Protected Species Aerial Surveys in the Mid-Atlantic Region off Virginia, Maryland, Delaware, and New Jersey

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Visit the Research and Monitoring Initiative website: https://dep.nj.gov/offshorewind/rmi/

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Overview

The New Jersey offshore wind Research and Monitoring Initiative (RMI) is administered by the Department of Environmental Protection in collaboration with the Board of Public Utilities (BPU). The Initiative seeks to employ a rigorous scientific approach to research and monitoring of marine and coastal resources during the development, construction, operation and decommissioning of offshore wind as recommended in the New Jersey Offshore Wind Strategic Plan. The goal of the Research and Monitoring Initiative is to ensure that as New Jersey moves toward a clean energy economy, the State continues to protect and responsibly manage New Jersey's coastal & marine resources.

In order to meet these mandates, the RMI developed 14 Short-term Highest Priority Research and Monitoring Needs. This research project addresses priority 10, "Estimate habitat use, distribution, and abundance by season (e.g., overwintering harbor seals) for the right whale, other whales and dolphins…"

The National Oceanic and Atmospheric Administration's Northeast Fisheries Science Center has been completing aerial cetacean surveys in the Mid-Atlantic Ocean since 1998. However, waters off of central and northern New Jersey were not being surveyed, despite evidence of the year-round presence of North Atlantic right whales (Whitt et. al 2013).

In order to effectively assess the seasonal habitat use, distribution, and abundance of whale species across the NY-NJ Bight, the RMI has provided funding to NOAA to expand the survey area to cover the northern NJ coastal region. The initial northern NJ surveys were conducted by NOAA's contractor, Azura, in January and February 2024 and the associated final report is posted on the RMI website and available through the NJ State Library at https://hdl.handle.net/10929/148054. The following winter the RMI provided additional funding to increase the number of aerial surveys off of northern New Jersey from two transect flights in year 1 to four transect flights in year 2. Surveys in year 2 were conducted on December 27, 2024, and in 2025 on January 17, February 3 and 5, and March 10. The report that is enclosed provides an overview of NOAA's entire regional survey effort from the end of 2024 to early 2025 and includes areas outside of the northern New Jersey coast where RMI funding was focused.

In Figure 1 of the report body, RMI funding supported survey efforts for transects 1a through 14a. Data from these surveys are hosted by the Ocean Biodiversity Information System Spatial Ecological Analysis of Megavertebrate Populations (OBIS-SEAMAP). The specific dataset associated with this report is titled "Mid-atlantic marine mammal visual survey in Dec 2024 - Apr 2025" and is available at https://seamap.env.duke.edu/dataset/2368.

In addition, the results of these aerial surveys are provided in the form of data files and photographs to the North Atlantic Right Whale Consortium (NARWC) and stored in NOAA's National Centers for Environmental Information (NCEIS) database. These results are utilized by the Duke Marine Geospatial Laboratory to complete surface density models that inform cetacean management decisions. Survey observations are also posted on WhaleMap, which displays a rolling two week summary of acoustic and visual whale observations and can be queried for various parameters (i.e., date, platform, species, observation type).

References

Whitt, A. D., K. Dudzinski and J. R. Laliberté. 2013. North Atlantic right whale distribution and seasonal occurrence in nearshore waters off New Jersey, USA, and implication for management. Endang. Species Res. 20:59-69.

FINAL REPORT

Protected Species Aerial Surveys in the Mid-Atlantic Region off Virginia, Maryland, Delaware, and New Jersey

Winter 2024/2025 (3 December 2024 – 4 April 2025)

Prepared for

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EXECUTIVE SUMMARY

Azura Consulting LLC (Azura) conducted systematic line-transect aerial surveys to determine the distribution and relative abundance of large whales off the coasts of Virginia, Maryland, Delaware, and New Jersey between 3 December 2024 and 4 April 2025. The primary target of these surveys was the North Atlantic right whale. Data on sei, humpback, blue, fin, sperm, and minke whales were also collected. The study area ranged from the New York Bight to south of Virginia Beach, Virginia, and included five survey areas: northern New Jersey (NONJ), southern New Jersey and the Delaware Bay entrance (NJDE), Maryland and Virginia (MDVA), the Virginia "Wedge" area (VAWE), and the Chesapeake Bay entrance (CBEN). The tracklines ran roughly perpendicular to the coast, were spaced 4 nautical miles (NM; 7 kilometers [km]) apart, and covered approximately 3,158 NM (5,849 km). The NJDE, MDVA, and CBEN tracklines extended offshore to approximately the 600-foot (ft; 183-meter [m]) depth contour. The easternmost points of the NONJ and VAWE tracklines ranged from the 85- to 295-ft (26- to 90-m) depth contours.

The Azura Team of two marine mammal observers and two pilots flew the surveys at an airspeed of approximately 100 knots (185 km/hour) and at an altitude of 1,500 ft (457 m) in a Partenavia P68C, a high-wing, twin-engine, fixed-gear, six-seat airplane equipped with bubble windows to maximize the observers' field of view. Surveys were flown under Visual Flight Rules conditions and limited to days with clear weather, good light conditions, high ceilings, and low wind speeds (Beaufort sea states of 4 or less). Most of the tracklines were flown three or four times this season. A total of 18,792 NM (34,803 km) was surveyed and included on-effort coverage of tracklines, circling, transits, and crosslegs.

A total of 199 large whale sightings were recorded from track: 13 right whale, 66 fin whale, 97 humpback whale, 1 unidentified beaked whale, 4 sperm whale, 17 minke whale, and 1 blue whale sightings. Right whales were sighted in December, January, February, and March and throughout the study area in waters 4 to 52 NM (7 to 96 km) from shore and 39 to 190 ft (12 to 58 m) in depth. A total of 43 unique right whales were matched to the North Atlantic Right Whale Catalog. These individuals included 18 females, 22 males, 2 recent-year calves (2023 and 2025), and 1 inter-matched whale of unknown sex. Five individuals were sighted on multiple days: females #1706, #3903, and #4617 and males #3530 and #4423. Right whale behaviors observed included slow and moderate swimming, swimming at surface, swimming on side, milling, surface-active groups, flippering, apparent nursing, feeding, and diving. A total of four surface-active groups were sighted; these were recorded off Maryland, New Jersey, and Delaware and consisted of group sizes ranging from 5 to 14 right whales.

Dynamic Management Areas were initiated in areas where three or more right whales were observed. This research was conducted in compliance with the National Marine Fisheries Service (NMFS) Research Permit No. 27066-01 and under contract to the NMFS Northeast Fisheries Science Center. Results of this study will inform regulations to mitigate impacts of commercial fishing, vessel traffic, and wind energy development on right whales and other large whales protected under the Endangered Species Act and Marine Mammal Protection Act.

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ACRONYMS AND ABBREVIATIONS

Azura	Azura Consulting LLC
BSS	Beaufort sea state
CBEN	Chesapeake Bay entrance
ft	foot(feet)
km	kilometer(s)
kt	knot(s)
m	meter(s)
MDVA	Maryland and Virginia
NARW	The North Atlantic Right Whale
NARWC	The North Atlantic Right Whale Consortium
NEFSC	Northeast Fisheries Science Center
NJDE	southern New Jersey and the Delaware Bay entrance
NM	nautical mile(s)
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NONJ	northern New Jersey
PSB	Protected Species Branch
SAG	surface-active group
VAWE	Virginia “Wedge” area
VFR	Visual Flight Rules

INTRODUCTION

BACKGROUND

The North Atlantic right whale (*Eubalaena glacialis*, hereafter "right whale") remains one of the most endangered large whales in the world with an estimated population size of about 370 individuals at the end of 2023 (Linden 2024). Despite decades of protection, a combination of anthropogenic impacts and a low calving rate continue to impede recovery of the species. With fewer than 70 reproductive females, any mortality and serious injury impedes recovery. Currently, the most significant threats to right whale survival include entanglement in fishing gear and collisions with vessels, which combined are responsible for a minimum of 157 documented dead, serious, or sublethal injuries/illness in the United States and Canada since 2017 (https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2025-north-atlantic-right-whale-unusual-mortality-event).

The National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), Northeast Fisheries Science Center (NEFSC) is the research arm of NOAA Fisheries in the region. NEFSC plans, develops, and manages a multidisciplinary program of basic and applied research. Aerial surveys are required to assess the effects of commercial fishing, vessel traffic, and wind energy development on right whales along the east coast of the United States. Potential effects of these activities include entanglement, collision, displacement, behavior disruption, and stress (Kraus et al. 2019). Surveys are needed to identify areas of overlap and associated risks with fishing and shipping and to assess distribution of right whales before, during, and after wind energy construction. The results of this work will inform regulations to mitigate impacts of these activities on right whales.

OBJECTIVES

Under contract to the NEFSC, Azura Consulting LLC (Azura) conducted aerial surveys to obtain sightings data on large whales in the Mid-Atlantic region. These data will be used to determine the winter distribution and relative abundance of species, including the presence of individual right whales, and to inform efforts to mitigate anthropogenic impacts on protected species in this region.

METHODS

Azura conducted systematic line-transect aerial surveys to collect sightings data that can be used to map the distribution of large whales and estimate their relative abundance off the coasts of Virginia, Maryland, Delaware, and New Jersey. The primary target of these surveys was the right whale, while the sei (*Balaenoptera borealis*), blue (*B. musculus*), humpback (*Megaptera novaeangliae*), fin (*B. physalus*), sperm (*Physeter macrocephalus*), and minke (*B. acutorostrata*) whales were also recorded.

SURVEY AREAS

The study area extended from the New York Bight to south of Virginia Beach, Virginia, and included five survey areas: northern New Jersey (NONJ), southern New Jersey and the Delaware Bay entrance (NJDE), Maryland and Virginia (MDVA), the Virginia "Wedge" area (VAWE), and the Chesapeake Bay entrance (CBEN). The tracklines ran roughly perpendicular to the coast, were spaced 4 nautical miles (NM; 7 kilometers [km]) apart, and covered approximately 3,158 NM (5,849 km) (not including the crosslegs) (**Figure 1**).

- The NONJ Survey Area consisted of 14 east-southeast/west-northwest tracklines (1a-14a) extending offshore from the New York Bight and Sandy Hook, New Jersey, to Little Egg Harbor Township, New Jersey (**Figure 1**). The tracklines began 1.5 NM (2.8 km) from shore and extended out to the 85- to 157-foot (ft; 26 to 48-meter [m]) depth contours. The total trackline length was 289 NM (535 km).

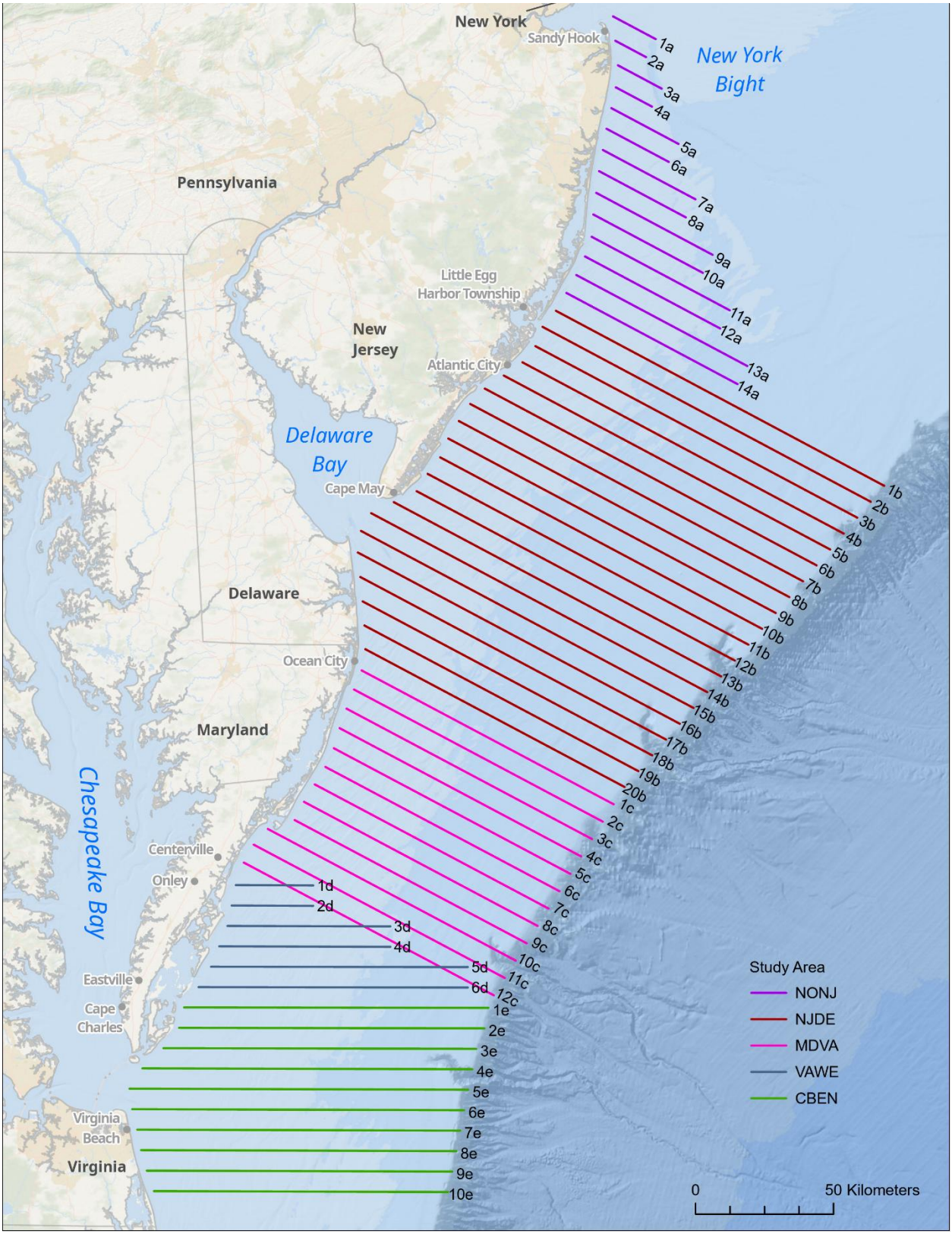


Figure 1. Planned survey tracklines

- The NJDE Survey Area consisted of 20 east-southeast/west-northwest tracklines (1b to 20b) extending offshore of Delaware Bay with the northernmost line starting 1.5 NM (2.8 km) from the coast near Little Egg Harbor Township, New Jersey, and extending to the 600-ft (183-m) contour and the southernmost line starting 1.5 NM (2.8 km) from the coast near the Delaware/Maryland border and extending out to the 600-ft (183-m) contour (**Figure 1**). This was the largest survey area, totaling 1,408 NM (2,608 km) in trackline length.
- The MDVA Survey Area consisted of 12 east-southeast/west-northwest tracklines (1c to 12c) extending offshore from Ocean City, Maryland, to Centerville, Virginia (**Figure 1**). The tracklines began 1.5 NM (2.8 km) from shore and extended out to the 600-ft (183-m) contour. The total trackline length was 644 NM (1,193 km).
- The VAWE Survey Area consisted of 6 east-west tracklines (1d to 6d) extending offshore of northern Virginia between Onley and Eastville, Virginia (**Figure 1**). The tracklines began 1.5 NM (2.8 km) from shore and extended out to the 44- to 167-ft (24- to 90-m) depth contours. The total trackline length was 199 NM (369 km).
- The CBEN Survey Area consisted of 10 east-west tracklines (1e to 10e) extending offshore of the Chesapeake Bay entrance with the northernmost line starting 1.5 NM (2.8 km) from the coast at around the same latitude as Cape Charles, Virginia, and extending offshore to the 600-ft (183-m) contour and the southernmost line starting 1.5 NM (2.8 km) from the coast just north of the Virginia/North Carolina border and extending out to the 600-ft (183-m) contour (**Figure 1**). The total trackline length was 618 NM (1,145 km).

SURVEY FREQUENCY

The survey period was from 3 December 2024 and 4 April 2025. The goal was to survey all tracklines four times, covering a total of 12,632 NM (23,396 km), not including the 4-NM (7-km) spacing between tracklines. The time between flying the same tracklines ranged from 2-6 weeks due to weather fluctuations: 3-4 weeks for the NONJ and VAWE Survey Area tracklines, 2-3 weeks for the NJDE Survey Area tracklines, 2-5 weeks for the MDVA Survey Area tracklines, and 2-6 weeks for the CBEN Survey Area tracklines.

SURVEY METHODS

Survey Design

The surveys followed standard line-transect distance sampling methods (Buckland et al. 2001). A single-platform (one-team) approach was used, assuming g(0)=1. This sampling method allows for relative abundance to be calculated and minimizes the costs associated with a double-platform (two-team) approach for obtaining absolute abundance estimates. The single team consisted of two marine mammal observers – one observer at a window on each side of the aircraft. Marine mammal observers were listed as co-investigators on Marine Mammal Protection Act Permit No. 27066-01 which allows for Level B harassment of marine mammals during survey operations in the Atlantic.

Aircraft and Flight Operations

Surveys were flown in a Partenavia P68C, a high-wing, twin-engine, fixed-gear, six-seat airplane equipped with bubble windows at the center seats to increase the observers' field of view and a small window in the back which pops out to allow for photographs. The aircraft was operated by two pilots experienced in flying offshore wildlife surveys. The aircraft was flown at an altitude of 1,500 ft (457 m) and an airspeed of approximately 100 knots (kt; 185 km/hour). The aircraft carried sufficient fuel for 4 to 5 hours of flight time, including transits to and from the survey areas. When sighted whales were either identified as right whales or potentially identified as right whales, the aircraft left the trackline at a right angle to the sighting and circled the sighting to confirm species

and, if a right whale, collect photographs for individual identification. All circling was done at a bank angle of 30 degrees or less.

Weather Conditions and Limitations

The surveys were flown under Visual Flight Rules (VFR) conditions and limited to days with clear weather, good light conditions, high ceilings, low wind speeds (12 kt or less), and visibility greater than 5 NM (9 km). Clouds, heavy precipitation, low ceiling/visibility, and otherwise adverse weather conditions were avoided under VFR to ensure both survey team safety and survey effectiveness. Surveys were not flown in sea states exceeding 4 on the Beaufort scale. When sea states reached a Beaufort 5 in the midst of a survey, tracklines were truncated, and the survey team flew toward acceptable survey conditions to maximize coverage. The following environmental conditions, which may affect the ability to detect animals, were recorded prior to the start of each trackline and updated as conditions changed: Beaufort sea state (BSS), solar glare (magnitude of impairment [none, some, severe]), percent of cloud cover, visibility (how far the observers could see from the aircraft), and subjective overall quality of viewing conditions (excellent, good, moderate, poor, and unacceptable) based on the observer's ability to detect a right whale 1.5 NM (2.8 km) from the aircraft.

Effort

A description of the codes and categories of effort and tracks is included in **Appendix A**. While the aircraft was in "on effort" mode, observers actively searched for whales at survey altitude and speed and regularly updated the environmental conditions. The survey team was "on effort" when on tracklines and crosslegs between tracklines and when required to temporarily deviate from tracklines due to military operations. The survey team remained on effort when circling (i.e., to confirm and photograph right whale sightings) and during transits over water when survey parameters (e.g., survey altitude and speed) could be maintained. The survey team went "off effort" when survey parameters could not be maintained; however, observers continued to record and regularly update environmental conditions and actively search for whales.

Data Recording

Data were recorded using the AerialVisSurvey software (provided by NMFS Southeast Fisheries Science Center) on a laptop computer. The software records data into a Microsoft Access Database. The laptop computer was connected to a global positioning system receiver, and the aircraft's position along the trackline was automatically recorded every 8 seconds. Observers used this program to record environmental conditions and sightings data. Due to budgetary constraints, a dedicated data recorder was not possible, so a voice recorder was used to enable the observers to record data with minimal time spent with eyes off the water. During a sighting, one observer recorded the time and position of the sighting on the laptop while the second observer recorded the sighting information on a digital voice recorder. Any additional sightings data not entered in AerialVisSurvey but recorded via the voice recorder were entered into the Access database at the end of the survey day.

A digital inclinometer and painter's tape were used prior to the beginning of the survey to mark angle measurements on the bubble windows of the plane which enabled the observers to quickly measure the angle of the animal from the trackline during sightings. In addition, daily logs were maintained for recording flight time, error logs, issues/delays, and tracklines surveyed, and paper datasheets (see **Appendix B**) were used to record additional information for right whale sightings.

To maximize detections of large whales, each observer scanned out to approximately 1.5 NM (2.8 km) from the aircraft. When the sighting was perpendicular to the aircraft, the observer took a measure of the angle to the sighting and recorded that measurement along with the sighting cue, species identification (to the lowest taxonomic level), identification reliability, estimate of group size (best

estimate with a +/- confidence interval when number of animals was difficult to determine), number of calves, animal heading (if applicable), and behavior. During post processing, species names and behaviors were converted to the codes outlined in The North Atlantic Right Whale Consortium (NARWC) database user guide (Kenney 2023). Sightings of species other than whales were recorded only when they were associated with the whale sightings.

Initial positions (latitude/longitude) were recorded when a sighting was made while on a trackline, during transit, or on a crossleg. Actual positions were recorded when the aircraft broke from the trackline, transit line, or crossleg and flew directly over the sighted animals in order to record the exact position of the animals. Final positions were recorded when the aircraft flew directly over the sighted animals in order to record the last position of the animals before resuming the survey. The team broke from the trackline only when the sighted whales were either identified as right whales or potential right whales in order to circle the sighting and confirm species and, if a right whale, collect photographs for individual identification. Actual and final positions were only recorded for right whales or for other whale species that were first sighted during a circling event since no initial position could be taken.

Photographs of right whales were taken for identification of individuals and submission to the North Atlantic Right Whale (NARW) Catalog curated by the New England Aquarium. During each right whale sighting after the aircraft passed perpendicular to the whale and initial sighting data were recorded, the team remained on effort, broke from the trackline, and circled the sighting in order to obtain photographs for individual identification. The team lowered altitude to 1,000 ft (305 m) when necessary to obtain better photographs. Time spent circling the right whales was limited to the minimum time necessary to obtain photographs of the entire rostral callosity patterns and any visible scars or markings. The high-quality photographs of right whales were taken using a Canon EOS R5 full-frame mirrorless camera with a Canon RF 100-500mm f/4.5-7.1L IS USM super-telephoto lens.

Data Quality Assurance/Quality Control

At the end of each survey day, a backup copy of the raw survey data was saved to an external hard drive as well as a Google Drive folder shared with NMFS. An additional audit copy was created, and the collected data was reviewed to correct any errors noted in the error log; the data recorded in the database was reconciled with that on any paper datasheets or voice recordings. For example, quality assurance and control included correcting misidentified species, correcting on/off segments, correcting mislabeled tracklines, and verifying and updating group sizes. The audited copy of the database was also stored on external media and to the Google Drive folder (NMFS included these data on WhaleMap). Photographs of right whales were uploaded to the Google Drive folder for NMFS identification and submission to the NARW Catalog.

