:18	41.0424	-70.3376	1
3/21/2023	11:56:04	41.0564	-70.3731	1
3/21/2023	11:58:53	41.0511	-70.3379	1
3/21/2023	12:00:55	41.0454	-70.3448	1
3/21/2023	12:03:37	41.0364	-70.3606	1
3/21/2023	12:08:45	41.0378	-70.3518	1
3/21/2023	12:11:45	41.0267	-70.3742	1
3/21/2023	12:19:20	41.0276	-70.3638	1
3/21/2023	12:26:05	40.9878	-70.3332	1
3/21/2023	12:28:00	40.9778	-70.3271	2
3/21/2023	12:31:25	40.9918	-70.3246	1
3/21/2023	12:33:15	40.9870	-70.3227	1
3/21/2023	12:34:45	40.9963	-70.3292	1
3/21/2023	12:35:24	40.9975	-70.3273	1
3/21/2023	12:39:17	41.0086	-70.3275	1
3/21/2023	12:43:15	40.9828	-70.3236	1
3/21/2023	12:45:01	40.9904	-70.3323	1
3/21/2023	12:47:20	40.9987	-70.3339	1
3/21/2023	13:00:44	40.9843	-70.3313	1
4/14/2023	11:13:04	40.7302	-70.7835	1
4/14/2023	11:47:20	40.5827	-70.7737	2
4/14/2023	11:48:40	40.5870	-70.7866	1
4/14/2023	12:01:57	40.5986	-70.7971	1
4/14/2023	12:02:26	40.5886	-70.7918	1
4/14/2023	12:03:52	40.5904	-70.7977	1
4/14/2023	12:05:35	40.5903	-70.7890	1
4/14/2023	12:13:21	40.5810	-70.7827	1

TableA-1 continued. Sightings of right whales during aerial surveys conducted in the study area offshore of Massachusetts and Rhode Island during this reporting period.

Date	Time	Latitude	Longitude	Number of individuals
4/14/2023	12:21:26	40.5963	-70.7828	1
4/14/2023	12:22:32	40.5745	-70.8076	1
4/14/2023	12:35:30	40.5951	-70.7962	1
4/14/2023	13:00:25	40.5913	-70.6860	1
4/14/2023	13:08:12	40.5893	-70.6937	1
4/14/2023	13:13:32	40.6089	-70.7092	1
4/14/2023	13:19:57	40.6040	-70.7250	1
4/20/2023	10:58:41	40.7715	-70.8895	2
4/20/2023	11:02:33	40.7866	-70.8666	1
4/20/2023	11:02:41	40.7890	-70.8626	1
4/20/2023	11:12:51	40.7742	-70.8974	1
4/20/2023	11:28:56	40.7888	-70.8605	1
4/20/2023	12:50:03	40.8058	-70.6660	1

Appendix B: Vertical photograph sightings

Table B-1. Marine megafauna captured by the vertical photographs in the study area offshore of Massachusetts and Rhode Island shown by survey date and trackline.

Survey Date	Trackline	Species	#of animals
3/17/2023	95	Unidentified dolphin/porpoise	1
3/21/2023	61	Common dolphin (<i>Delphinus delphis</i>)	3
4/14/2023	18	Gray Seal (<i>Halichoerus grypus</i>)	1
4/14/2023	66	Harbor Porpoise (<i>Phocoena phocoena</i>)	1
4/14/2023	74	Harbor Porpoise (<i>Phocoena phocoena</i>)	1
4/20/2023	Cross-leg	Unidentified seal	1
4/20/2023	41	Harbor Porpoise (<i>Phocoena phocoena</i>)	1
5/15/2023	9	Minke whale (<i>Balaenoptera acutorostrata</i>)	1
5/15/2023	25	Basking shark (<i>Cetorhinus maximus</i>)	1
5/15/2023	41	Basking shark (<i>Cetorhinus maximus</i>)	1
5/18/2023	31	Minke whale (<i>Balaenoptera acutorostrata</i>)	1
5/18/2023	63	Harbor Porpoise (<i>Phocoena phocoena</i>)	2
5/18/2023	71	Basking shark (<i>Cetorhinus maximus</i>)	1
5/18/2023	Cross-leg	Unidentified seal	1
5/21/2023	80	Ocean sunfish (<i>Mola mola</i>)	1
6/11/2023	Transit	Unidentified fish	1
6/11/2023	6	Humpback whale (<i>Megaptera novaeangliae</i>)	1
6/11/2023	Cross-leg	Blue shark (<i>Prionace glauca</i>)	2
6/11/2023	Cross-leg	Ocean sunfish (<i>Mola mola</i>)	1
6/11/2023	14	Bottlenose dolphin (<i>Tursiops truncatus</i>)	4
6/11/2023	30	Fin whale (<i>Balaenoptera physalus</i>)	1
6/11/2023	30	Ocean sunfish (<i>Mola mola</i>)	1
6/11/2023	54	Unidentified fish	2
6/11/2023	54	Ocean sunfish (<i>Mola mola</i>)	1
6/11/2023	70	Ocean sunfish (<i>Mola mola</i>)	1
6/11/2023	86	School of fish	1
6/11/2023	86	Ocean sunfish (<i>Mola mola</i>)	1
6/11/2023	94	Ocean sunfish (<i>Mola mola</i>)	1
6/16/2023	4	Bottlenose dolphin (<i>Tursiops truncatus</i>)	1
6/16/2023	Cross-leg	Bottlenose dolphin (<i>Tursiops truncatus</i>)	4
6/16/2023	Cross-leg	Basking shark (<i>Cetorhinus maximus</i>)	1
6/23/2023	45	Ocean sunfish (<i>Mola mola</i>)	1
6/23/2023	61	Blue shark (<i>Prionace glauca</i>)	2
6/23/2023	Cross-leg	Blue shark (<i>Prionace glauca</i>)	1
6/23/2023	Cross-leg	Ocean sunfish (<i>Mola mola</i>)	3
7/22/2023	Cross-leg	Humpback whale (<i>Megaptera novaeangliae</i>)	1
7/22/2023	18	Unidentified dolphin/porpoise	2
7/22/2023	18	Common dolphin (<i>Delphinus delphis</i>)	7
7/22/2023	18	Humpback whale (<i>Megaptera novaeangliae</i>)	2
7/22/2023	18	Hammerhead shark (<i>Sphyrnidae</i> spp.)	2