Deliverables

Data Files

Deliverables to NMFS included the raw and corrected data files and right whale photographs. These files were uploaded to the Google Drive folder at the end of each survey day. NMFS shared the tracklines and right whale sightings with the public via display on WhaleMap (Johnson et al. 2021).

Daily Logs

We submitted a daily log of the events of each survey day to NMFS. These logs included the following information: team member names and positions in the aircraft, engine start and stop times, wheels up and wheels down times, total fight time, tracklines surveyed, general weather conditions (e.g., BSS), issues or delays, and total number of sightings of each species.

Post-Flight Reports

We submitted post-flight reports to NMFS within 24 hours of completion of each survey day. These reports included a map of the tracklines surveyed and large whale sightings, a brief summary of survey conditions (BSS and overall conditions – excellent, good, moderate, poor, and unacceptable/off watch), the total number of large whales sighted per species, and right whale sighting details (time, latitude, longitude, group size, number of calves, and behavior).

Northeast Fisheries Science Center Protected Species Branch Data Files

The final effort and sightings data files for each survey day were combined and formatted to match the NARWC and NEFSC Protected Species Branch (PSB) format for daily file submissions. These files included additional coding for some data fields, such as legtype, legstage, and PSB legstage.

RESULTS

EFFORT

The total on-effort coverage was approximately 18,792 NM (34,803 km) for the entire study area and included tracklines, crosslegs, circling, and on-effort transits (**Tables 1** and **2**, **Figures 2** to **6**). All but seven of the tracklines (12b, 7c-12c) were completed three times. Poor weather conditions and military activities prevented our team from completing all of the tracklines four times during the survey period.

All tracklines in the NONJ Survey Area were completed four times, and coverage was consistent throughout the survey months. In the NJDE Survey Area, our team completed all tracklines except 12b three times. All NJDE tracklines were completed during February and March with partial completion during December and January. Tracklines 3b and 10b were completed four times. In the MDVA Survey Area, all tracklines were completed two times, and 1c to 4c were completed three times. All of the MDVA tracklines were completed during February with partial completion during the other months. In the VAWE Survey Area, our team completed tracklines 1d to 4d four times and 5d to 6d three times. All tracklines were completed during December, February, and March with partial completion during January. In the CBEN Survey Area, tracklines 3e to 10e were completed four times (once each month between December and March), and 1e to 2e were completed during December, February, and March. See **Appendix C** for a summary of trackline coverage per survey area and month.

Table 1. Effort per track category

Track Category	On-Effort Coverage (NM)
Circling	2,490
Crossleg	1,217
Trackline	11,504
Transit	3,581
Total	**18,792**

Note: NM = nautical mile(s)

Table 2. Effort per survey area

Survey Area	On-Effort Coverage (NM)
CBEN	3,744
MDVA	3,656
NJDE	8,352
NONJ	1,947
VAWE	1,093
Total	**18,792**

Note: NM = nautical mile(s)

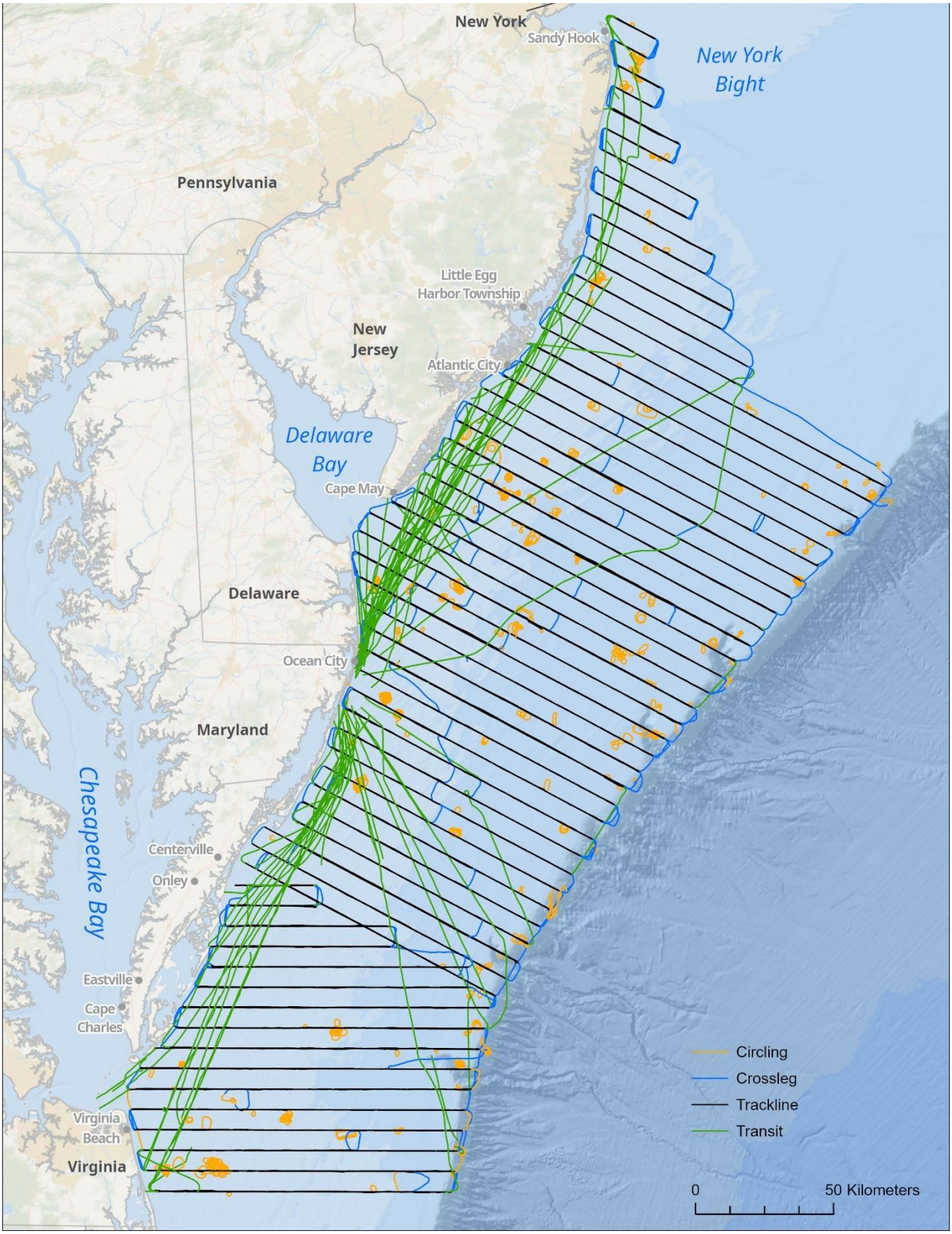


Figure 2. Survey tracks flown (on-effort coverage)

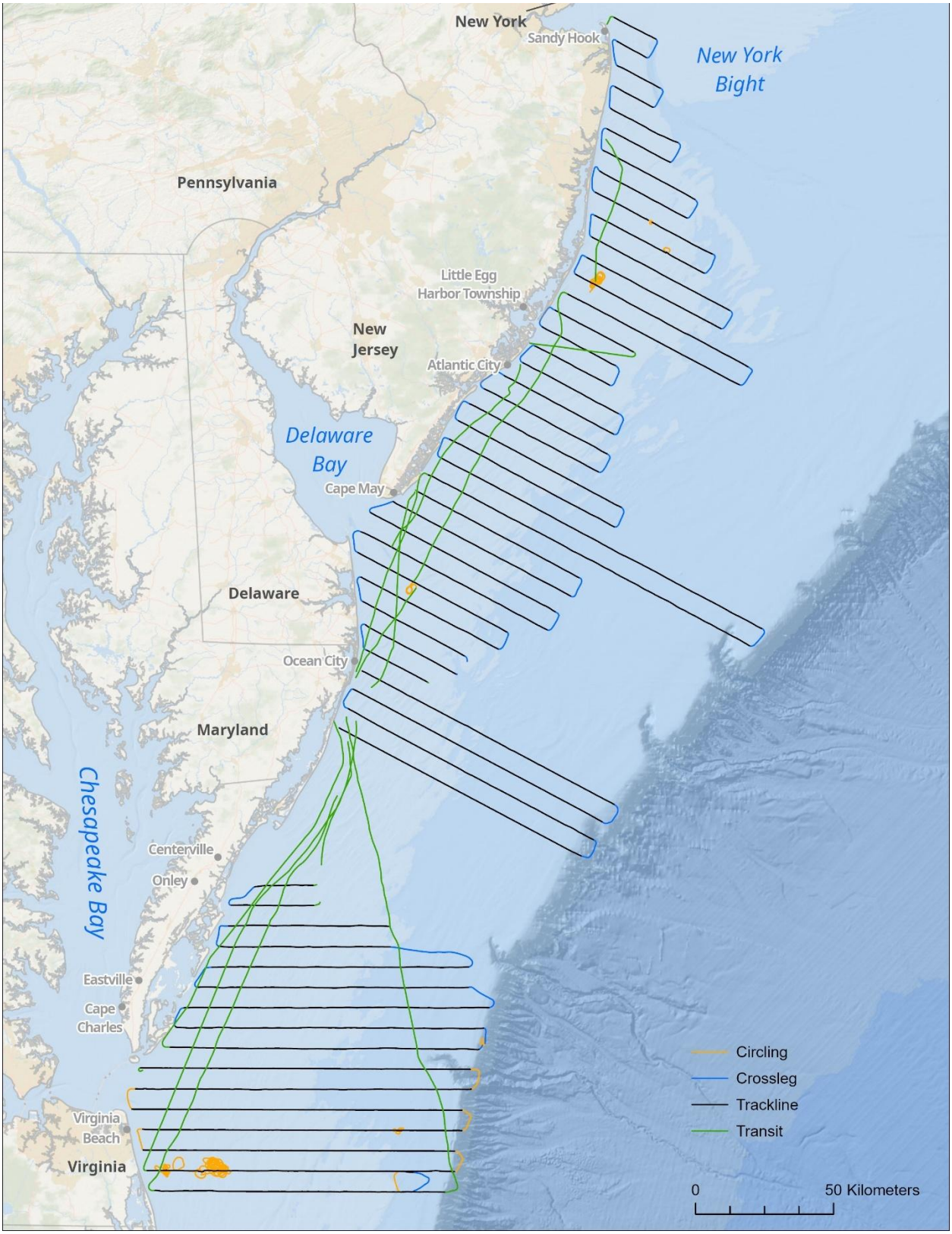


Figure 3. Survey tracks flown (on-effort coverage) during December.

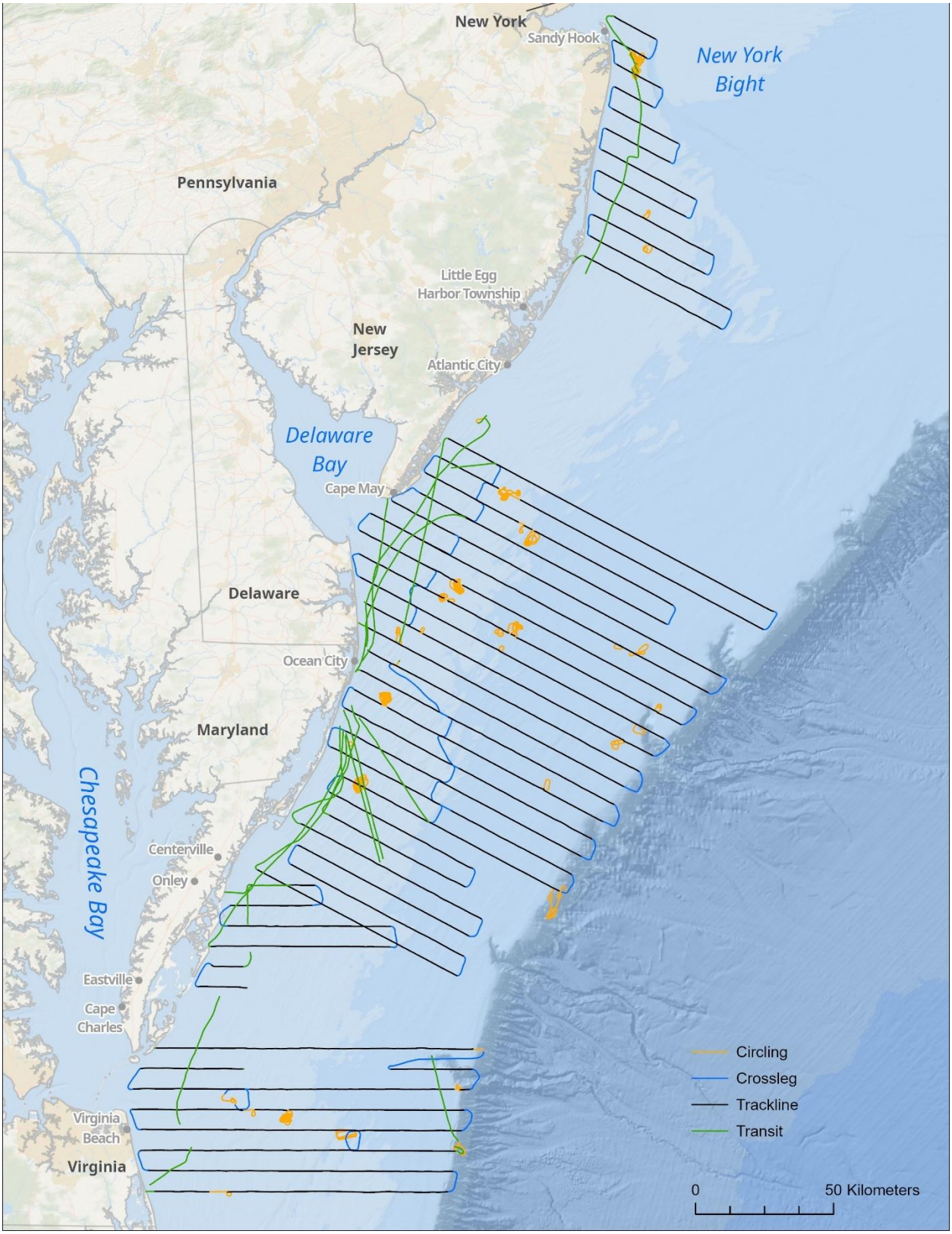


Figure 4. Survey tracks flown (on-effort coverage) during January.

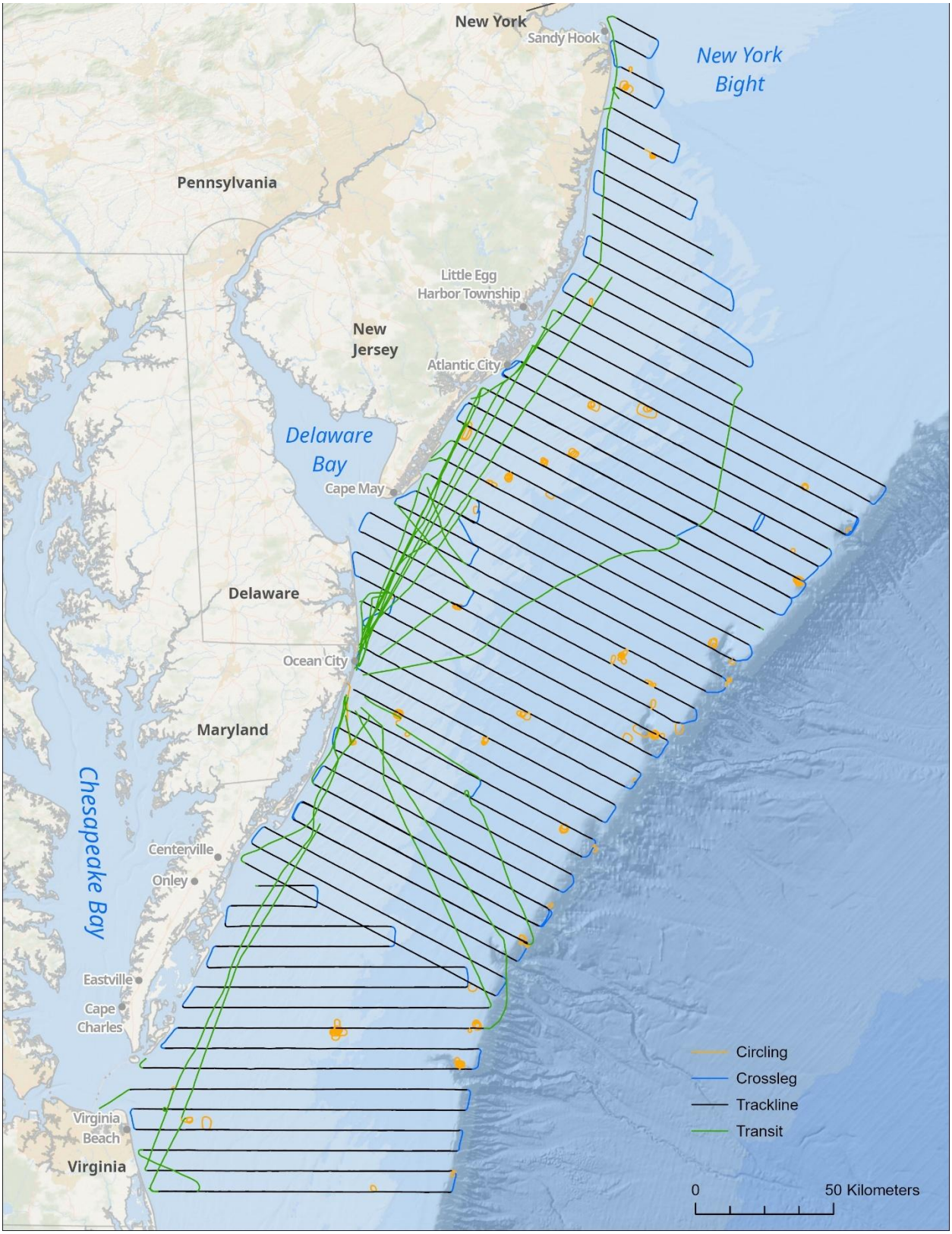


Figure 5. Survey tracks flown (on-effort coverage) during February.

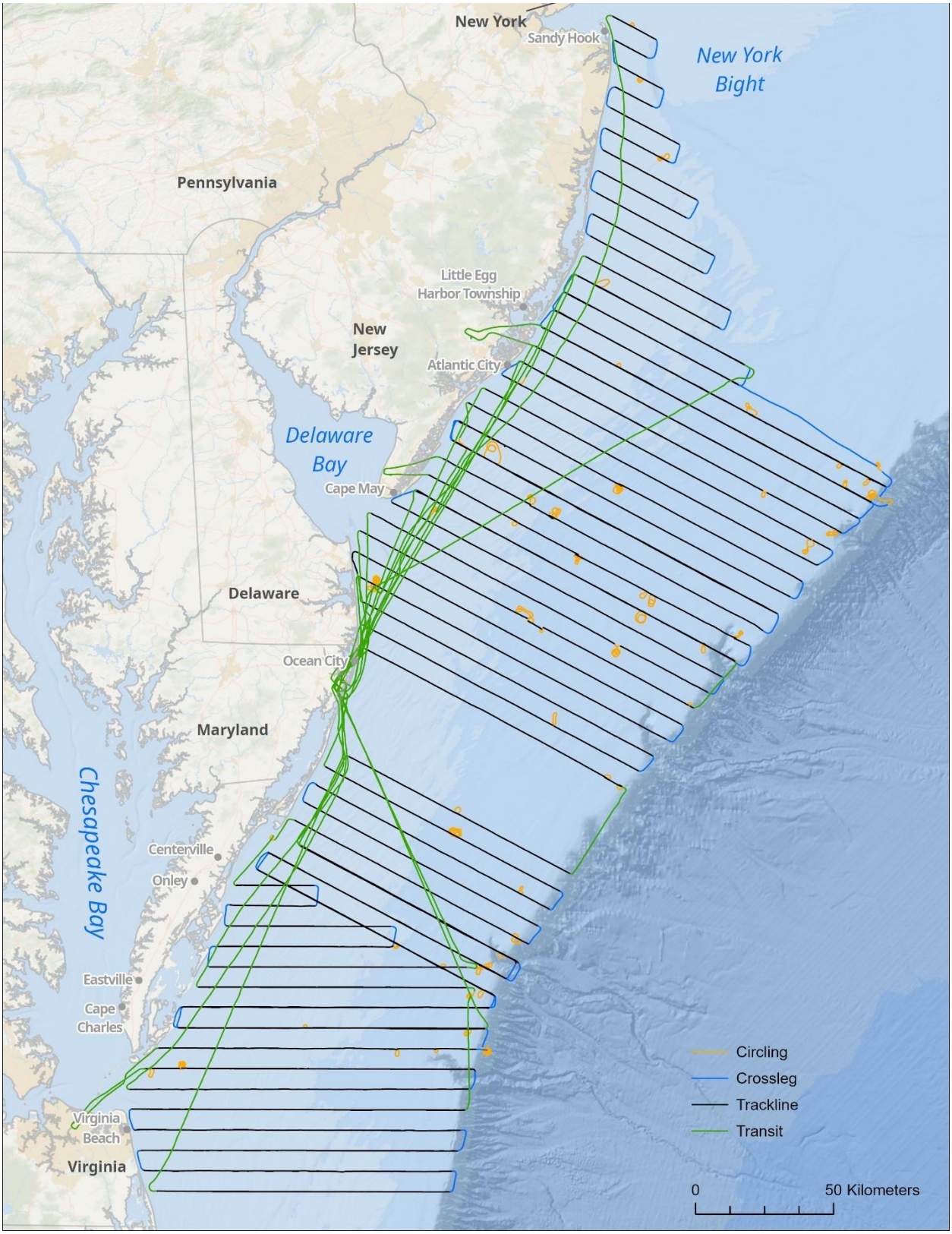


Figure 6. Survey tracks flown (on-effort coverage) during March and early April.

Surveys were flown on 40 days during the survey period (**Table 3**). Poor weather conditions prevented surveys from being flown on other days during the survey period. To maximize coverage of the survey areas during the limited survey period, survey efforts were focused in areas with good survey conditions. During survey days, the BSS ranged from 0 to 6 and was mostly a BSS 2 to 4 (94 percent) which is considered good to moderate sighting conditions (**Figure 7**).

Table 3. Summary of survey days and on-effort coverage

Date	On-Effort Coverage (NM)
12/7/2024	512
12/13/2024	479
12/18/2024	236
12/27/2024	604
12/28/2024	476
12/30/2024	422
12/31/2024	529
1/3/2025	366
1/13/2025	236
1/16/2025	77
1/17/2025	493
1/18/2025	459
1/24/2025	435
1/25/2025	598
1/26/2025	234
1/27/2025	555
1/30/2025	453
2/2/2025	597
2/3/2025	613
2/5/2025	473
2/10/2025	205
2/14/2025	351
2/15/2025	416
2/18/2025	637
2/22/2025	615
2/23/2025	505
2/24/2025	484
2/25/2025	664
2/26/2025	464
3/3/2025	682

Date	On-Effort Coverage (NM)
3/4/2025	566
3/8/2025	188
3/9/2025	439
3/10/2025	521
3/11/2025	792
3/19/2025	780
3/23/2025	559
3/25/2025	387
3/28/2025	541
4/1/2025	149
Total	**18,792**

Note: NM = nautical mile(s)

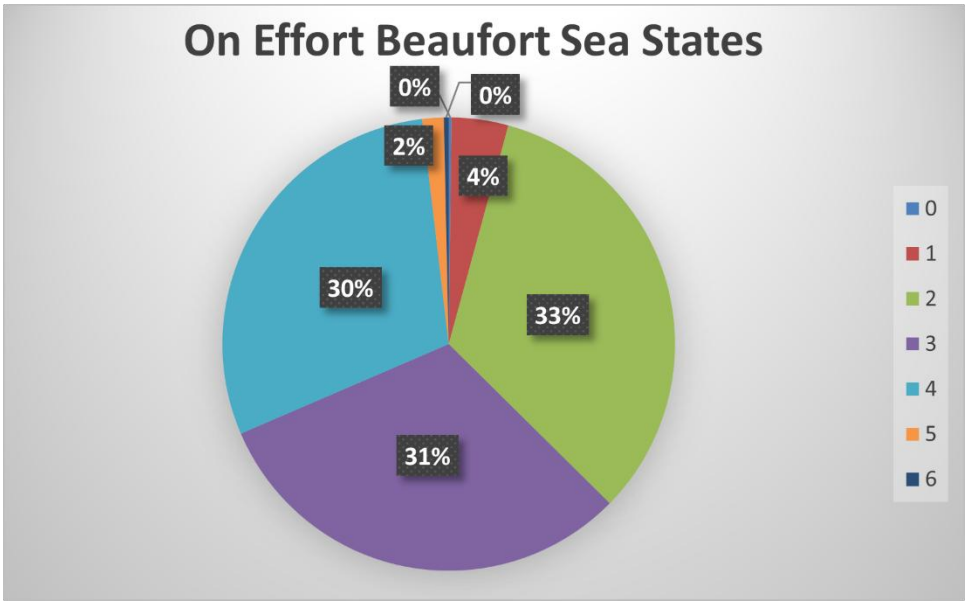


Figure 7. Summary of Beaufort sea states experienced during on-effort visual observations

SIGHTINGS

A total of 199 large whale sightings were recorded from track: 13 right whale, 66 fin whale, 97 humpback whale, 4 sperm whale, 17 minke whale, 1 unidentified beaked whale, and 1 blue whale sightings (**Table 4**, **Figures 8** to **12**).

Right whales were sighted in December, January, February, and March and throughout the study area in waters 4 to 52 NM (7 to 96 km) from shore and 39 to 190 ft (12 to 58 m) in depth (**Figure 8**). They were sighted in all survey areas except the VAWE Survey Area. Dynamic Management Areas were initiated in areas where three or more right whales were observed. A total of 43 unique right whales

were matched to the NARW Catalog. These individuals included 18 females, 22 males, 2 recent-year calves (2023 and 2025), and 1 intermatch whale of unknown sex. Five individuals were sighted on multiple days: females #1706, #3903, and #4617 and males #3530 and #4423. Right whale behaviors observed included slow and moderate swimming, swimming at surface, swimming on side, milling, surface-active groups (SAGs), flippering, apparent nursing, feeding, and diving. A total of four SAGs were sighted during surveys during the latter half of January: a group of 5 individuals off Maryland, a group of 8 off Delaware, and a group of 14 off New Jersey (**Figure 10**). The next SAG was not seen until late February and consisted of eight right whales off Delaware (**Figure 11**).

Fin whales were sighted throughout the survey period and in all survey areas in waters ranging from 3 to 74 NM (6 to 137 km) from shore and 36 to 1,348 ft (11 to 411 m) in depth (**Figure 8**). One fin whale calf was observed during March. Two humpback whale calves were observed: one in January and one in March. Humpback and minke whales were sighted in all survey areas except the VAWE Survey Area (**Figure 8**). Distance from shore and water depths ranged from 2 to 75 NM (4 to 139 km) and 36 to 2,060 ft (11 to 628 m) for humpbacks and 2 to 62 NM (4 to 115 km) and 36 to 423 ft (11 to 129 m) for minke whales. Humpbacks were sighted throughout the survey period. One deceased humpback whale was found floating close to shore (6 NM [11 km]) in the CBEN Survey Area in early March. Minke whales were sighted during February and March. Apparent feeding behaviors were observed for fin, humpback, and minke whales. Defecation was observed from a fin and humpback whale during apparent feeding in the NONJ Survey Area during March.

Sperm whales were sighted in January, February, and March and in the NJDE, MDVA, and CBEN Survey Areas (**Figures 8, 10-12**). Distance from shore and water depths ranged from 54 to 60 NM (100 to 111 km) and 358 to 2,464 ft (109 to 751 m), respectively. In February, a lone blue whale was sighted approximately 54 NM (100 km) from the Chesapeake Bay entrance in waters at a depth of 322 ft (98 m), and an unidentified beaked whale was sighted in deep waters (3,294 ft [1,004 m]) approximately 72 NM (133 m) from the entrance to Delaware Bay (**Figure 11**).

Table 4. Large whale sightings

Date	Latitude*	Longitude*	Survey Area	Trackline #	Group Size	Behavior	Distance from Shore (NM)	Water Depth (m)	NARW Catalog #
North Atlantic Right Whale									
2024-12-07	36.73453	-75.60476	CBEN	9e	2	dive, flukes raised	15.9	22	3950 (m)
2024-12-27	39.62606	-74.05948	NONJ	13a	1	apparent feeding, slow swimming, swimming on side, swimming at surface, milling	5.2	16	2912(f-Limulus)
2024-12-27	39.63019	-74.04760	NONJ	transit	2	slow swimming	5.6	17	2912(f-Limulus)
2025-01-18	37.99061	-75.03739	MDVA	6c	7	slow swimming, blow, mist visible, body contact, not bell to belly, belly to belly contact	9.4	12	3904(f-Champagne), 4080(f), 5195(f),3915(f), 1901(m-Ingalls), G074
2025-01-18	38.25737	-74.95388	MDVA	2c	5	surface-active group	8.1	16	4523(m-Beaker), 3903(f), 3792(m-Coupe), 1706(f)
2025-01-25	36.93484	-75.32789	CBEN	6e	3	moderate swimming, dive, associated with other cetaceans	28.3	28	3934(f), 1706(f), 4146(f)
2025-01-27	38.60369	-74.69312	NJDE	16b	1	swimming at surface	17.1	21	2023CalfOf1204
2025-01-27	38.64363	-74.61087	NJDE	15b	8	surface-active group	19.9	29	4617(f), 5290(f), 4042(m-Martini), 3650(f-Eternity), 4423(m-Nebula), 3845(m-Mogul),3942(f-Warrior),3680(m-Seadragon)
2025-01-30	38.96041	-74.46342	NJDE	10b	14	surface-active group, associated with other cetaceans	14.9	22	3401 (m-Tux), 3530 (m-Ruffian), 3541 (m), 3830 (m-Garlic), 3981 (m), 4091 (f-Quill), 4130 (m), 4423(m-Nebula), 4617(f), 5140 (m), 5215(f)

Date	Latitude*	Longitude*	Survey Area	Trackline #	Group Size	Behavior	Distance from Shore (NM)	Water Depth (m)	NARW Catalog #
2025-02-22	38.42765	-73.92399	NJDE	14b	8	surface-active group, flippering	51.6	58	4360(m-Musketeer), 4353(m), 3970 (m), 4129(m-Goldfish), 3903(f), 4511 (m), 5196 (m), 3280 (f)
2025-02-25	37.20156	-75.13627	CBEN	2e	1	dive, flukes raised, slow swimming	29.4	31	3150(m)
2025-03-11	38.61918	-74.95754	NJDE	transit	2	slow swimming, mother with young, apparent nursing	4.5	18	3503(f-Caterpillar) with 2025 calf
2025-03-19	38.96210	-73.95549	NJDE	circling	2	moderate swimming	32.3	36	3530(m-Ruffian), 3232(f-Lobster)
Fin Whale									
2024-12-28	37.14515	-74.54101	CBEN	crossleg	4	slow swimming	55.9	180	---
2025-01-17	40.30742	-73.87572	NONJ	3a	1	moderate swimming	4.4	23	---
2025-01-24	38.45597	-74.88322	NJDE	19b	2	moderate swimming	8.2	17	---
2025-01-25	36.83639	-74.64515	CBEN	transit	1	moderate swimming	60.4	392	---
2025-01-25	36.93483	-75.46595	CBEN	6e	2		22.8	25	---
2025-01-25	37.00016	-74.63312	CBEN	circling	2		56.2	113	---
2025-01-25	37.10707	-74.55015	CBEN	crossleg	1		57.2	265	---
2025-01-27	38.12404	-73.76578	NJDE	crossleg	1	slow swimming	63.4	276	---
2025-01-27	38.18463	-73.89057	NJDE	17b	1	slow swimming, dive, flukes not raised	58.3	351	---
2025-01-27	38.17824	-73.87893	NJDE	circling	1	slow swimming	57.4	278	---
2025-01-27	38.42863	-74.46006	NJDE	17b	1	slow swimming	27.9	35	---
2025-01-27	38.45210	-74.51423	NJDE	17b	1	slow swimming	25.2	33	---
2025-01-27	38.48969	-74.42758	NJDE	16b	3	associated with other cetaceans, moderate swimming, dive, flukes not raised	30.4	43	---

Date	Latitude*	Longitude*	Survey Area	Trackline #	Group Size	Behavior	Distance from Shore (NM)	Water Depth (m)	NARW Catalog #
2025-01-30	38.82013	-74.31295	NJDE	11b	1	dive, flukes not raised, associated with other cetaceans	24.6	39	---
2025-01-30	38.81472	-74.37129	NJDE	circling	1	apparent feeding	22.4	33	---
2025-02-05	40.25156	-73.92274	NONJ	4a	2	slow swimming	3.2	21	---
2025-02-10	38.58305	-74.63987	NJDE	16b	1	slow swimming	18.9	28	---
2025-02-15	37.33901	-74.56844	MDVA	12c	2	slow swimming	49.9	97	---
2025-02-15	37.45868	-74.36093	MDVA	crossleg	1	slow swimming	52.6	245	---
2025-02-18	36.66619	-74.69067	CBEN	10e	1	slow swimming	58.4	245	---
2025-02-18	36.73062	-74.65946	CBEN	crossleg	2	slow swimming	60.2	254	---
2025-02-22	38.66354	-74.29859	NJDE	13b	1	slow swimming	30.5	41	---
2025-02-22	38.59373	-74.49170	NJDE	15b	2	slow swimming	26.7	31	---
2025-02-22	38.31930	-73.84825	NJDE	15b	1	slow swimming	57.2	77	---
2025-02-22	38.19171	-73.72512	NJDE	crossleg	1	slow swimming	64.1	151	---
2025-02-22	38.23487	-73.82935	NJDE	16b	1	slow swimming	58.5	155	---
2025-02-22	38.57818	-74.63463	NJDE	16b	1	slow swimming	20.4	29	---
2025-02-23	37.49114	-74.39087	MDVA	9c	1	slow swimming	51.1	121	---
2025-02-24	38.18413	-73.88860	NJDE	17b	2	slow swimming	56.9	129	---
2025-02-24	38.15422	-73.81721	NJDE	17b	1	slow swimming	60.6	119	---
2025-02-24	38.12214	-73.77015	NJDE	crossleg	1	slow swimming	63.2	249	---
2025-02-24	38.13343	-73.94644	NJDE	18b	1	slow swimming	55.0	110	---
2025-02-25	37.20008	-74.55964	CBEN	2e	1	slow swimming	53.9	117	---
2025-02-25	37.07899	-74.64352	CBEN	circling	1	slow swimming	53.7	318	---
2025-02-25	39.05663	-74.15062	NJDE	7b	2	slow swimming	21.0	29	---
2025-02-26	38.74060	-73.24345	NJDE	6b	1	slow swimming	65.9	83	---
2025-02-26	38.72615	-73.08132	NJDE	crossleg	2	slow swimming	72.3	154	---
2025-02-26	38.82722	-72.97477	NJDE	crossleg	1	slow swimming	73.0	180	---

Date	Latitude*	Longitude*	Survey Area	Trackline #	Group Size	Behavior	Distance from Shore (NM)	Water Depth (m)	NARW Catalog #
2025-02-26	38.90338	-73.09153	NJDE	3b	1	moderate swimming	66.0	79	---
2025-03-04	37.30090	-74.59182	VAWE/CBEN	transit	1		49.9	94	---
2025-03-10	40.29418	-73.84359	NONJ	3a	1	slow swimming, defecation	5.9	26	---
2025-03-10	40.03412	-73.76739	NONJ	circling	3	apparent feeding	12.8	26	---
2025-03-10	40.03784	-73.76363	NONJ	circling	5	apparent feeding	12.9	26	---
2025-03-10	40.03213	-73.76307	NONJ	6a	3	apparent feeding	13.0	28	---
2025-03-11	39.29775	-74.38773	NJDE	transit	1		4.1	11	---
2025-03-11	38.90687	-72.92903	NJDE	2b	1	slow swimming	72.5	116	---
2025-03-11	39.35286	-73.95699	NJDE	2b	1		17.7	25	---
2025-03-11	38.80724	-73.04831	NJDE	4b	2		70.7	175	---
2025-03-19	39.04960	-74.14384	NJDE	7b	2	moderate swimming	22.5	32	---
2025-03-19	38.96603	-73.95030	NJDE	7b	1	apparent feeding	32.8	36	---
2025-03-19	38.87105	-74.25023	NJDE	10b	2	moderate swimming	26.5	42	---
2025-03-19	38.89113	-74.21638	NJDE	circling	3	moderate swimming	26.2	41	---
2025-03-19	38.90471	-74.33180	NJDE	10b	2	slow swimming	20.6	34	---
2025-03-19	38.85145	-74.38847	NJDE	11b	3	slow swimming	20.1	31	---
2025-03-19	38.74242	-74.13191	NJDE	11b	2	slow swimming	35.0	45	---
2025-03-19	38.46420	-73.48421	NJDE	11b	2	moderate swimming	69.3	104	---
2025-03-19	38.81097	-74.46814	NJDE	12b	1	slow swimming	18.7	24	---
2025-03-23	37.39766	-74.52956	MDVA	11c	2	moderate swimming	48.6	104	---
2025-03-23	37.44340	-74.46194	MDVA	10c	1		49.8	411	---
2025-03-23	38.19398	-74.43439	NJDE	20b	2		30.2	39	---
2025-03-25	38.44993	-73.62550	NJDE	12b	1	slow swimming	65.4	108	---
2025-03-25	38.24397	-73.67499	NJDE	15b	3	slow swimming	65.8	135	---
2025-03-25	38.04273	-73.90911	NJDE	19b	1	slow swimming	58.2	135	---

Date	Latitude*	Longitude*	Survey Area	Trackline #	Group Size	Behavior	Distance from Shore (NM)	Water Depth (m)	NARW Catalog #
2025-03-28	39.19058	-73.40532	NJDE	1b	3	slow swimming, mother with young	44.0	51	---
2025-03-28	38.90541	-72.92221	NJDE	2b	1	fast swimming	73.4	144	---
2025-03-28	38.85645	-72.93567	NJDE	crossleg	1	moderate swimming	73.7	150	---
Humpback Whale									
2024-12-07	36.73251	-75.83932	CBEN	9e	1	associated with other cetaceans, slow swimming	5.2	16	---
2024-12-27	38.63503	-74.80922	NJDE	transit	2	slow swimming	11.1	26	---
2024-12-27	39.72357	-73.75126	NONJ	10a	2	slow swimming	17.0	25	---
2024-12-27	39.82255	-73.80570	NONJ	9a	1	lobtailing/tail slashing	12.6	23	---
2024-12-27	40.18516	-73.95449	NONJ	5a	1	slow swimming	2.5	15	---
2025-01-03	36.66548	-75.57445	CBEN	10e	1	slow swimming, dive, flukes raised	15.1	19	---
2025-01-03	37.16727	-75.69106	CBEN	transit	1	slow swimming	5.6	15	---
2025-01-16	37.96667	-75.01694	MDVA	transit	1	slow swimming	12.8	17	---
2025-01-17	40.33436	-73.86966	NONJ	transit	1	moderate swimming	4.5	24	---
2025-01-17	40.33782	-73.86070	NONJ	circling	2	mother with young, slow swimming, dive, flukes raised	5.1	26	---
2025-01-17	40.37169	-73.88738	NONJ	transit	2		3.9	24	---
2025-01-17	39.83588	-73.83767	NONJ	9a	1	flippering	12.4	21	---
2025-01-17	39.74860	-73.81270	NONJ	10a	3	slow swimming	11.8	23	---
2025-01-24	38.38013	-74.70242	NJDE	19b	1	slow swimming	16.8	32	---
2025-01-24	37.82607	-74.11353	MDVA	3c	1	moderate swimming	53.8	218	---
2025-01-24	37.64230	-74.21067	MDVA	crossleg	2	slow swimming	53.9	355	---
2025-01-24	37.65032	-74.23256	MDVA	6c	2	slow swimming	54.2	379	---
2025-01-25	36.94834	-75.54838	CBEN	crossleg	2		19.0	22	---

Date	Latitude*	Longitude*	Survey Area	Trackline #	Group Size	Behavior	Distance from Shore (NM)	Water Depth (m)	NARW Catalog #
2025-01-25	36.95740	-75.55967	CBEN	circling	1	slow swimming, breach	18.3	24	---
2025-01-25	36.96324	-75.58375	CBEN	circling	2		17.2	21	---
2025-01-25	37.00146	-74.65873	CBEN	5e	2		55.5	151	---
2025-01-25	37.12296	-74.53705	CBEN	crossleg	2		56.6	322	---
2025-01-30	38.83871	-74.35679	NJDE	11b	2	slow swimming	22.0	32	---
2025-01-30	38.94240	-74.42606	NJDE	circling	1	slow swimming	16.3	24	---
2025-02-02	39.28271	-73.97119	NJDE	3b	2	slow swimming	19.0	30	---
2025-02-02	39.22095	-73.82705	NJDE	3b	3	slow swimming	26.7	36	---
2025-02-02	39.21188	-73.82269	NJDE	circling	2	slow swimming	27.2	40	---
2025-02-03	39.04630	-74.30842	NJDE	8b	1	slow swimming	18.3	24	---
2025-02-03	39.07614	-74.37874	NJDE	8b	1	slow swimming	14.6	24	---
2025-02-03	40.04893	-73.80291	NONJ	circling	2	slow swimming	11.2	26	---
2025-02-05	40.31615	-73.89588	NONJ	3a	1	flippering	4.1	22	---
2025-02-05	39.01126	-74.40507	NJDE	9b	1	slow swimming	14.8	21	---
2025-02-05	38.96917	-74.48540	NJDE	10b	3	slow swimming	12.4	21	---
2025-02-18	36.90419	-75.76700	CBEN	transit	1	slow swimming	12.8	18	---
2025-02-18	36.86829	-75.67088	CBEN	7e	1	slow swimming	14.6	22	---
2025-02-18	36.86778	-75.74143	CBEN	7e	1	slow swimming	11.5	20	---
2025-02-18	36.73457	-75.56827	CBEN	9e	1	slow swimming	18.6	23	---
2025-02-18	36.99828	-75.79651	CBEN	transit	2	slow swimming	8.8	13	---
2025-02-22	38.39448	-73.49339	NJDE	12b	1	slow swimming	70.7	628	---
2025-02-22	38.43284	-73.58463	NJDE	12b	1	slow swimming	66.3	242	---
2025-02-22	38.30965	-73.82714	NJDE	15b	2	slow swimming	58.5	87	---
2025-02-22	38.25892	-73.83506	NJDE	circling	2	slow swimming	58.4	103	---
2025-02-23	37.96456	-74.97030	MDVA	6c	1	slow swimming	13.1	23	---
2025-02-23	37.48327	-74.37031	MDVA	9c	1	slow swimming	51.4	127	---

Date	Latitude*	Longitude*	Survey Area	Trackline #	Group Size	Behavior	Distance from Shore (NM)	Water Depth (m)	NARW Catalog #
2025-02-23	37.86159	-74.19653	MDVA	3c	1	slow swimming	49.7	102	---
2025-02-23	38.16583	-74.84233	MDVA	transit	1	slow swimming	14.9	21	---
2025-02-23	38.19028	-74.88938	MDVA	transit	1	slow swimming	11.6	23	---
2025-02-24	38.61513	-74.90239	NJDE	17b	1	motionless at surface	7.4	20	---
2025-02-24	38.60618	-74.88566	NJDE	17b	1	slow swimming	8.2	20	---
2025-02-24	38.49598	-74.61976	NJDE	17b	1	motionless at surface	20.3	22	---
2025-02-24	38.52318	-74.86385	NJDE	18b	2	slow swimming	8.9	20	---
2025-02-24	38.22723	-74.87810	MDVA	2c	1	slow swimming	11.4	22	---
2025-02-25	38.18730	-75.02616	MDVA	transit	1		5.9	18	---
2025-02-25	37.20866	-74.57956	CBEN	circling	2		53.2	100	---
2025-02-25	37.20100	-74.58828	CBEN	2e	2	slow swimming	52.8	95	---
2025-02-25	37.07738	-74.62389	CBEN	circling	1		54.6	101	---
2025-02-25++	38.12981	-75.08438	MDVA	transit	1	slow swimming	4.3	12	---
2025-02-25	39.03738	-74.28815	NJDE	8b	2	slow swimming	19.8	26	---
2025-02-25	39.03158	-74.27547	NJDE	circling	2	slow swimming, bubbles observed	20.0	26	---
2025-02-25	39.06891	-74.17494	NJDE	circling	2	slow swimming	20.7	31	---
2025-02-26	38.63608	-74.93297	NJDE	transit	1	slow swimming	6.2	17	---
2025-02-26	38.80395	-72.99513	NJDE	crossleg	2	slow swimming	72.2	327	---
2025-03-03	37.26735	-74.55557	CBEN	1e	1		52.5	99	---
2025-03-03	37.06750	-75.78086	CBEN	4e	1	dead, in water	5.9	11	---
2025-03-09	37.50810	-74.40530	MDVA	circling	1	dive, flukes not raised, traveling	50.0	98	---
2025-03-09	37.63767	-74.38167	MDVA	7c	1	slow swimming	46.6	79	---
2025-03-10	38.64975	-74.93952	NJDE	transit	1	slow swimming	5.9	16	---
2025-03-10	38.79727	-74.85513	NJDE	transit	1	slow swimming	8.4	13	---
2025-03-10	39.02262	-74.60939	NJDE	transit	1	slow swimming	6.6	14	---