TableB-1 continued. Marine megafauna captured by the vertical photographs in the study area offshore of Massachusetts and Rhode Island shown by survey date and trackline.

Survey Date	Trackline	Species	#ofanimals
7/22/2023	18	Hammerhead shark (<i>Sphyrnidae</i> spp.)	1
7/22/2023	Cross-leg	Unidentified dolphin/porpoise	2
7/22/2023	Cross-leg	Loggerhead sea turtle (<i>Caretta caretta</i>)	1
7/22/2023	34	Unidentified shark	1
7/22/2023	34	Common dolphin (<i>Delphinus delphis</i>)	39
7/22/2023	Cross-leg	Unidentified shark	1
7/22/2023	Cross-leg	Unidentified shark	1
7/22/2023	50	Unidentified shark	1
7/22/2023	50	Unidentified shark	1
7/22/2023	50	Hammerhead shark (<i>Sphyrnidae</i> spp.)	2
7/22/2023	58	Ocean sunfish (<i>Mola mola</i>)	1
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified fish	2
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified fish	10
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified fish	7
7/23/2023	210	Unidentified shark	2
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified shark	1
7/23/2023	210	Unidentified shark	4
7/23/2023	210	Unidentified fish	3
7/23/2023	210	Unidentified shark	1
7/23/2023	211	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1

TableB-1 continued. Marine megafauna captured by the vertical photographs in the study area offshore of Massachusetts and Rhode Island shown by survey date and trackline.

Survey Date	Trackline	Species	#ofanimals
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	2
7/23/2023	211	Unidentified tuna	6
7/23/2023	211	Unidentified tuna	6
7/23/2023	211	Common dolphin (<i>Delphinus delphis</i>)	11
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Common dolphin (<i>Delphinus delphis</i>)	6
7/23/2023	211	Common dolphin (<i>Delphinus delphis</i>)	50
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified tuna	21
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	2
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Common dolphin (<i>Delphinus delphis</i>)	16
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Bluefin tuna (<i>Thunnus thynnus</i>)	14
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified tuna	2
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified tuna	1
7/23/2023	211	Bluefin tuna (<i>Thunnus thynnus</i>)	35
7/23/2023	211	Common dolphin (<i>Delphinus delphis</i>)	2
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified tuna	6
7/23/2023	211	Unidentified tuna	9
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1

TableB-1 continued. Marine megafauna captured by the vertical photographs in the study area offshore of Massachusetts and Rhode Island shown by survey date and trackline.

Survey Date	Trackline	Species	#ofanimals
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	2
7/23/2023	211	Unidentified tuna	6
7/23/2023	211	Unidentified tuna	6
7/23/2023	211	Common dolphin (<i>Delphinus delphis</i>)	11
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Common dolphin (<i>Delphinus delphis</i>)	6
7/23/2023	211	Common dolphin (<i>Delphinus delphis</i>)	50
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified tuna	21
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	2
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Common dolphin (<i>Delphinus delphis</i>)	16
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Bluefin tuna (<i>Thunnus thynnus</i>)	14
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified tuna	2
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified tuna	1
7/23/2023	211	Bluefin tuna (<i>Thunnus thynnus</i>)	35
7/23/2023	211	Common dolphin (<i>Delphinus delphis</i>)	2
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified shark	1
7/23/2023	211	Unidentified tuna	6
7/23/2023	211	Unidentified tuna	9
7/23/2023	212	Blue shark (<i>Prionace glauca</i>)	1

Table B-1 continued. Marine megafauna captured by the vertical photographs in the study area offshore of Massachusetts and Rhode Island shown by survey date and trackline.