Date	Latitude*	Longitude*	Survey Area	Trackline #	Group Size	Behavior	Distance from Shore (NM)	Water Depth (m)	NARW Catalog #
2025-03-10	40.07087	-73.93271	NONJ	transit	1	breach	4.9	22	---
2025-03-10	40.02164	-73.73756	NONJ	6a	3	apparent feeding	14.3	32	---
2025-03-10	40.03389	-73.76824	NONJ	6a	1	apparent feeding, defecation	12.6	26	---
2025-03-11	38.51558	-74.97712	NJDE	transit	1	moderate swimming	3.5	15	---
2025-03-11	38.97775	-72.91418	NJDE	1b	1		71.1	99	---
2025-03-11	39.31975	-74.05815	NJDE	3b	1	motionless at surface	14.4	22	---
2025-03-11	38.82424	-72.97037	NJDE	crossleg	1		73.3	222	---
2025-03-11	38.79443	-73.09417	NJDE	circling	1		69.5	98	---
2025-03-11	38.78159	-73.16284	NJDE	5b	1		67.9	97	---
2025-03-19	38.61398	-73.29725	NJDE	8b	1	slow swimming	68.8	103	---
2025-03-19	38.92667	-74.02555	NJDE	8b	1	moderate swimming	31.7	34	---
2025-03-19	38.77439	-74.02595	NJDE	10b	1	slow swimming	37.5	46	---
2025-03-19	38.93915	-74.32682	NJDE	circling	3	milling	20.3	34	---
2025-03-19	38.92726	-74.37877	NJDE	10b	1	slow swimming	18.6	24	---
2025-03-19	38.74242	-74.13191	NJDE	11b	2	slow swimming	34.5	42	---
2025-03-23	37.83606	-74.87136	MDVA	transit	1		21.0	25	---
2025-03-23	37.25867	-74.55983	CBEN	transit	1		52.8	99	---
2025-03-23	37.22707	-74.53243	CBEN	transit	2	slow swimming	54.9	154	---
2025-03-23	37.33264	-74.55562	MDVA	12c	1		49.9	99	---
2025-03-23	37.40961	-74.55548	MDVA	11c	3	mom and calf	48.2	96	---
2025-03-25	38.50436	-74.27669	NJDE	15b	1	slow swimming	35.7	39	---
2025-03-25	38.55749	-74.38331	NJDE	circling	5	apparent feeding, bubbles observed	31.6	42	---
2025-03-25	38.54059	-74.32720	NJDE	circling	3	slow swimming	34.2	45	---
2025-03-25	38.56259	-74.41329	NJDE	15b	4	apparent feeding, bubbles observed	30.2	41	---

Date	Latitude*	Longitude*	Survey Area	Trackline #	Group Size	Behavior	Distance from Shore (NM)	Water Depth (m)	NARW Catalog #
2025-03-25	38.18413	-74.23932	NJDE	19b	1	milling	40.4	50	---
2025-03-28	39.06178	-74.04844	NJDE	transit	1	moderate swimming	24.7	32	---
2025-03-28	39.01514	-72.87994	NONJ/NJDE	crossleg	3	motionless at surface	71.3	102	---
2025-03-28	38.95213	-72.82620	NONJ/NJDE	crossleg	2	moderate swimming	75.2	279	---
Minke Whale									
2025-02-24	38.17186	-73.86031	NJDE	17b	1	motionless at surface	58.3	543	---
2025-02-24	38.14367	-73.79472	NJDE	17b	1	slow swimming	61.7	121	---
2025-02-24	38.41801	-74.79357	NJDE	19b	1	slow swimming	12.2	25	---
2025-03-10	38.88623	-74.72406	NJDE	transit	1	fast swimming	6.7	14	---
2025-03-11	38.55971	-74.94621	NJDE	transit	1		5.2	16	---
2025-03-11	39.53263	-73.84154	NONJ	13a	1	apparent feeding, associated with birds	16.8	29	---
2025-03-11	38.84144	-74.80990	NJDE	transit	1		6.5	15	---
2025-03-19	38.82757	-74.15038	NJDE	10b	1	moderate swimming	30.8	40	---
2025-03-19	38.72826	-74.12555	NJDE	circling	1	moderate swimming	35.0	47	---
2025-03-23	37.19850	-74.58969	CBEN	2e	1	moderate swimming	52.6	94	---
2025-03-23	37.47642	-74.88873	MDVA	12c	1	dive, flukes not raised	32.9	37	---
2025-03-25	38.48773	-75.01518	NJDE	transit	1	slow swimming	1.6	11	---
2025-03-25	38.52567	-74.33988	NJDE	15b	1	slow swimming, associated with birds	33.4	44	---
2025-03-25	38.56591	-74.37336	NJDE	circling	2	milling	32.1	41	---
2025-03-25	38.57304	-74.43877	NJDE	15b	1	slow swimming	29.1	40	---
2025-03-25	38.28309	-74.29529	NJDE	18b	1	slow swimming	36.8	50	---
2025-03-25	38.15058	-74.15977	NJDE	19b	1	moderate swimming	44.9	65	---
Sperm Whale									
2025-01-27	38.22844	-73.81536	NJDE	16b	1	slow swimming	59.8	109	---
2025-02-23	37.59155	-74.27434	MDVA	7c	1	moderate swimming	53.6	368	---

Date	Latitude*	Longitude*	Survey Area	Trackline #	Group Size	Behavior	Distance from Shore (NM)	Water Depth (m)	NARW Catalog #
2025-02-23	37.78553	-74.08297	MDVA	crossleg	1	slow swimming	56.1	514	---
2025-03-04	37.04632	-74.59676	CBEN	transit	1	slow swimming	56.5	751	---
Blue Whale									
2025-02-25	37.06681	-74.62614	CBEN	4e	1	slow swimming	54.1	98	---
Unidentified Beaked Whale									
2025-02-22	38.32450	-73.52472	NJDE	crossleg	5		72.1	1004	---

Notes:

*Initial positions are provided. If no initial position was recorded, then the actual position is provided.

++Whale was seen off effort.

CBEN = Chesapeake Bay entrance Survey Area; m = meter(s); MDVA = Maryland and Virginia Survey Area; NARW = North Atlantic Right Whale; NJDE = southern New Jersey and the Delaware Bay entrance Survey Area; NM = nautical mile(s); NONJ = northern New Jersey Survey Area; VAWE = Virginia "Wedge" Survey Area

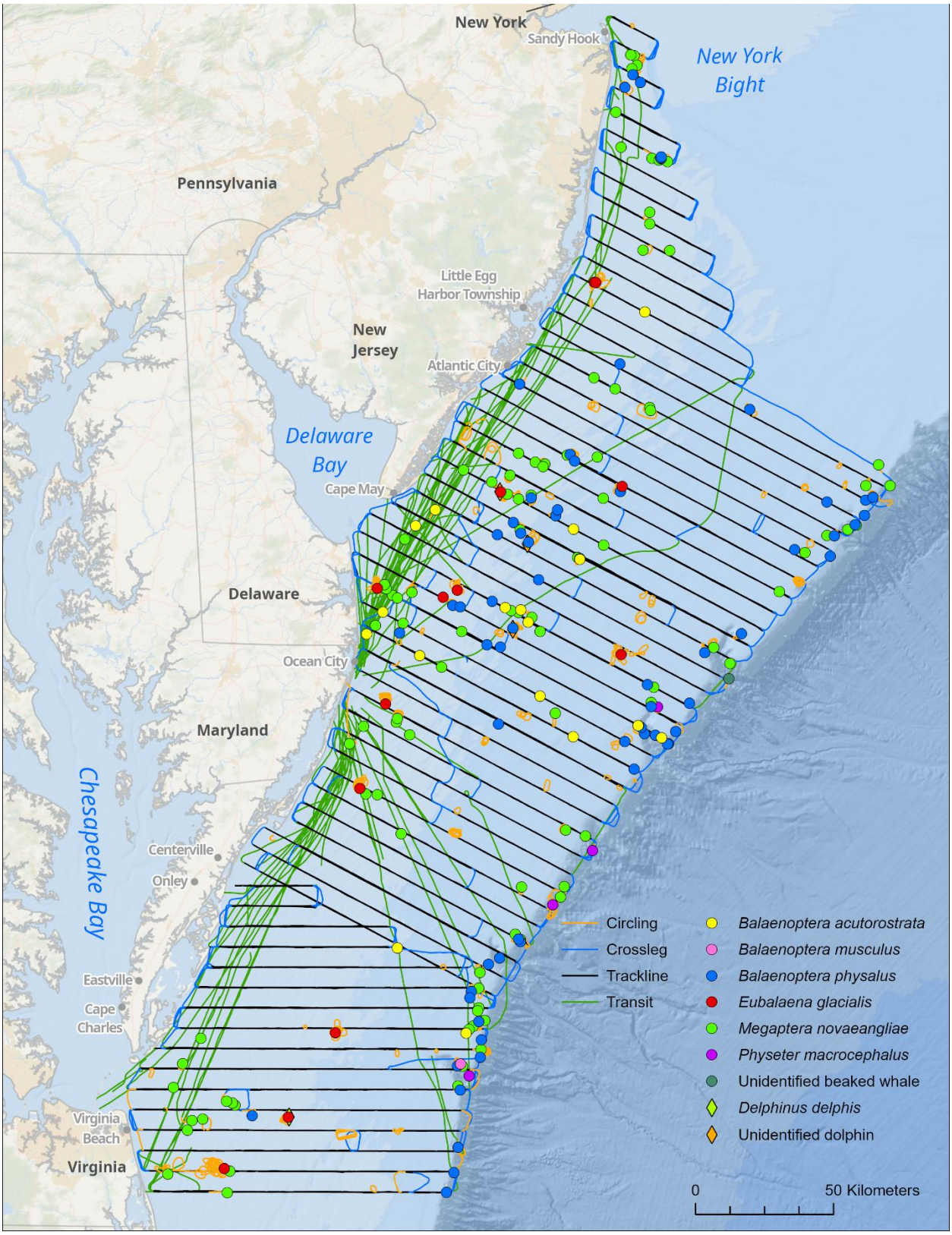


Figure 8. Sightings recorded during the survey period

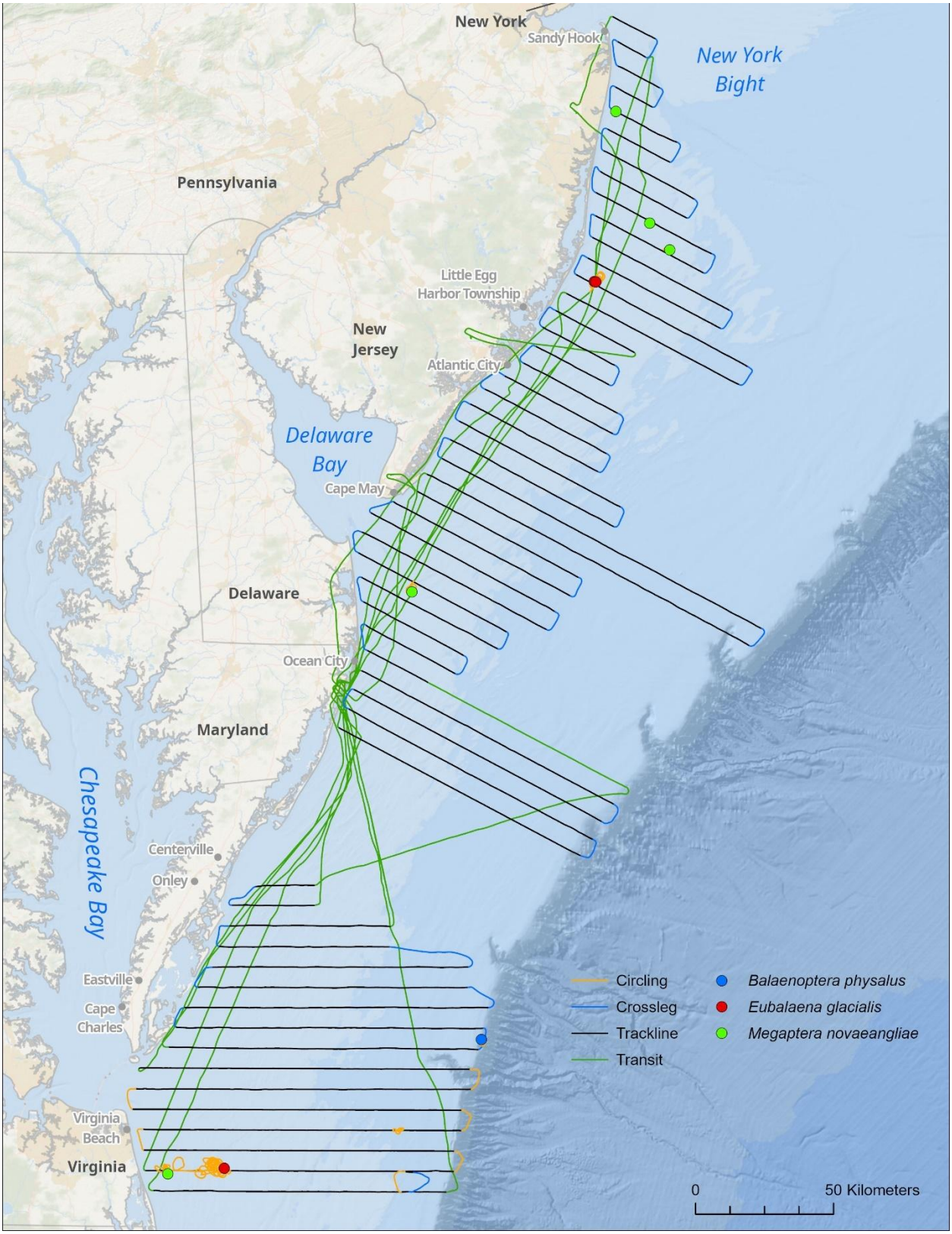


Figure 9. Sightings recorded during December

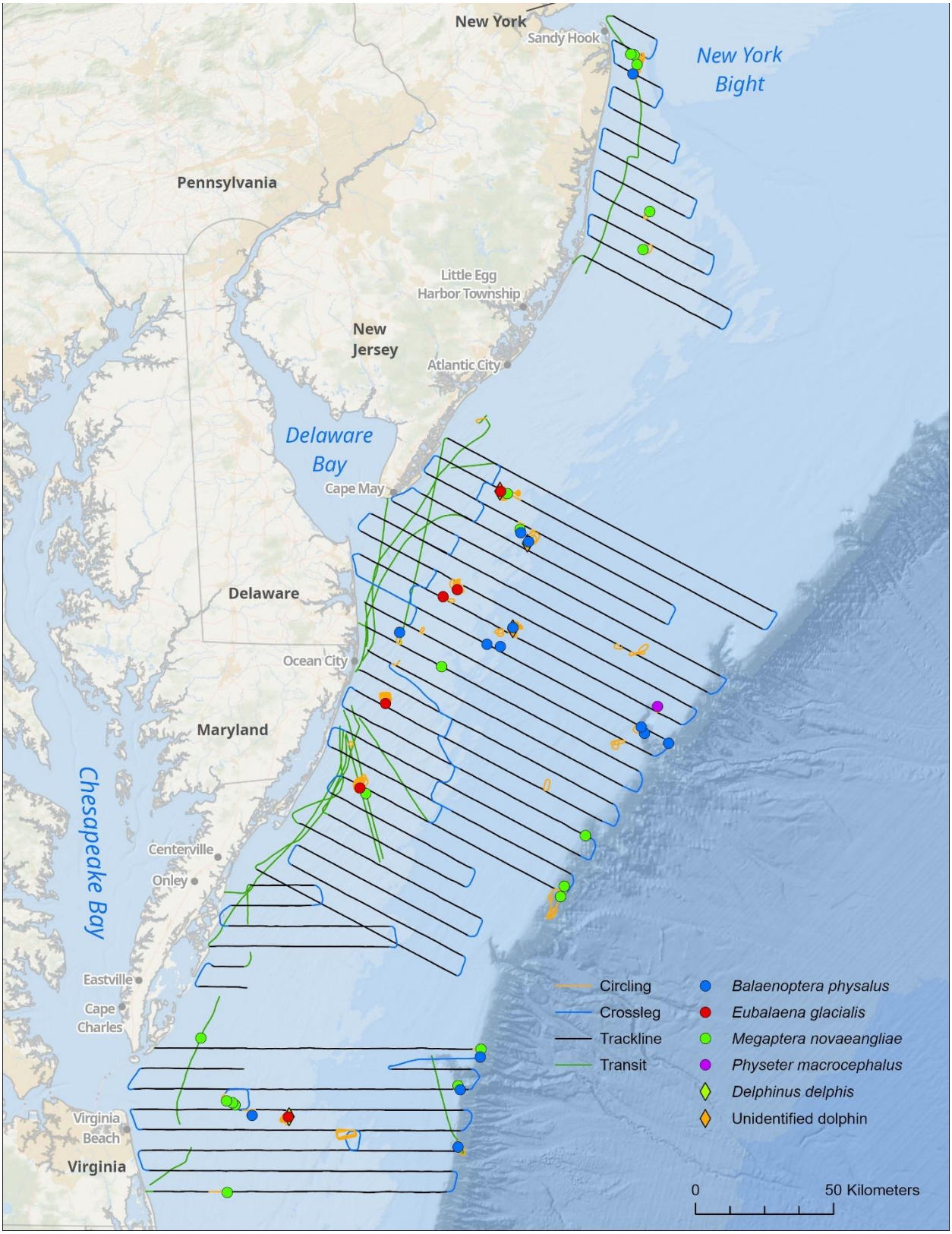


Figure 10. Sightings recorded during January

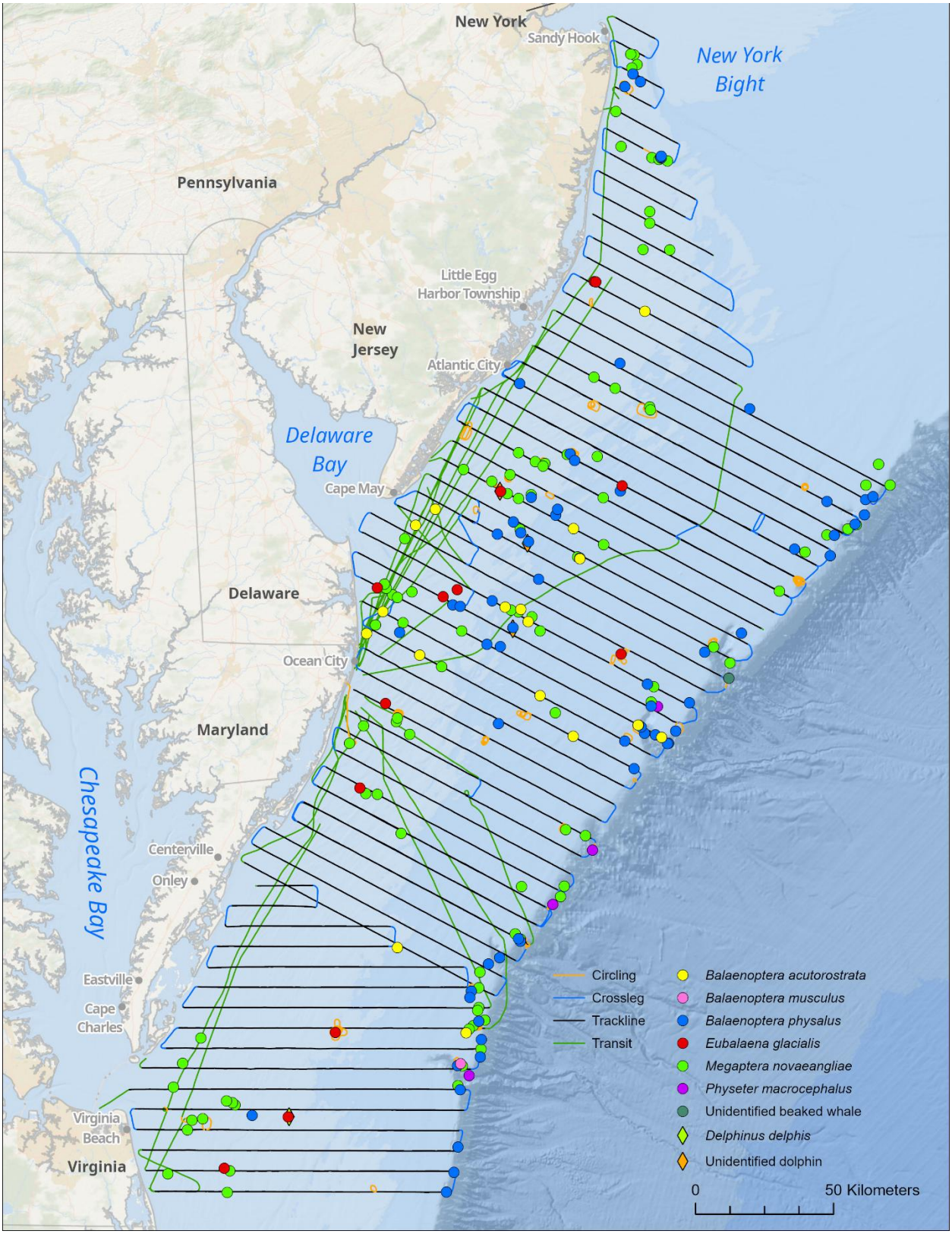


Figure 11. Sightings recorded during February

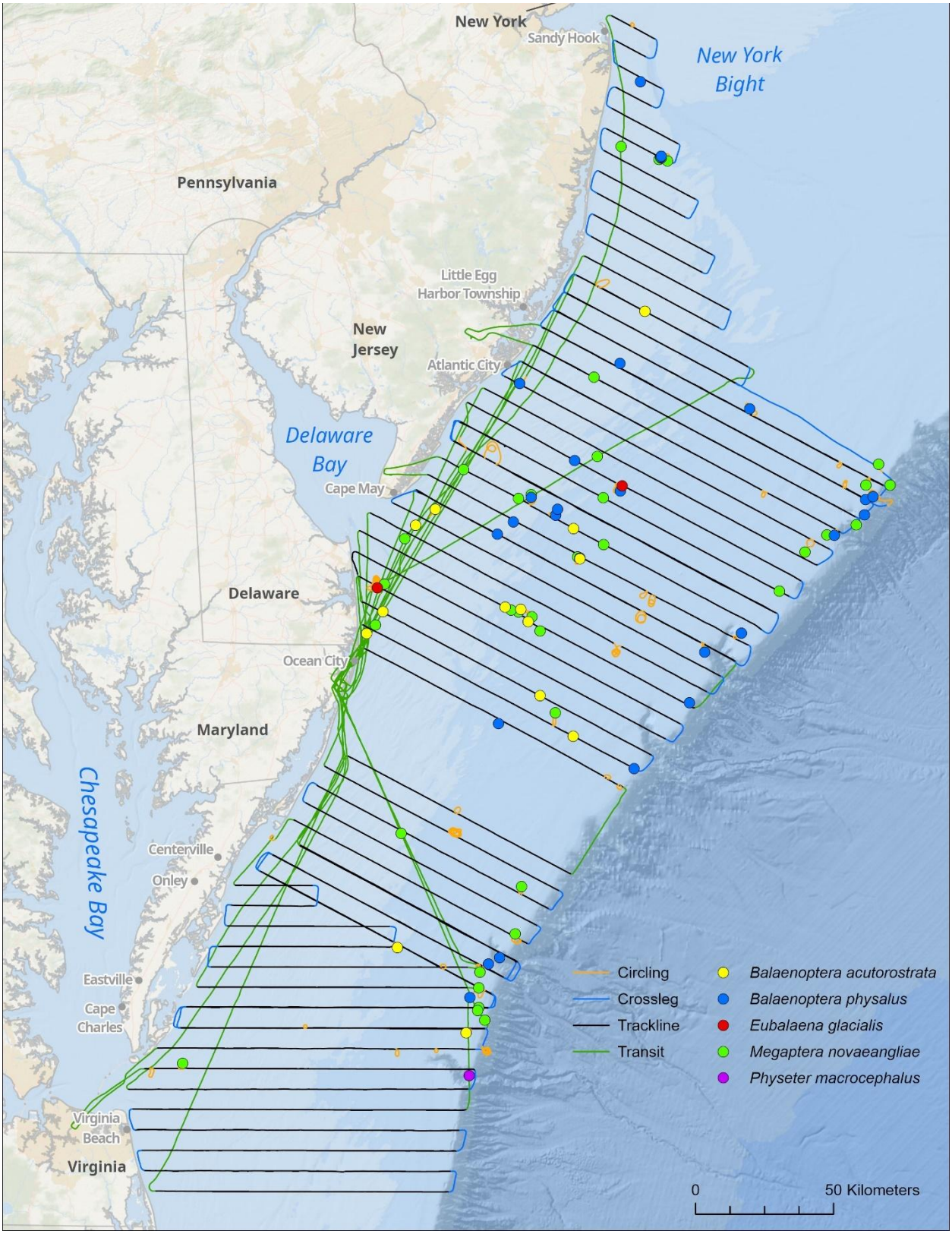


Figure 12. Sightings recorded during March and early April

LITERATURE CITED

Buckland, S.T., D.R. Anderson, K.P. Burnham, J.L. Laake, D.L. Borchers, and L. Thomas. 2001. Introduction to distance sampling: Estimating abundance of biological populations. New York, New York: Oxford University Press.

Johnson, H., D. Morrison, and C. Taggart. 2021. WhaleMap: a tool to collate and display whale survey results in near real-time. Journal of Open Source Software 6(62):3094. https://doi.org/10.21105/joss.03094

Kenney, R.D. 2023. The North Atlantic Right Whale Consortium database: A guide for users and contributors, Version 8 (revised October 2023). North Atlantic Right Whale Consortium Reference Document 2023-01: Prepared by University of Rhode Island.

Kraus, S.D., R.D. Kenney, and L. Thomas. 2019. A framework for studying the effects of offshore wind development on marine mammals and turtles. Prepared for the Massachusetts Clean Energy Center and the Bureau of Ocean Energy Management by the Anderson Cabot Center for Ocean Life and the Centre for Research into Ecological and Environmental Modelling. 48.

Linden, D.W. 2024. Population size estimation of North Atlantic right whales from 1990-2023. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

APPENDIX A: EFFORT AND TRACK CATEGORIES

Categories of effort and tracks recorded in the "SurveyTrack" tables in the Access database files

Effort Category	Description
On Effort	• Survey team maintained survey altitude (1,500 feet) and speed (100 knots), recorded and regularly updated environmental conditions, and actively searched for large whales. • Survey team was "on effort" during transit over water, when on tracklines, on the crosslegs between tracklines, when circling animals, and when the survey team temporarily deviated from tracklines due to military operations.
Off Effort	• Survey team did not consistently maintain survey altitude or speed. • Survey team was "off effort" during transit over land. • If slightly off survey parameters during any other time, "off effort" was utilized while still observing and recording off-effort sightings.
Track Category	**Description**
Transit	• Survey team was transiting over land or water. Survey plane maintained survey altitude and speed over water when possible.
Trackline #	• When on the trackline, we recorded the trackline number. Survey plane maintained survey altitude and speed.
Crossleg	• Survey plane flew a direct path from one trackline to the next and maintained survey altitude and speed.
Circling	• Survey plane broke from trackline to circle whales or potential whales.
Military Deviation	• Survey plane temporarily deviated from the trackline due to military operations and maintained survey altitude and speed.

APPENDIX B: RIGHT WHALE DATASHEET

Sighting # _____ Clearwater Marine Aquarium Research Institute (CMARI/GA) Whale Sighting Data Page ____ of ____

Date: / /	Initial Time: (L)	Initial Lat: ° N	Initial Long: ° W	Camera:	Photographer:
# Whales:	Final Time: (L)	Final Lat: ° N	Final Long: ° W	Heading:	Frame #s:

M C A J

M C A J

M C A J

Comments

- ☐ Slow swimming, <1 knot (08)
- ☐ Moderate swimming, 1-10 knots (07)
- ☐ Fast swimming, >10 knots (06)
- ☐ Swimming upside down (15)
- ☐ Swimming on side (16)
- ☐ Swimming at surface (17)
- ☐ Swimming in one direction (34) (LIN TR)
- ☐ Milling (78)
- ☐ Logging/ motionless at surface (22) (LOG)
- ☐ Entangled (92) (FRST ENTGL) (ENTGL)*
- ☐ Associated w/cetaceans (5) (W/BBJDO) etc.*
- ☐ Dive, flukes not raised (23)
- ☐ Dive, flukes raised (24)
- ☐ Blow, mist visible (25)
- ☐ Mother with young (40)*
- ☐ Apparent nursing (42) (NURS)
- ☐ Non-sag body contact (44) (BOD CNT)
- ☐ Rolling, not in SAG (15-16) (ROLL)
- ☐ Breach (13) (BRCH)
- ☐ Flippering/ flipper slapping (19) (FLIP)
- ☐ Lobtail, tail slash (20) (LBTL) (TL SLSH)*
- ☐ Head lift (HD LFT)
- ☐ Surface active group (90) (SAG)
- ☐ Approaches to SAG (APPR)
- ☐ Focal Animal (FCL)
- ☐ Bubbles (58) (BUBLS) (UW EXH)*
- ☐ Distinct sub-groups (65)
- ☐ Belly to belly (67) (BEL/BEL)
- ☐ Belly up (BEL UP)
- ☐ Black belly (BLK BEL)
- ☐ Black chin (BLK CHN)
- ☐ White belly (WH BEL)
- ☐ White chin (WH CHN)

*See NEAq descriptions for proper NEAq behavior codes, M=Mother, C=Calf, A=Adult, J=Juvenile

APPENDIX C: TRACKLINES COMPLETED PER SURVEY AREA AND MONTH

Tracklines completed each month (x=completed 1 time during the month; xx=completed 2 times during the month; p=partially completed).

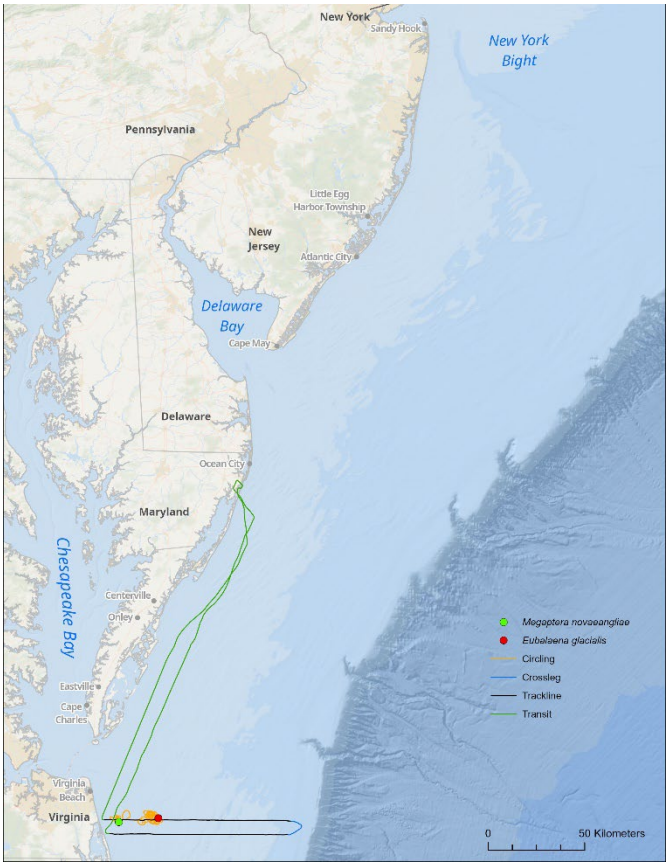
Trackline	December	January	February	March	April
NONJ Survey Area					
1a	x	x	x	x	
2a	x	x	x	x	
3a	x	x	x	x	
4a	x	x	x	x	
5a	x	x	x	x	
6a	x	x	x	x	
7a	x	x	x	x	
8a	x	x	x	x	
9a	x	x	x	x	
10a	x	x	x	x	
11a	x	x	x	x	
12a	x	x	x	x	
13a	x		x	xx	
14a	x		x	xx	
NJDE Survey Area					
1b	p		x	xx	
2b	p		x	xx	
3b	p		xx	xx	
4b	p		xx	x	p
5b	p		xx	x	
6b	p		xx	x	
7b	p		xx	x	
8b	p		xx	x	p
9b	p	x	x	x	p
10b	x	x	x	x	
11b	x	p	x	x	
12b	p	p	x	x	
13b	p	x	x	x	
14b	p	x	x	x	
15b	p	x	x	x	
16b	p	x	x	x	
17b	p	x	x	x	
18b	p	x	x	x	
19b	p	x	x	x	
20b	p	x	x	x	

Trackline	December	January	February	March	April
MDVA Survey Area					
1c	x	x	x		
2c	x	x	x		
3c	x	x	x		
4c	x	x	x		
5c		x	x	x	
6c		x	x	x	
7c		p	x	x	
8c		p	x	x	
9c		p	x	x	
10c		p	x	x	
11c		p	x	x	
12c		p	x	x	
VAWE Survey Area					
1d	x	x	x	x	
2d	x	x	x	x	
3d	x	x	x	x	
4d	x	x	x	x	
5d	x	p	x	x	
6d	x	p	x	x	
CBEN Survey Area					
1e	x		x	x	
2e	x		x	x	
3e	x	x	x	x	
4e	x	x	x	x	
5e	x	x	x	x	
6e	x	x	x	x	
7e	x	x	x	x	
8e	x	x	x	x	
9e	x	x	x	x	
10e	x	x	x	x	

APPENDIX D: POST-FLIGHT REPORTS

RIGHT WHALE AERIAL SURVEY REPORT

07 December 2024



Survey flown in poor to good conditions. Beaufort ranged from 3 to 6.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

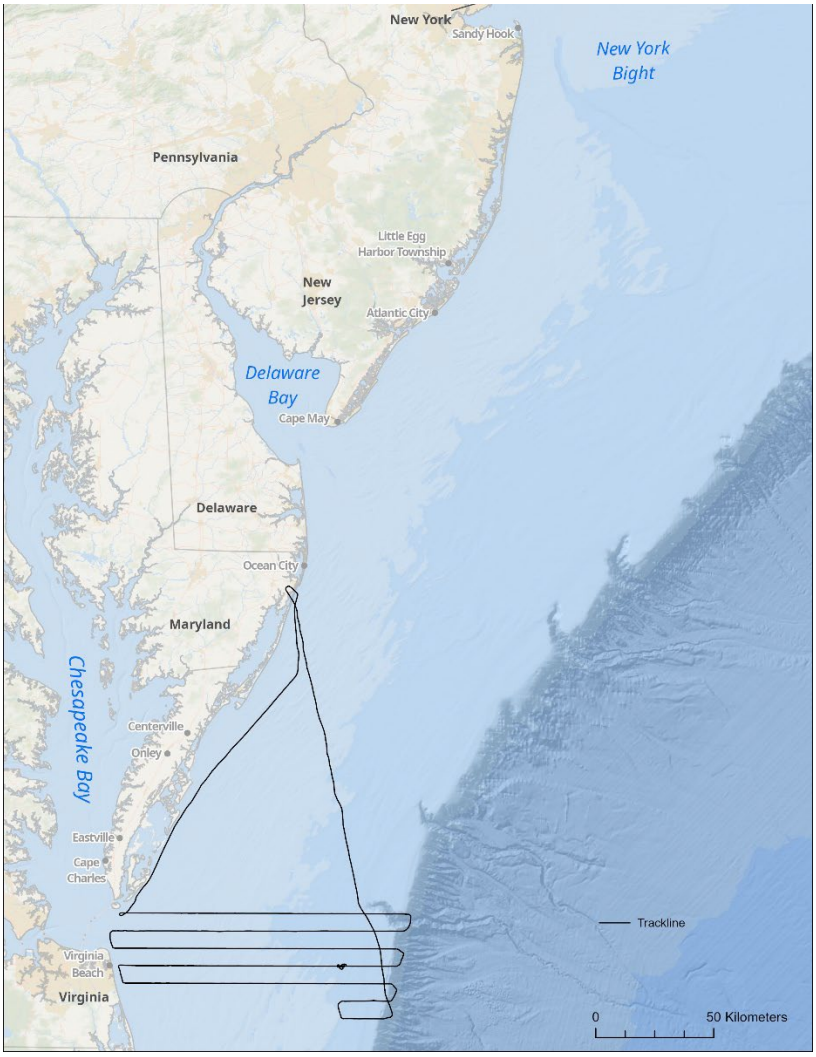
Species	Total Number of Animals
North Atlantic right whale	2
Humpback whale	1

Table 2: Right Whale Sighting(s) Details

Date/Time (ET)	Latitude	Longitude	Number	Calves	Behavior
2024-12-24/11:48:28	36.74284	-75.59188	2	0	Diving

RIGHT WHALE AERIAL SURVEY REPORT

13 December 2024



Survey flown in moderate to excellent conditions. Beaufort ranged from 1 to 4
Only large whale sightings are recorded for this survey.

No large whales were observed on this day.

Table 1: Species Sighted

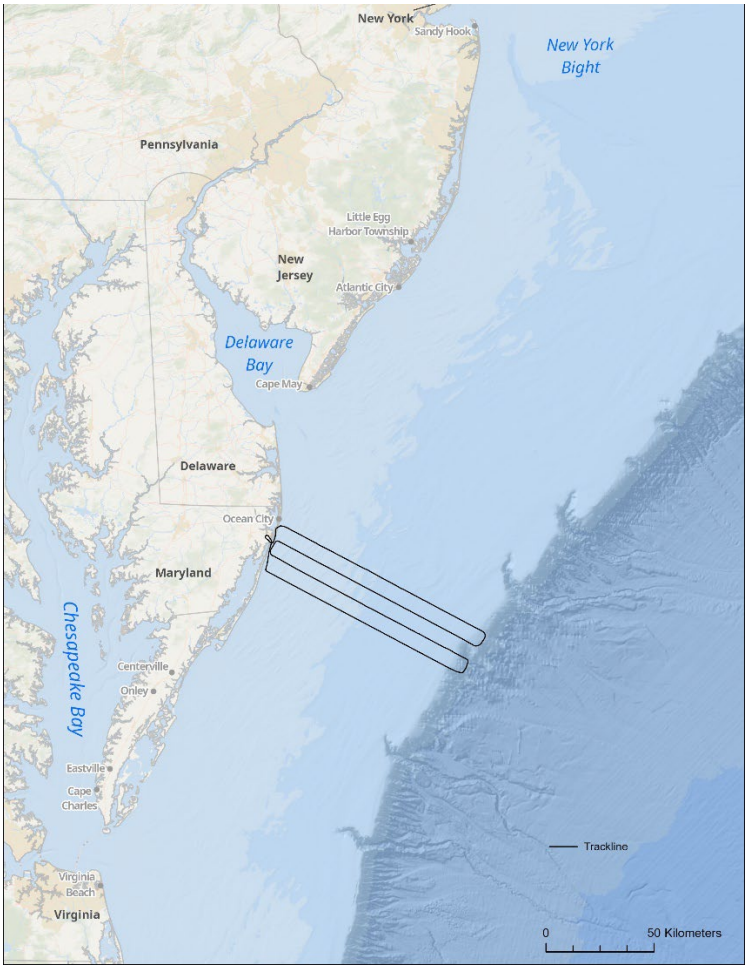
Species	Total Number of Animals
North Atlantic right whale	0

Table 2: Right Whale Sighting(s) Details

Date/Time (ET)	Latitude	Longitude	Number	Calves	Behavior

RIGHT WHALE AERIAL SURVEY REPORT

18 December 2024



Survey flown in poor to excellent conditions. Beaufort ranged from 2 to 5
Only large whale sightings are recorded for this survey.

No large whales were observed on this day.

Table 1: Species Sighted

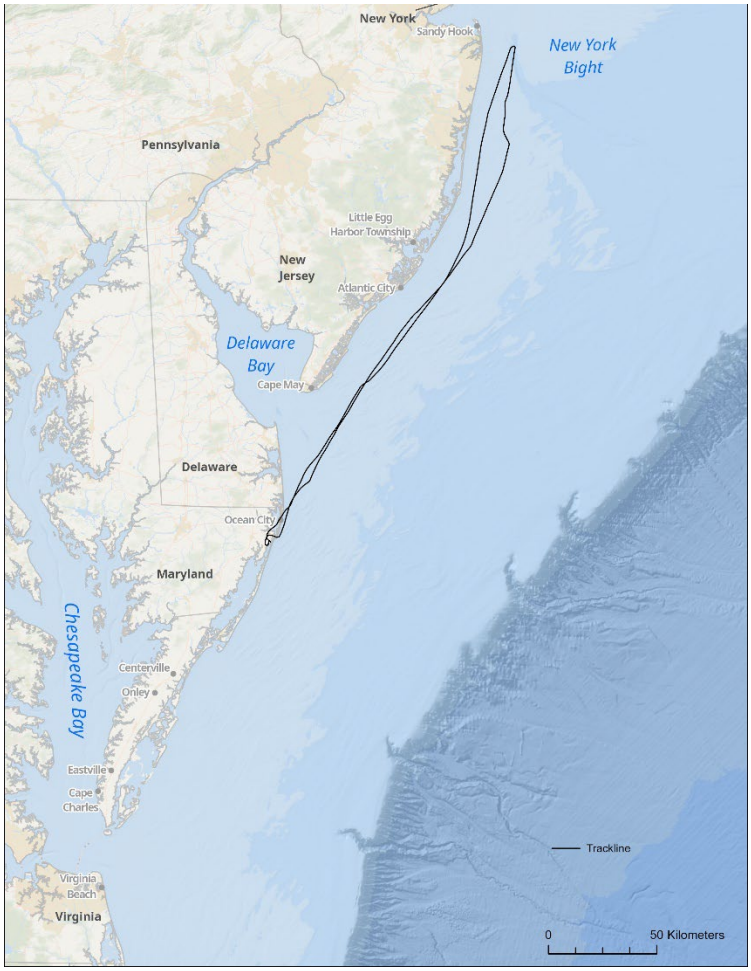
Species	Total Number of Animals
North Atlantic right whale	0

Table 2: Right Whale Sighting(s) Details

Date/Time (ET)	Latitude	Longitude	Number	Calves	Behavior

RIGHT WHALE AERIAL SURVEY REPORT

19 December 2024



Survey efforts aborted due to high sea state during transit and in the survey area.
Only large whale sightings are recorded for this survey.

No large whales were observed on this day.

Table 1: Species Sighted

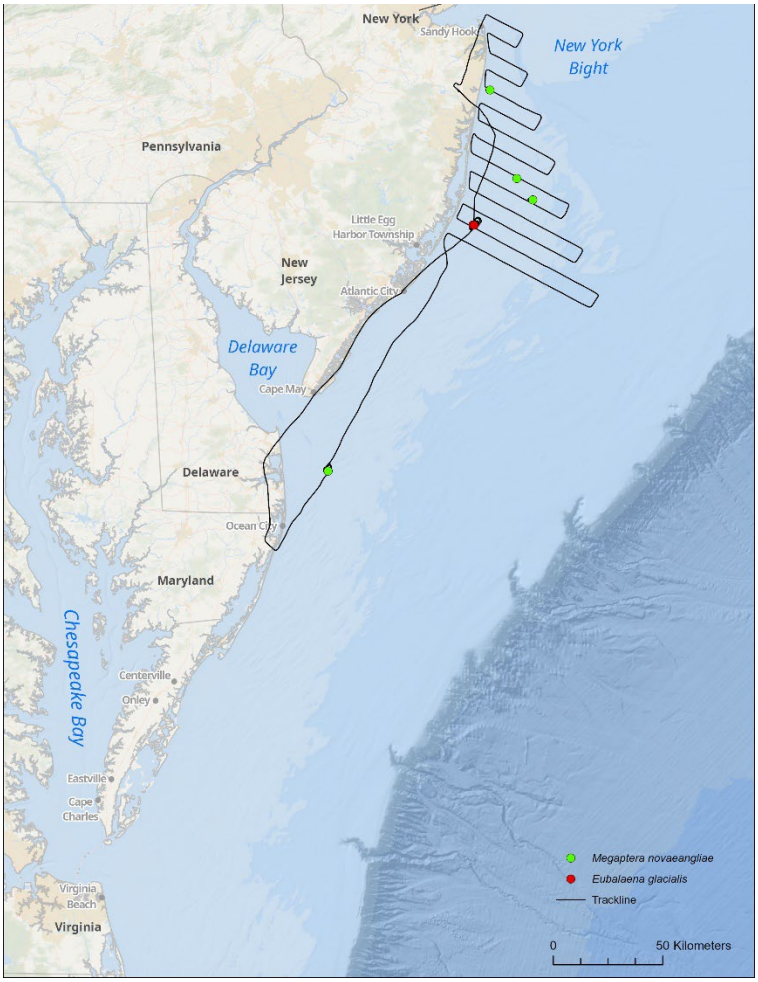
Species	Total Number of Animals
North Atlantic right whale	0

Table 2: Right Whale Sighting(s) Details

Date/Time (ET)	Latitude	Longitude	Number	Calves	Behavior

RIGHT WHALE AERIAL SURVEY REPORT

27 December 2024



Survey flown in good to excellent conditions. Beaufort ranged from 1 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