Survey Date	Trackline	Species	#of animals
7/23/2023	212	Unidentified seal	1
7/23/2023	212	Unidentified shark	1
7/23/2023	212	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	212	Unidentified shark	1
7/23/2023	212	Unidentified shark	1
7/23/2023	212	Unidentified shark	1
7/23/2023	212	Common dolphin (<i>Delphinus delphis</i>)	4
7/23/2023	212	Common dolphin (<i>Delphinus delphis</i>)	10
7/23/2023	212	Common dolphin (<i>Delphinus delphis</i>)	1
7/23/2023	212	Common dolphin (<i>Delphinus delphis</i>)	4
7/23/2023	212	Unidentified shark	1
7/23/2023	Cross-leg	Hammerhead shark (<i>Sphyrnidae</i> spp.)	1
7/23/2023	213	Unidentified shark	1
7/23/2023	213	Unidentified shark	1
7/23/2023	213	Unidentified shark	1
7/23/2023	213	Unidentified shark	1
7/23/2023	213	Unidentified shark	1
7/23/2023	213	Unidentified shark	1
7/23/2023	213	Unidentified shark	1
7/23/2023	213	Unidentified shark	1
7/23/2023	214	Unidentified shark	1
7/23/2023	214	Unidentified shark	1
7/23/2023	214	Unidentified shark	1
7/23/2023	214	Unidentified shark	1
7/23/2023	Cross-leg	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	Cross-leg	Unidentified dolphin/porpoise	8
7/23/2023	215	Unidentified shark	1
7/23/2023	215	Unidentified shark	1
7/23/2023	216	Unidentified shark	1
7/23/2023	216	Unidentified shark	1
7/23/2023	216	Unidentified shark	1
7/23/2023	Cross-leg	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Ocean sunfish (<i>Mola mola</i>)	1
7/23/2023	217	Unidentified ray	1
7/23/2023	217	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified ray	1
7/23/2023	217	Unidentified ray	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified fish	2

TableB-1 continued. Marine megafauna captured by the vertical photographs in the study area offshore of Massachusetts and Rhode Island shown by survey date and trackline.

Survey Date	Trackline	Species	#ofanimals
7/23/2023	217	Unidentified shark	3
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	2
7/23/2023	217	Unidentified shark	2
7/23/2023	217	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Ocean sunfish (<i>Mola mola</i>)	1
7/23/2023	217	Unidentified ray	1
7/23/2023	217	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified ray	1
7/23/2023	217	Unidentified ray	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified fish	2
7/23/2023	217	Unidentified shark	3
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1

TableB-1 continued. Marine megafauna captured by the vertical photographs in the study area offshore of Massachusetts and Rhode Island shown by survey date and trackline.

Survey Date	Trackline	Species	#ofanimals
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	1
7/23/2023	217	Unidentified shark	2
7/23/2023	217	Unidentified shark	2
7/23/2023	217	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	66	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	66	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	66	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	66	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	66	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	66	Unidentified fish	1
7/23/2023	66	Unidentified shark	1
7/23/2023	66	Unidentified shark	1
7/23/2023	66	Unidentified shark	1
7/23/2023	66	Unidentified shark	1
7/23/2023	66	Unidentified shark	1
7/23/2023	66	Unidentified shark	1
7/23/2023	66	Unidentified shark	1
7/23/2023	66	Unidentified shark	1
7/23/2023	66	Unidentified shark	1
7/23/2023	66	Unidentified shark	1
7/23/2023	66	Unidentified shark	1
7/23/2023	Cross-leg	Unidentified shark	1
7/23/2023	Cross-leg	Unidentified shark	1
7/23/2023	Cross-leg	Common dolphin (<i>Delphinus delphis</i>)	3
7/23/2023	Cross-leg	Unidentified shark	1
7/23/2023	Cross-leg	Unidentified shark	1
7/23/2023	74	Unidentified shark	1
7/23/2023	74	Unidentified shark	1
7/23/2023	74	Unidentified shark	1
7/23/2023	82	Unidentified shark	1
7/23/2023	82	Unidentified shark	1
7/23/2023	82	Unidentified ray	1
7/23/2023	82	Unidentified shark	1
7/23/2023	82	Unidentified shark	1
7/23/2023	82	Unidentified shark	1
7/23/2023	82	Unidentified shark	1
7/23/2023	82	Unidentified shark	1
7/23/2023	82	Unidentified shark	1
7/23/2023	82	Unidentified shark	1
7/23/2023	82	Unidentified shark	1
7/23/2023	Cross-leg	Unidentified shark	1

Table B-1 continued. Marine megafauna captured by the vertical photographs in the study area offshore of Massachusetts and Rhode Island shown by survey date and trackline.

Survey Date	Trackline	Species	#of animals
7/23/2023	Cross-leg	Ocean sunfish (<i>Mola mola</i>)	1
7/23/2023	Cross-leg	Unidentified shark	1
7/23/2023	Cross-leg	Unidentified shark	1
7/23/2023	Cross-leg	Unidentified shark	1
7/23/2023	Cross-leg	Unidentified shark	1
7/23/2023	90	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	90	Blue shark (<i>Prionace glauca</i>)	1
7/23/2023	90	Unidentified shark	1
7/23/2023	90	Unidentified shark	1