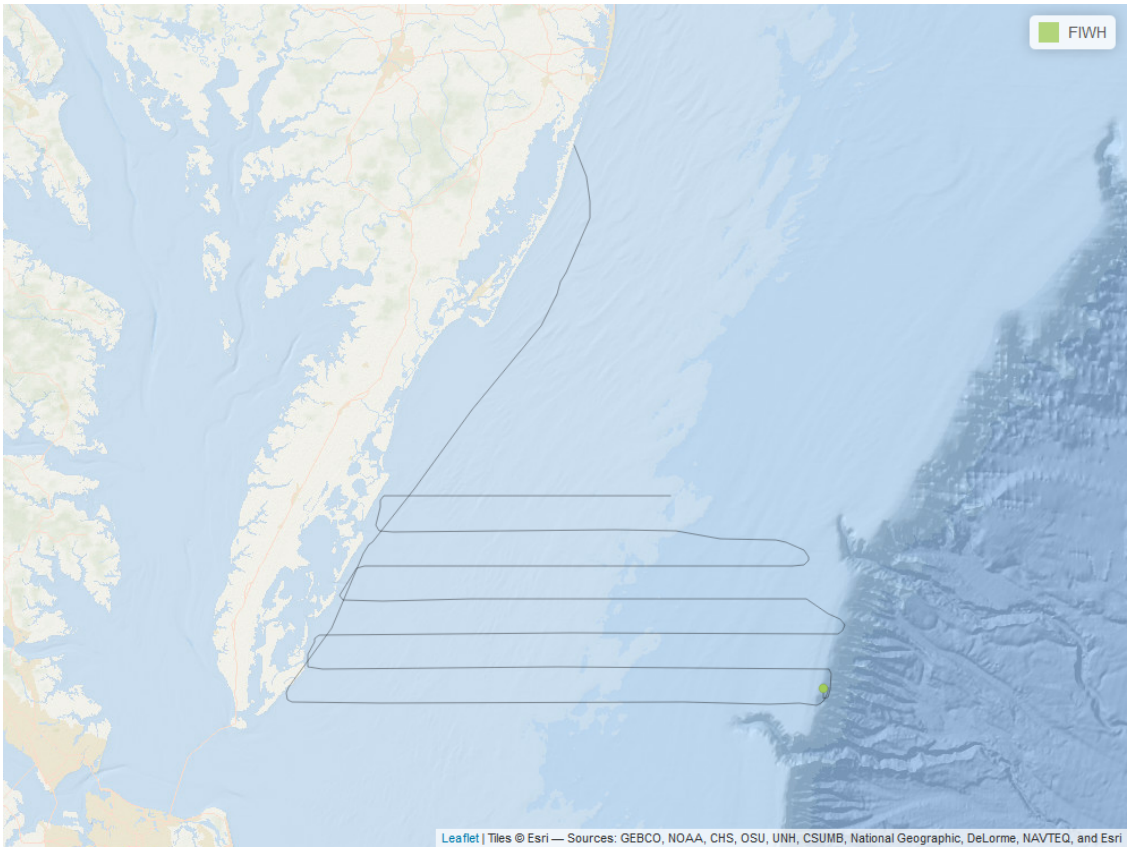
Species	Total Number of Animals
North Atlantic right whale	2
Humpback whale	6

Table 2: Right Whale Sighting(s) Details

Date/Time (ET)	Latitude	Longitude	Number	Calves	Behavior
2024-12-27/10:56:23	39.63237	-74.05360	1	0	Skim feeding
2024-12-27/15:44:18	39.63115	-74.04626	2	0	slow swimming

Right Whale Aerial Survey Report

28 December 2024



Survey flown in moderate to excellent conditions. Beaufort ranged from 2 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

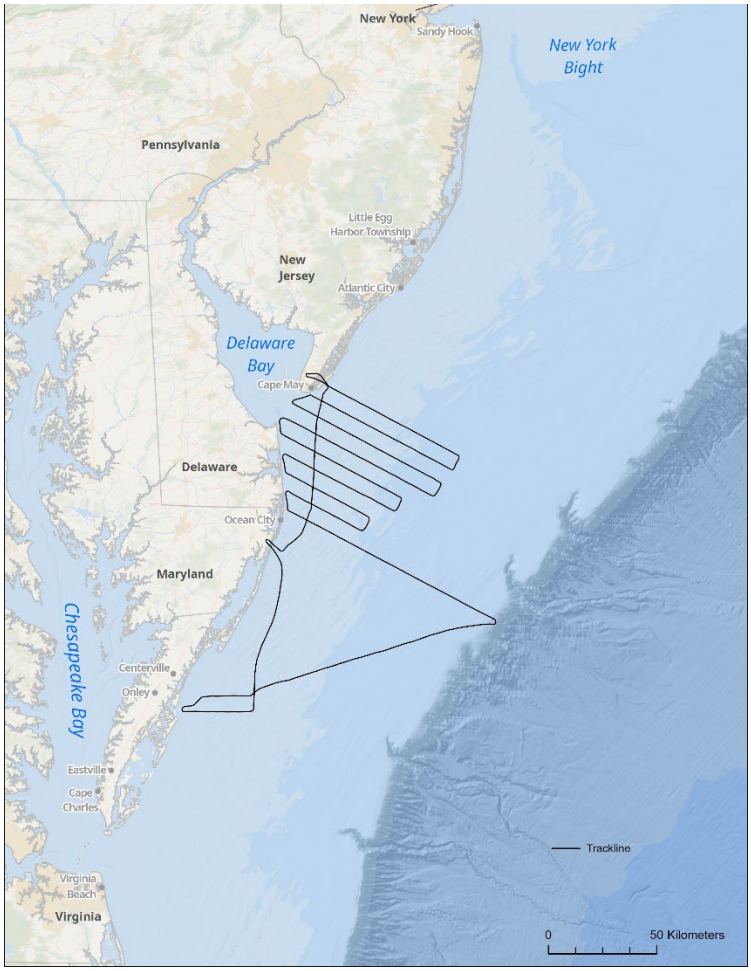
Species	Total Number
Fin Whale	4

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

RIGHT WHALE AERIAL SURVEY REPORT

30 December 2024



Survey flown in poor to excellent conditions. Beaufort ranged from 2 to 5.
Only large whale sightings are recorded for this survey.

No large whales were observed on this day.

Table 1: Species Sighted

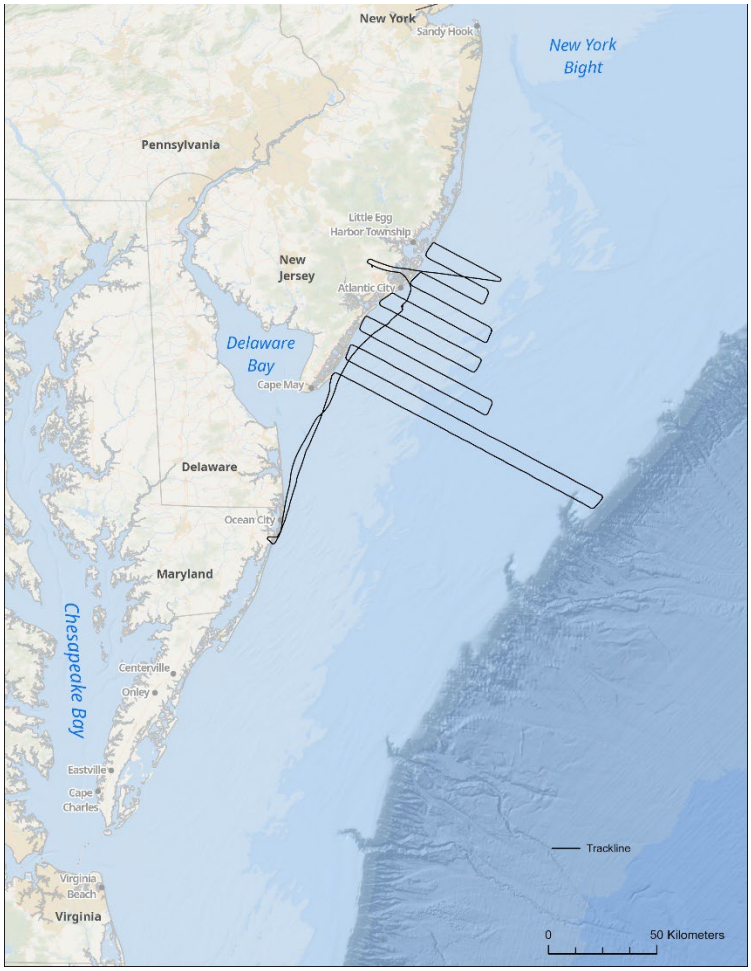
Species	Total Number of Animals
North Atlantic right whale	0

Table 2: Right Whale Sighting(s) Details

Date/Time (ET)	Latitude	Longitude	Number	Calves	Behavior

RIGHT WHALE AERIAL SURVEY REPORT

31 December 2024



Survey flown in poor to excellent conditions. Beaufort ranged from 1 to 5.
Only large whale sightings are recorded for this survey.

No large whales were observed on this day.

Table 1: Species Sighted

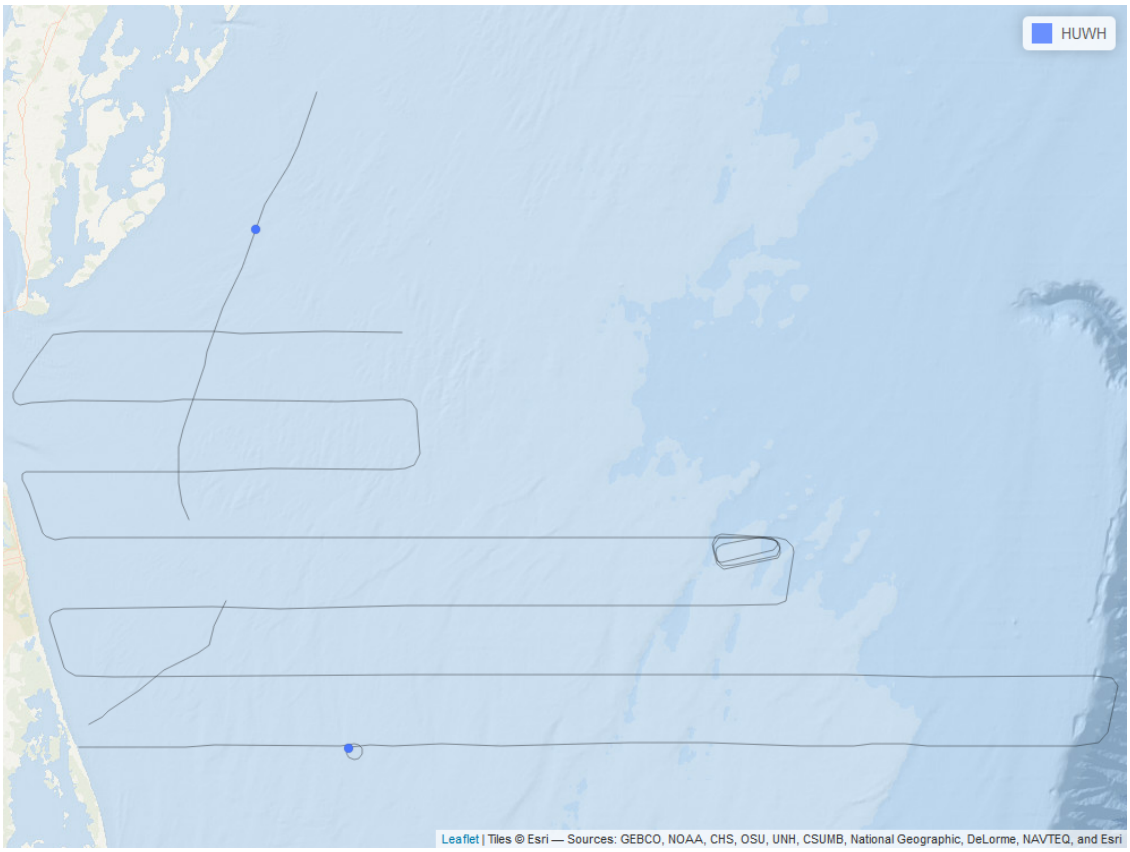
Species	Total Number of Animals
North Atlantic right whale	0

Table 2: Right Whale Sighting(s) Details

Date/Time (ET)	Latitude	Longitude	Number	Calves	Behavior

Right Whale Aerial Survey Report

03 January 2025



Survey flown in poor to excellent conditions. Beaufort ranged from 2 to 5.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

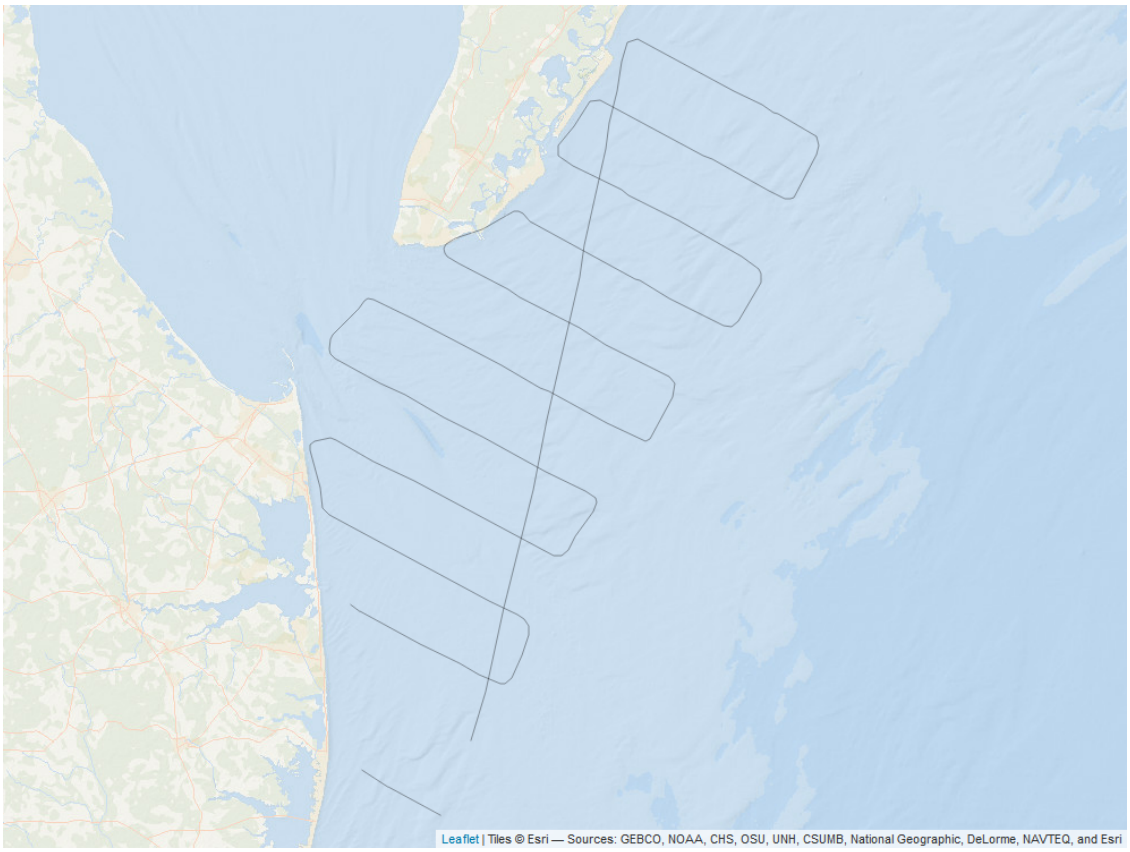
Species	Total Number
Humpback Whale	2

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

13 January 2025



Survey flown in moderate to good conditions. Beaufort ranged from 2 to 5.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

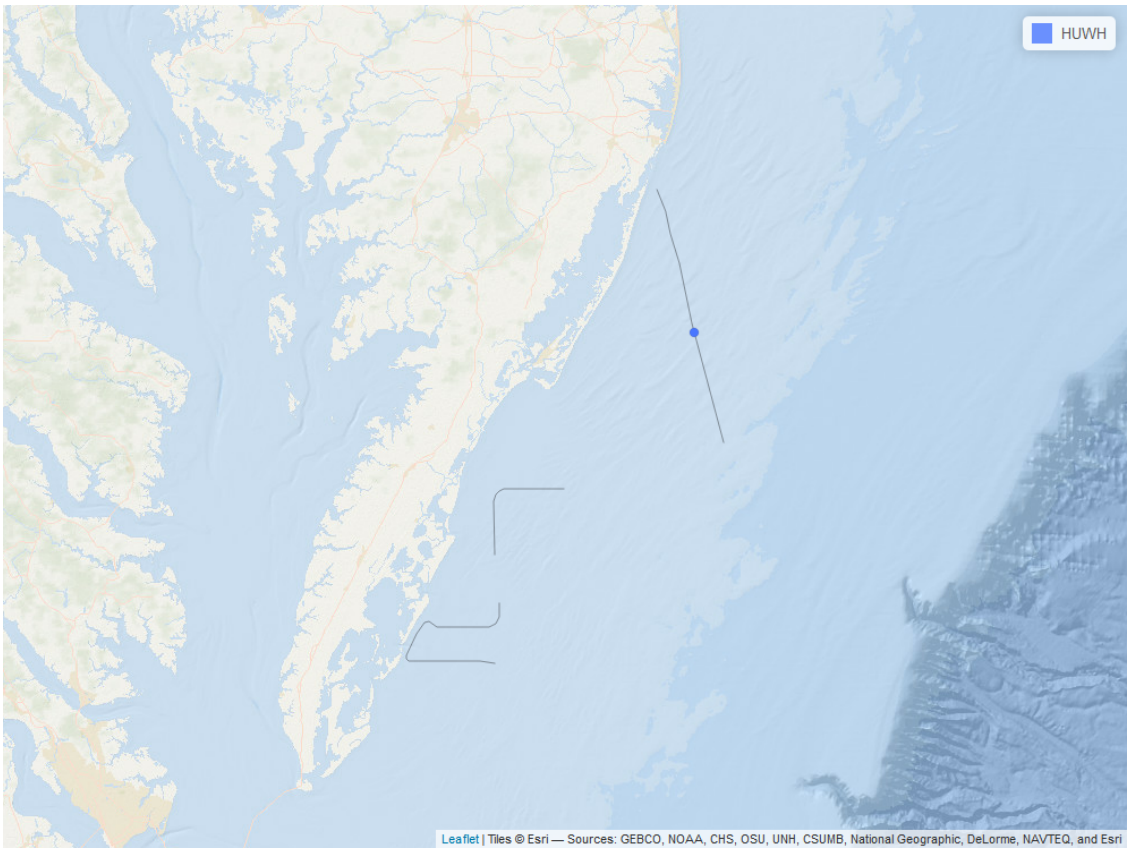
Species	Total Number
No large whales sighted	

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

16 January 2025



Survey flown in excellent to moderate conditions. Beaufort ranged from 2 to 5.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

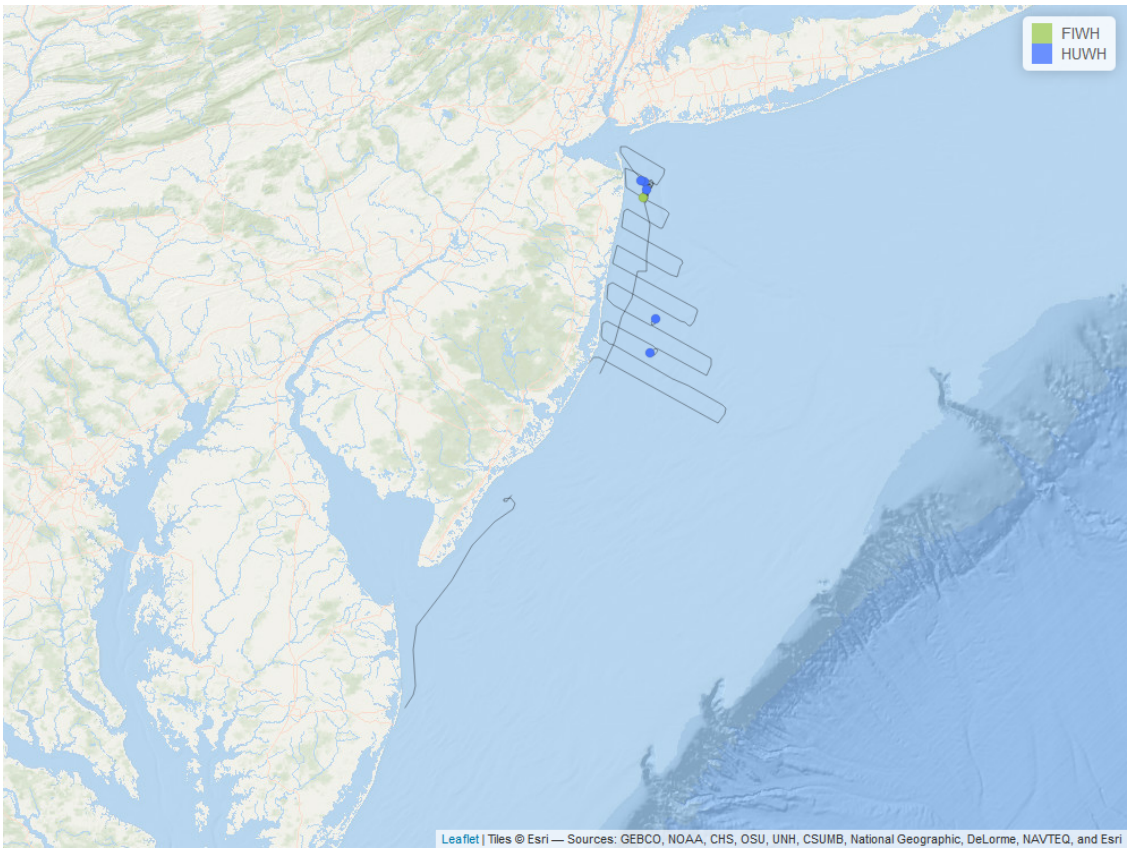
Species	Total Number
Humpback Whale	1

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

17 January 2025



Survey flown in poor to excellent conditions. Beaufort ranged from 2 to 5.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

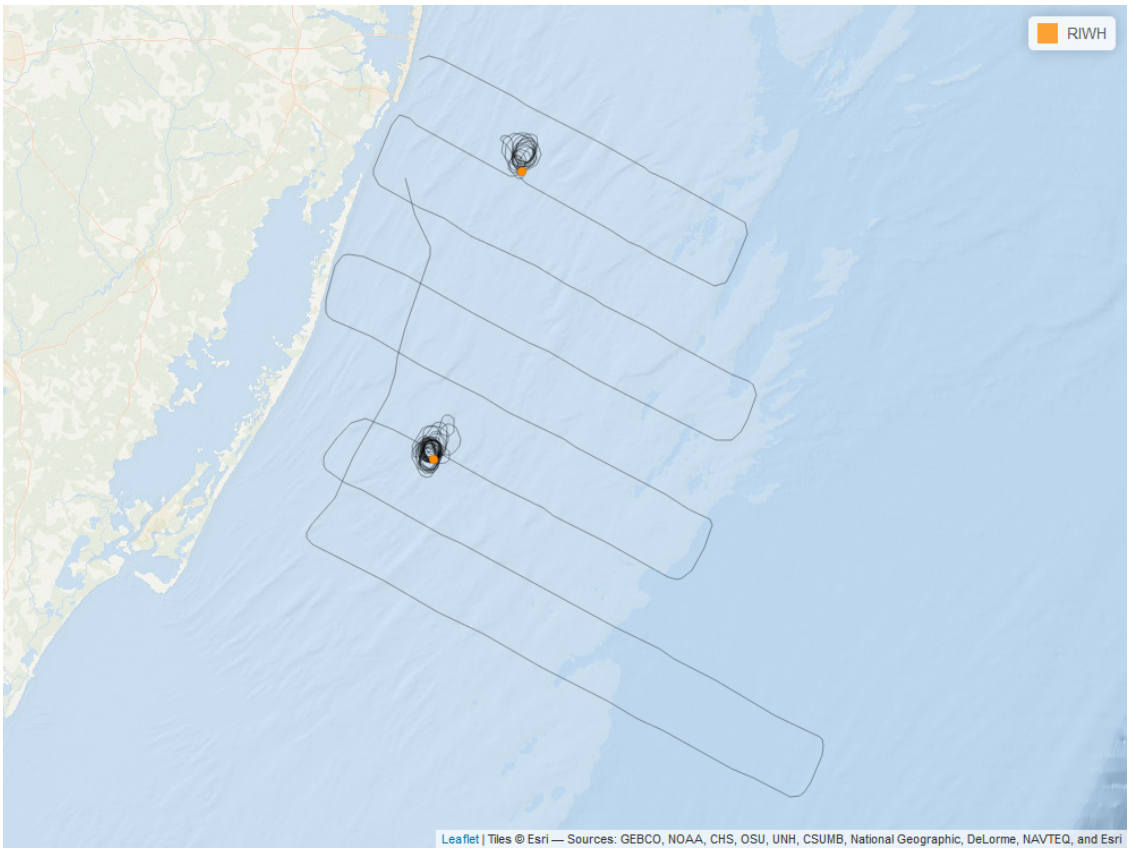
Species	Total Number
Fin Whale	1
Humpback Whale	9

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

18 January 2025



Survey flown in poor to excellent conditions. Beaufort ranged from 2 to 5.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

Species	Total Number
North Atlantic Right Whale	12

Table 2: Right Whale Sighting(s) Details

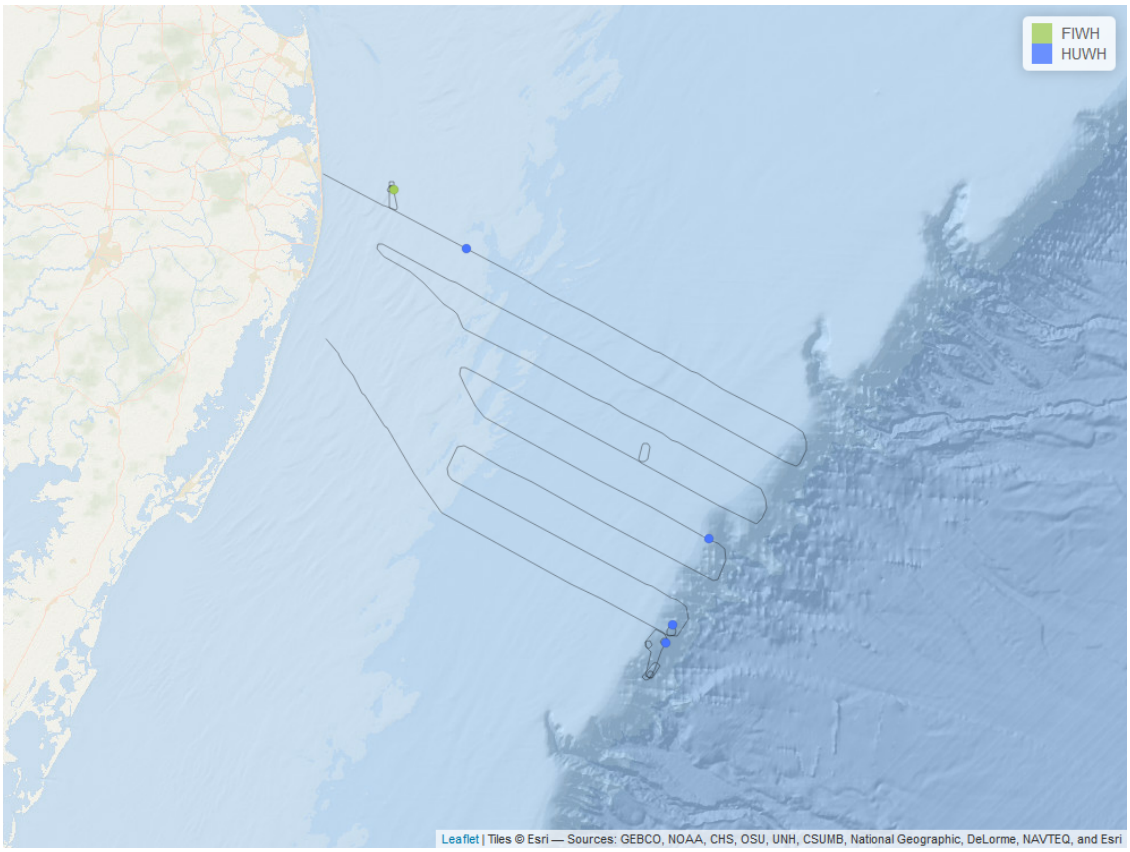
Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
2025-01-18 09:43:23	37.98514	-75.04264	7	0	SAG

Table 2: Right Whale Sighting(s) Details *(continued)*

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
2025-01-18 11:55:51	38.25959	-74.93521	5	0	SAG

Right Whale Aerial Survey Report

24 January 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 2 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

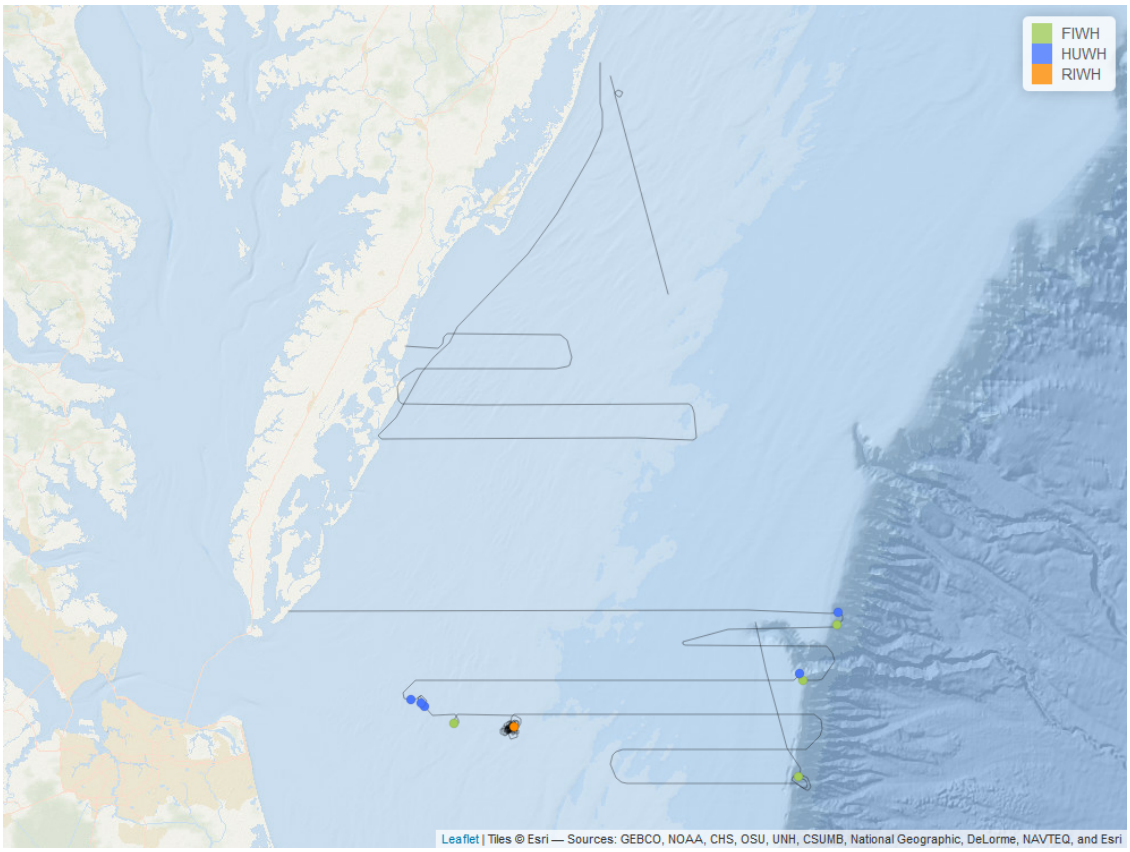
Species	Total Number
Fin Whale	2
Humpback Whale	6

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

25 January 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 1 to 5.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

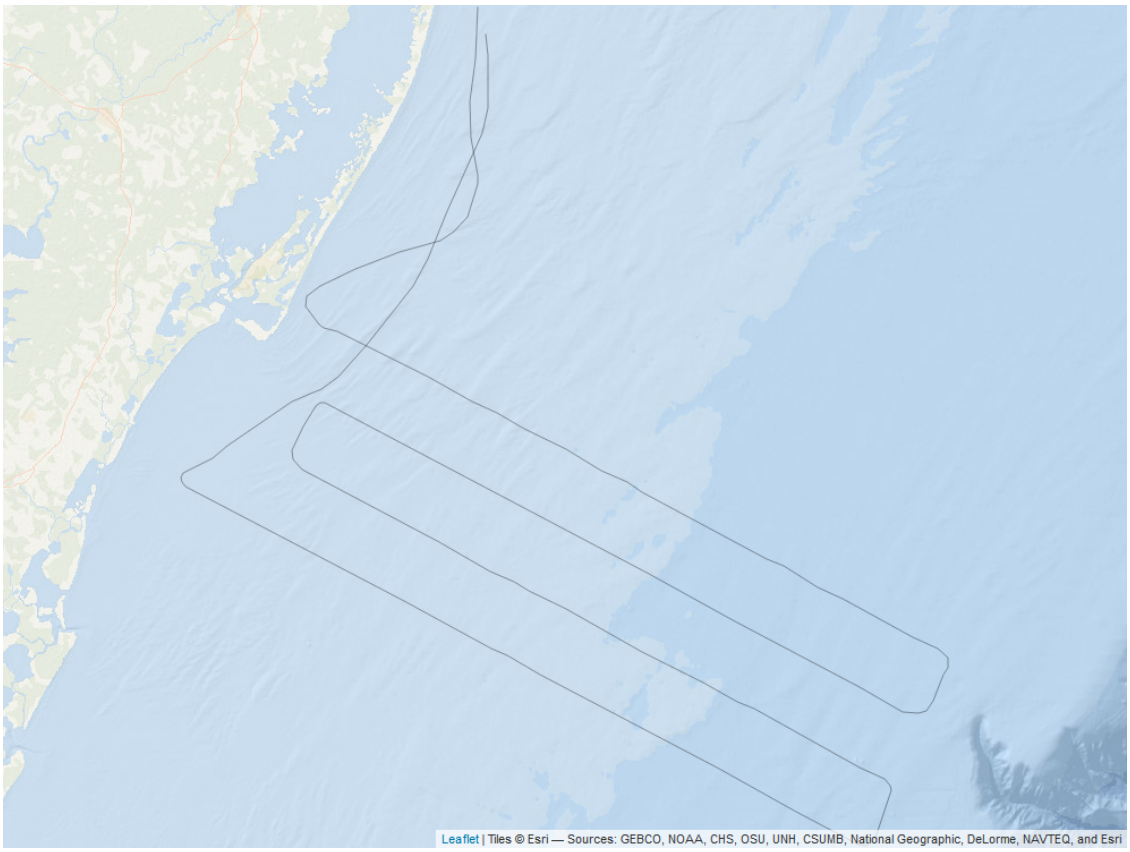
Species	Total Number
Fin Whale	6
Humpback Whale	9
North Atlantic Right Whale	3

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
2025-01-25 10:26:38	36.9112	-75.33363	3	0	moderate swim, dive, associated with cetacean

Right Whale Aerial Survey Report

26 January 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 2 to 5.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

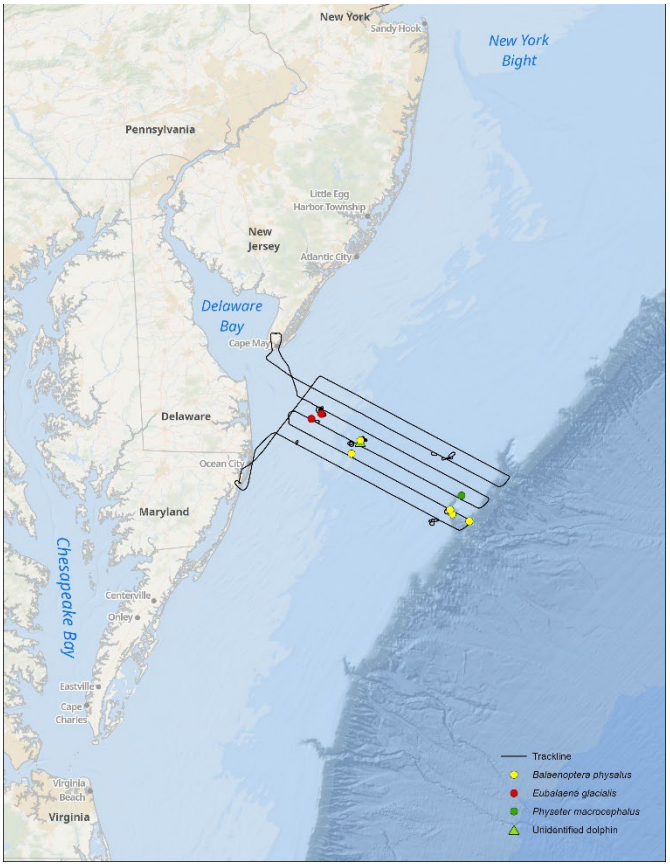
Species	Total Number
No large whales sighted	

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

RIGHT WHALE AERIAL SURVEY REPORT

27 January 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 2 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

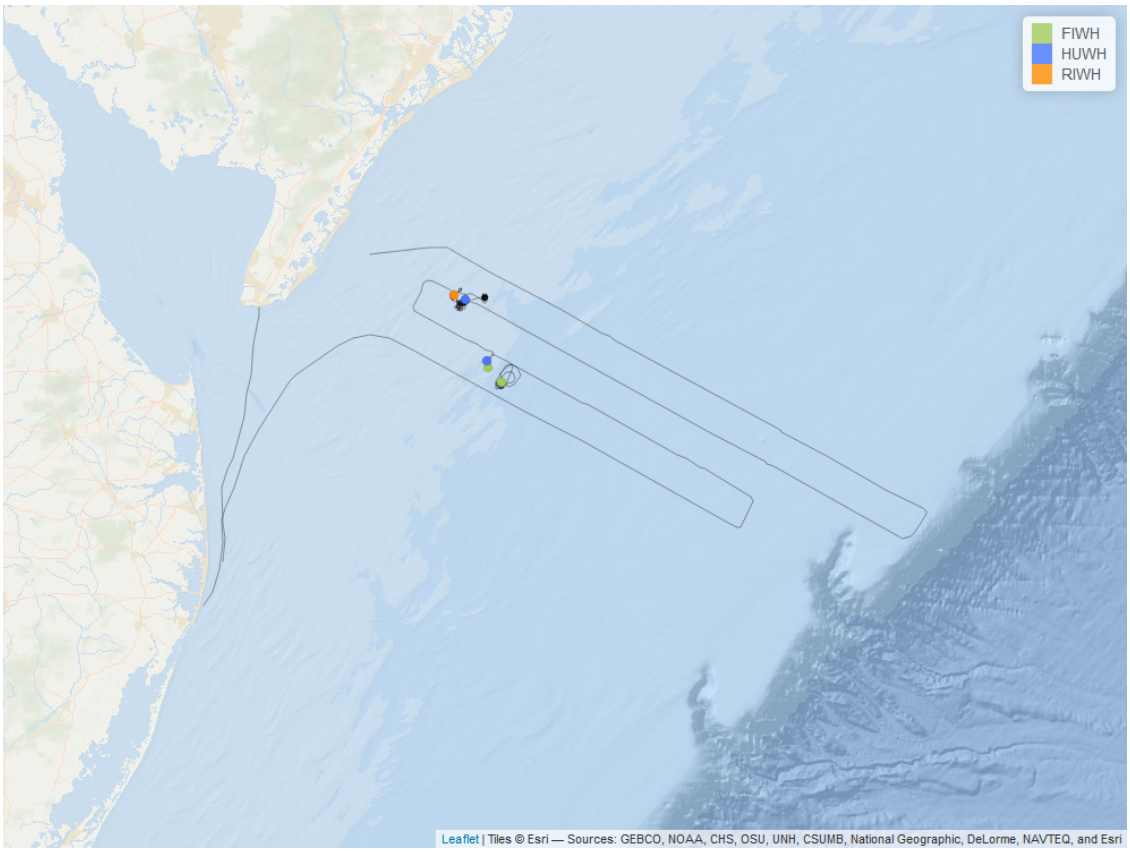
Species	Total Number of Animals
North Atlantic right whale	9
Fin whale	8
Sperm whale	1

Table 2: Right Whale Sighting(s) Details

Date/Time (ET)	Latitude	Longitude	Number	Calves	Behavior
2025-01-27/10:09:57	38.60844	-74.69676	1	0	Slow swim at surface
2025-01-27/11:53:02	38.63088	-74.63743	8	0	SAG

Right Whale Aerial Survey Report

30 January 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 2 to 5.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

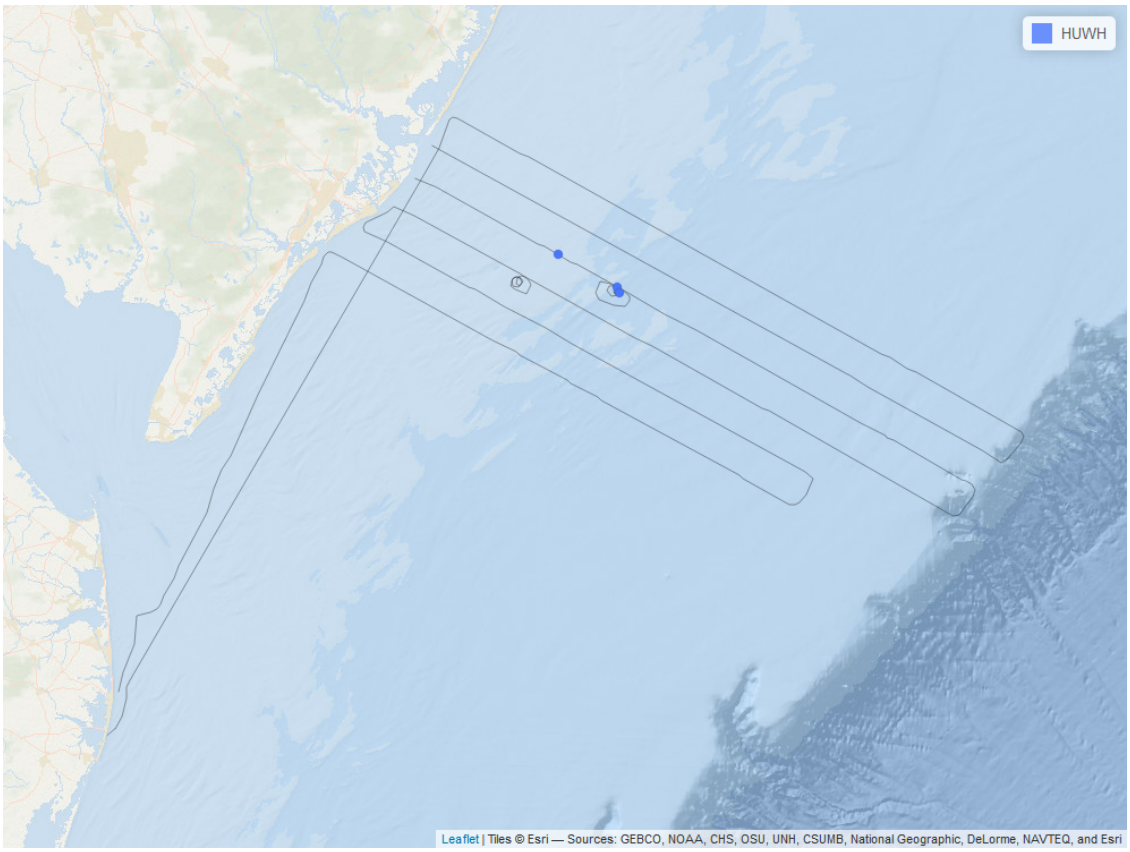
Species	Total Number
Fin Whale	2
Humpback Whale	3
North Atlantic Right Whale	14

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
2025-01-30 11:40:28	38.9503	-74.45417	14	0	SAG, with cetaceans

Right Whale Aerial Survey Report

02 February 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 2 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

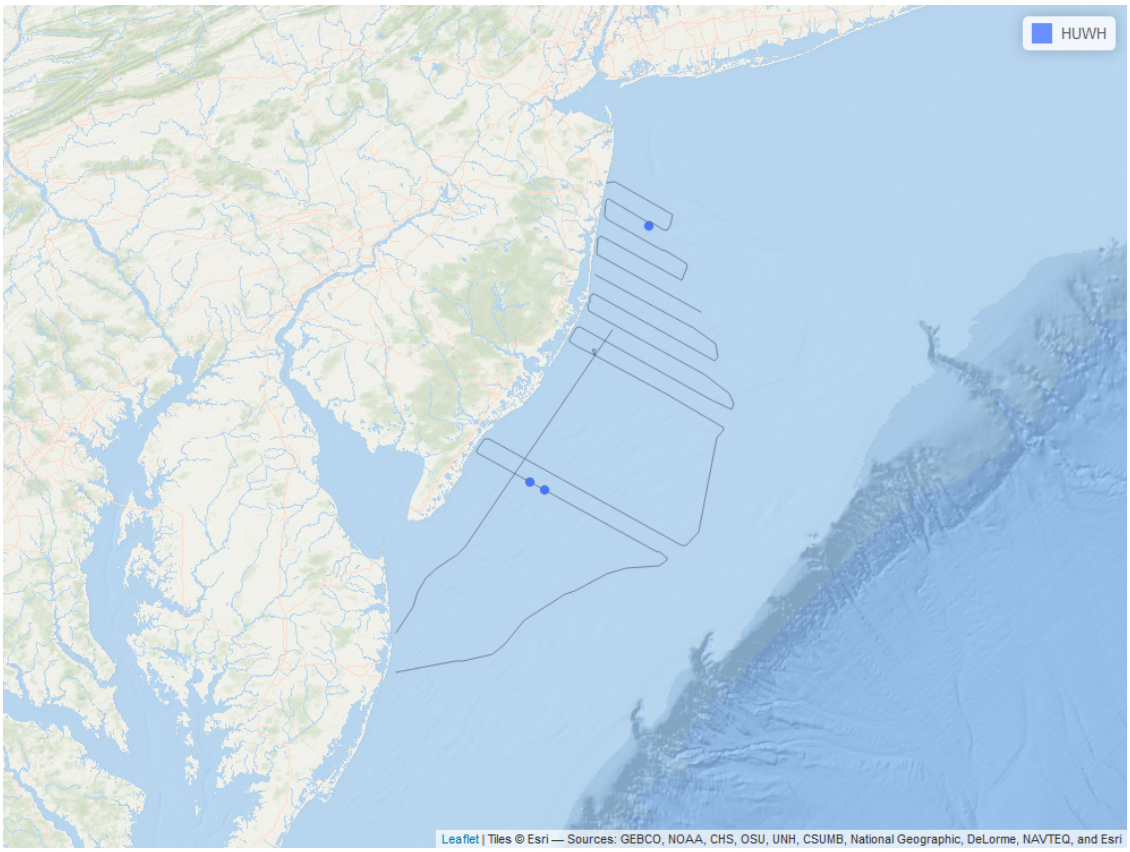
Species	Total Number
Humpback Whale	7

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

03 February 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 2 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

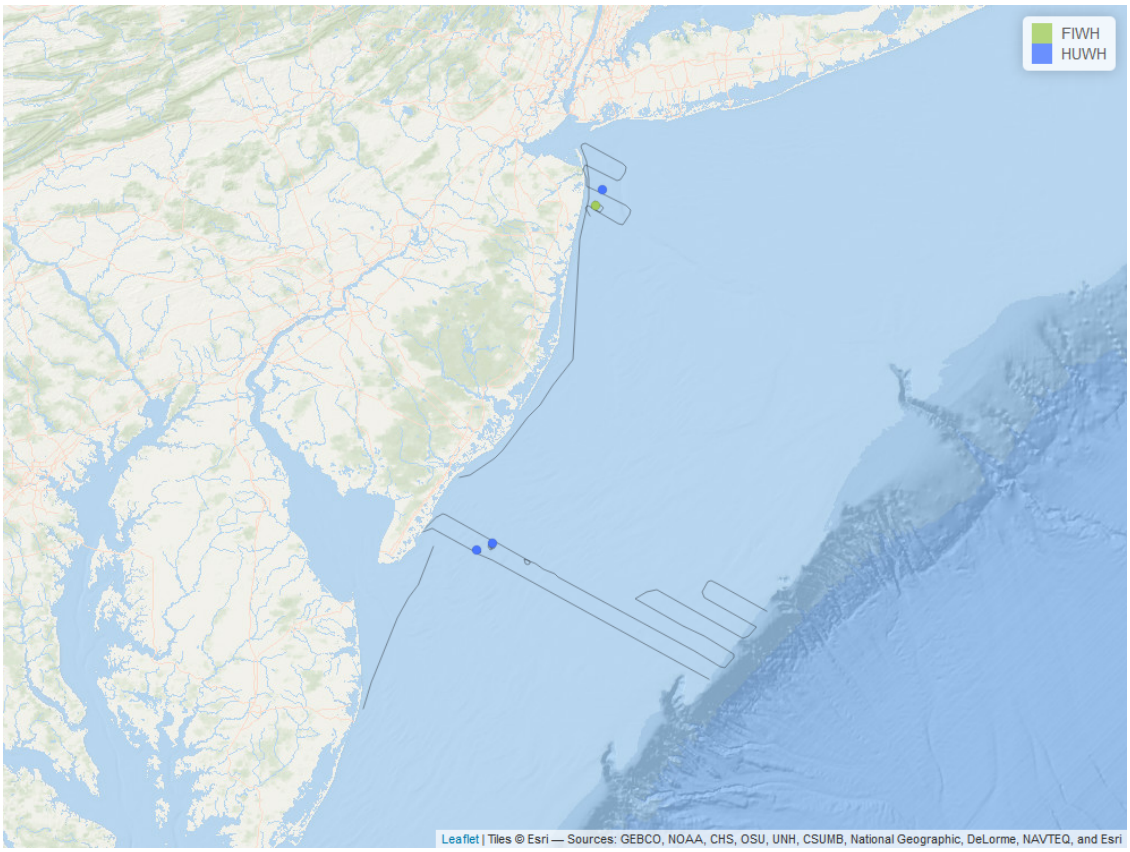
Species	Total Number
Humpback Whale	4

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

05 February 2025



Survey flown in poor to excellent conditions. Beaufort ranged from 2 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

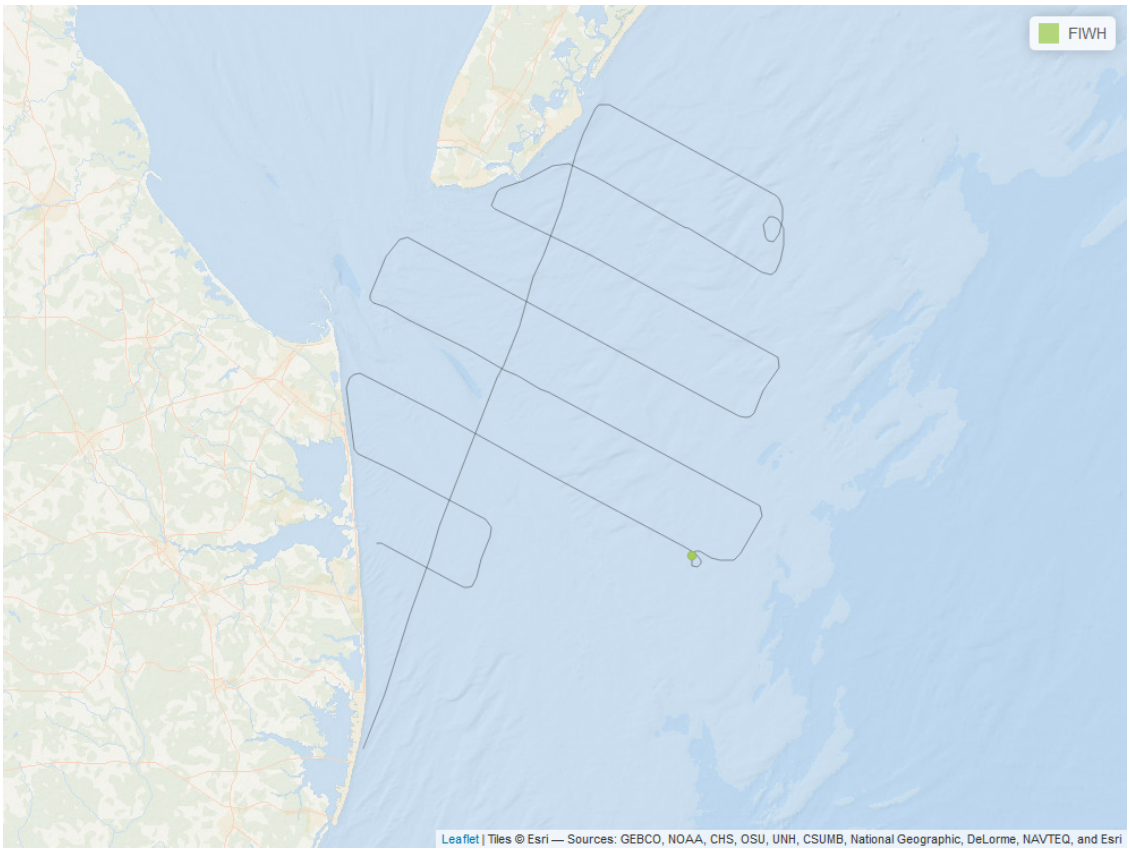
Species	Total Number
Fin Whale	2
Humpback Whale	5

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

10 February 2025



Survey flown in moderate to good conditions. Beaufort ranged from 2 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

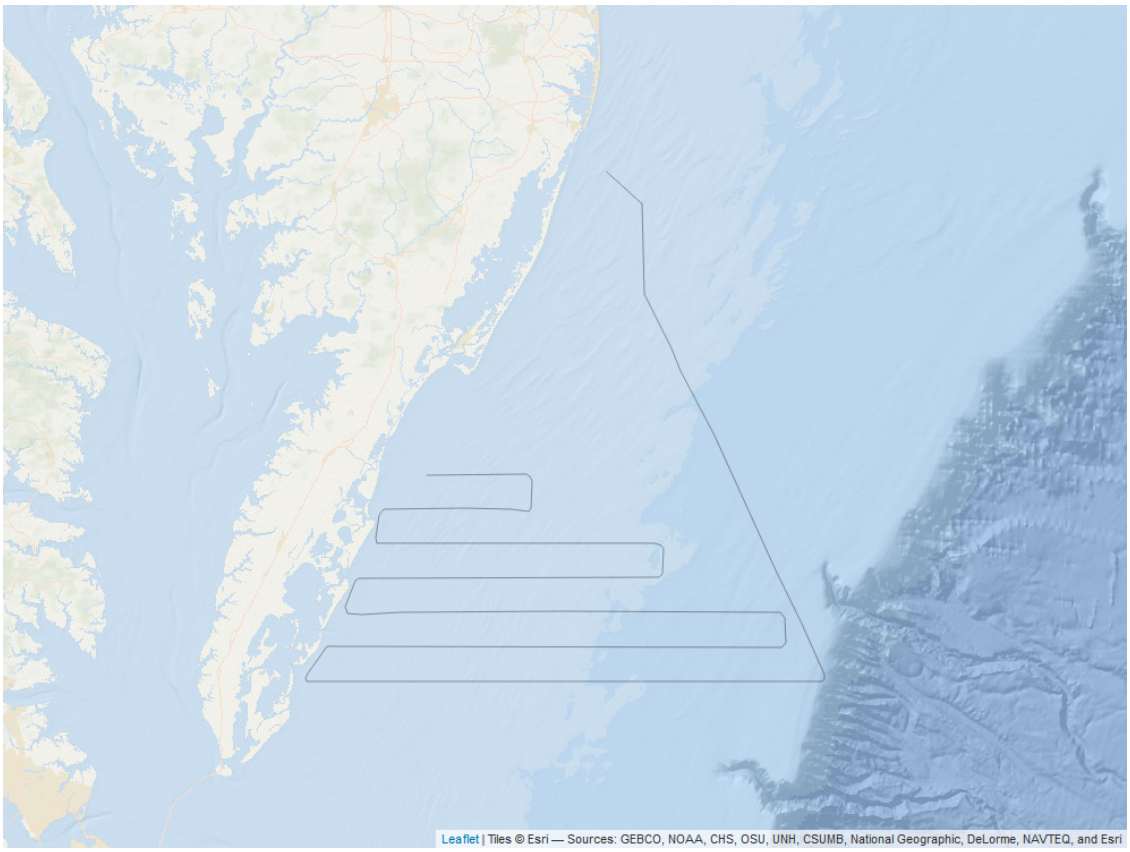
Species	Total Number
Fin Whale	1

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

14 February 2025



Survey flown in poor to good conditions. Beaufort ranged from 2 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

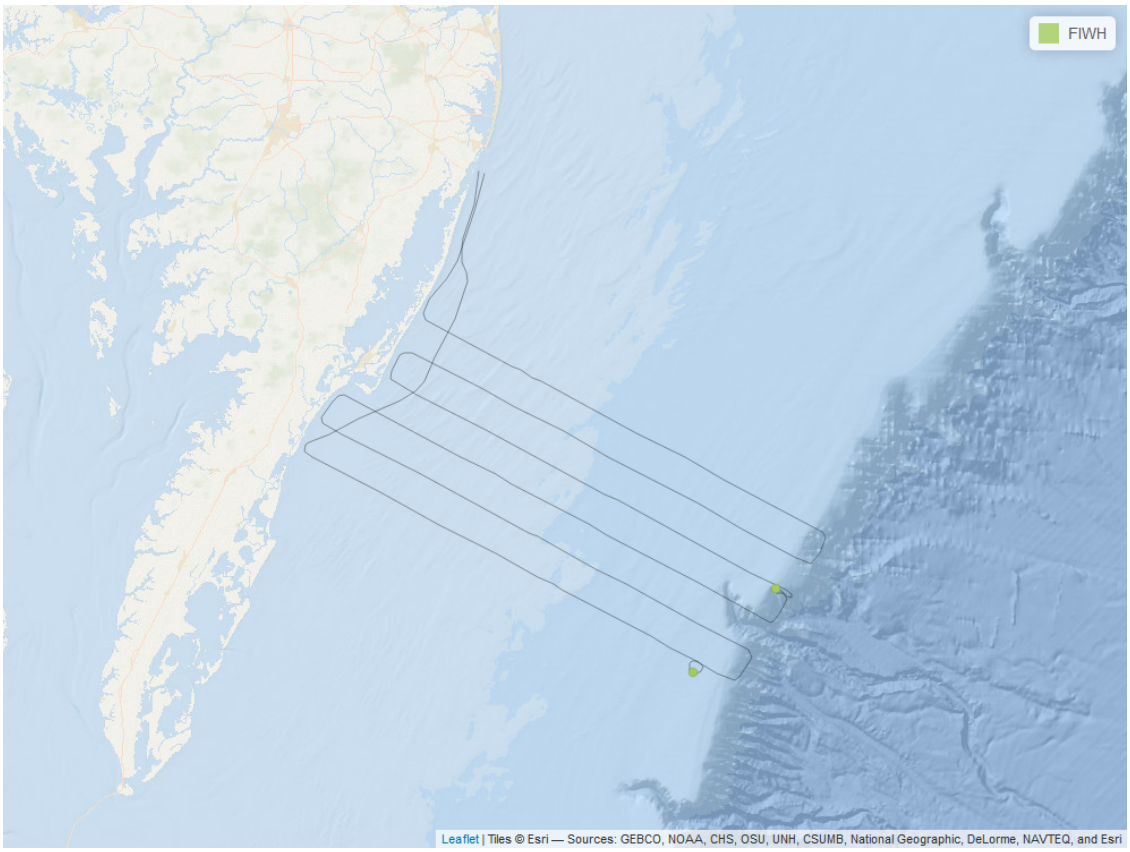
Species	Total Number
No large whales sighted	

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

15 February 2025



Survey flown in moderate to good conditions. Beaufort ranged from 3 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

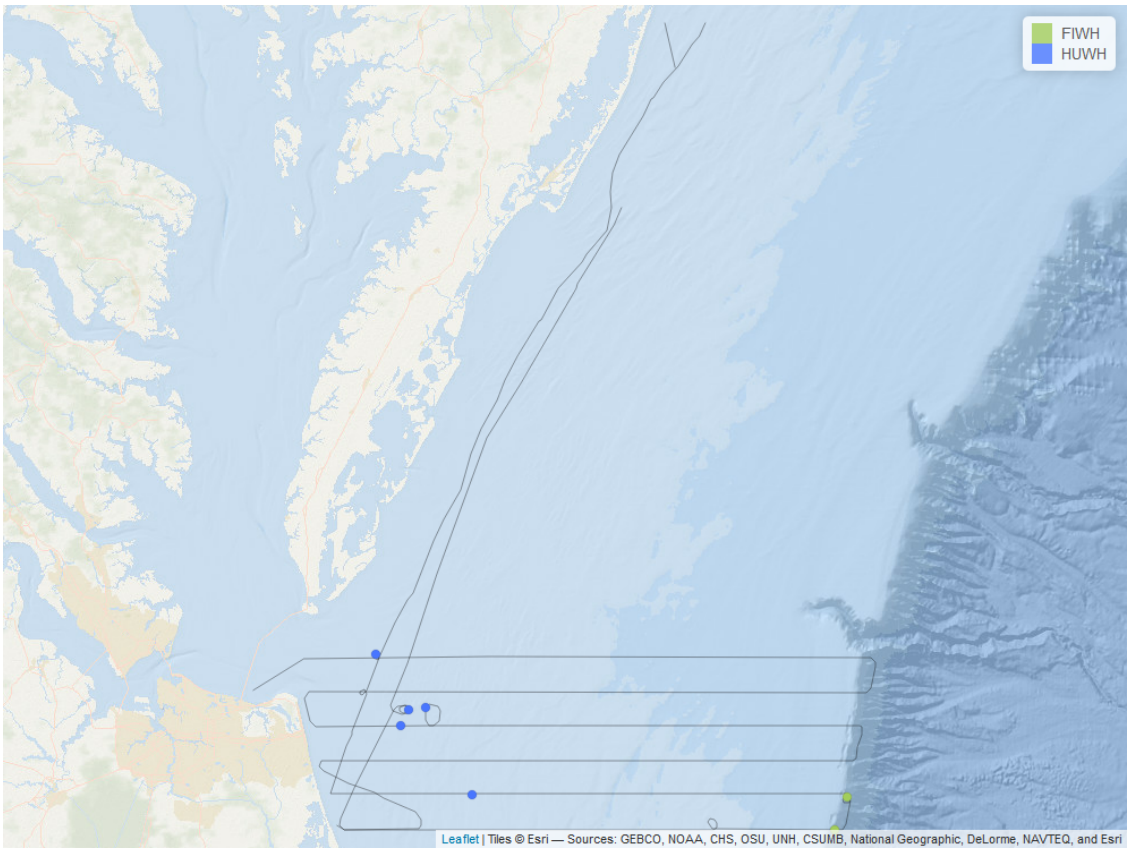
Species	Total Number
Fin Whale	3

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

18 February 2025



Survey flown in poor to excellent conditions. Beaufort ranged from 2 to 5.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

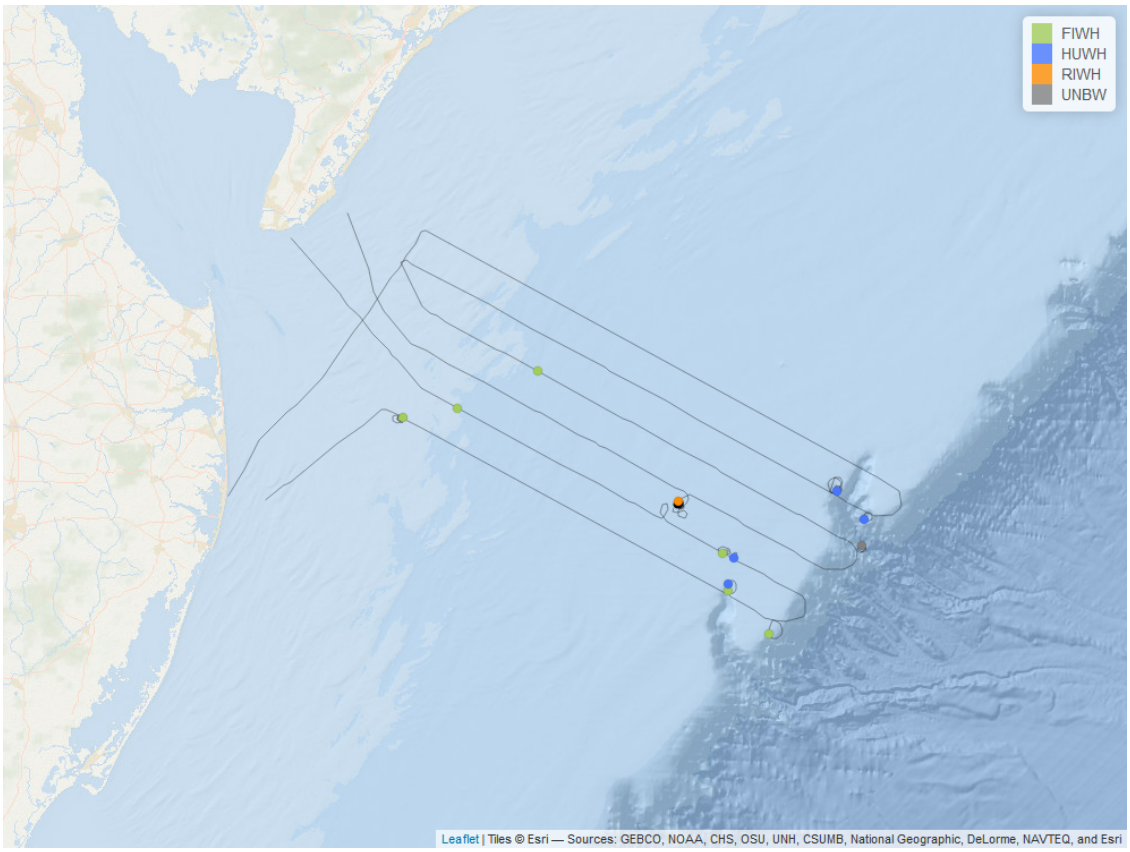
Species	Total Number
Fin Whale	3
Humpback Whale	6

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

22 February 2025



Survey flown in poor to excellent conditions. Beaufort ranged from 2 to 5.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

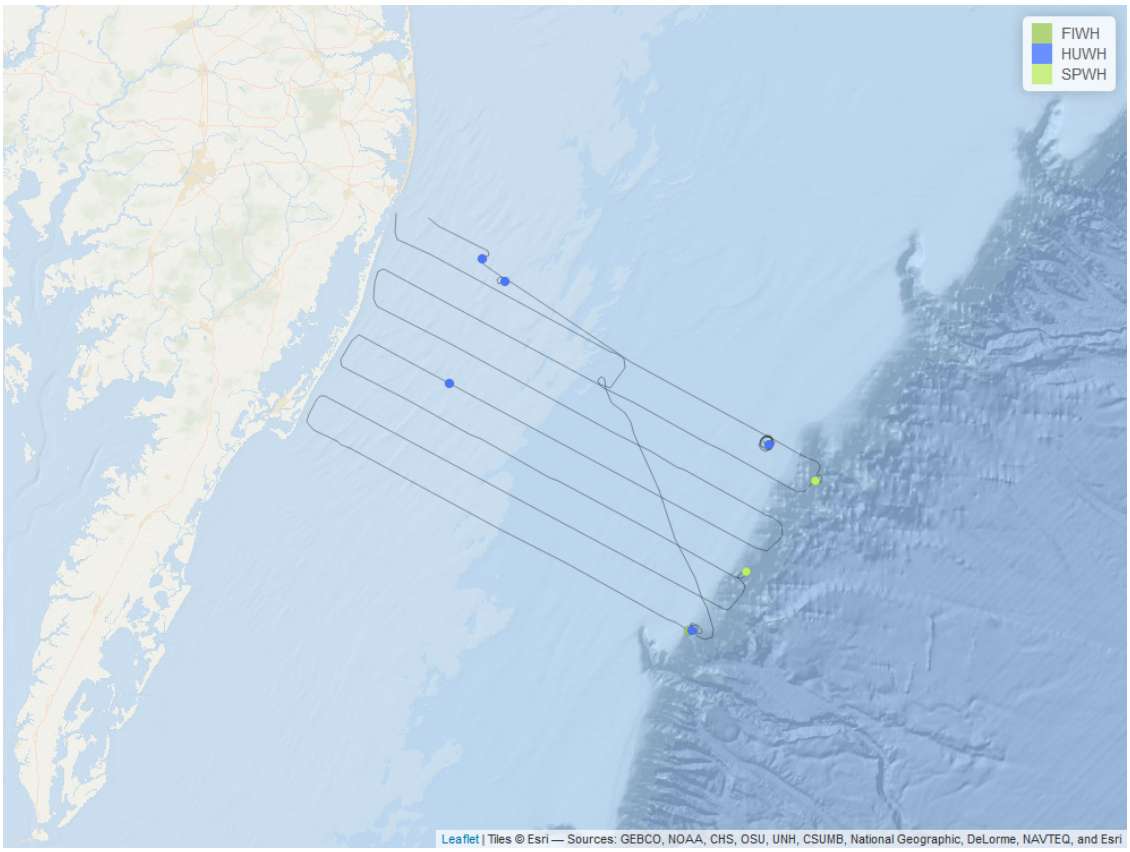
Species	Total Number
Fin Whale	7
Humpback Whale	6
North Atlantic Right Whale	6
Unidentified Beaked Whale	5

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
2025-02-22 11:45:58	38.41683	-73.9579	6	-9	SAG

Right Whale Aerial Survey Report

23 February 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 2 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

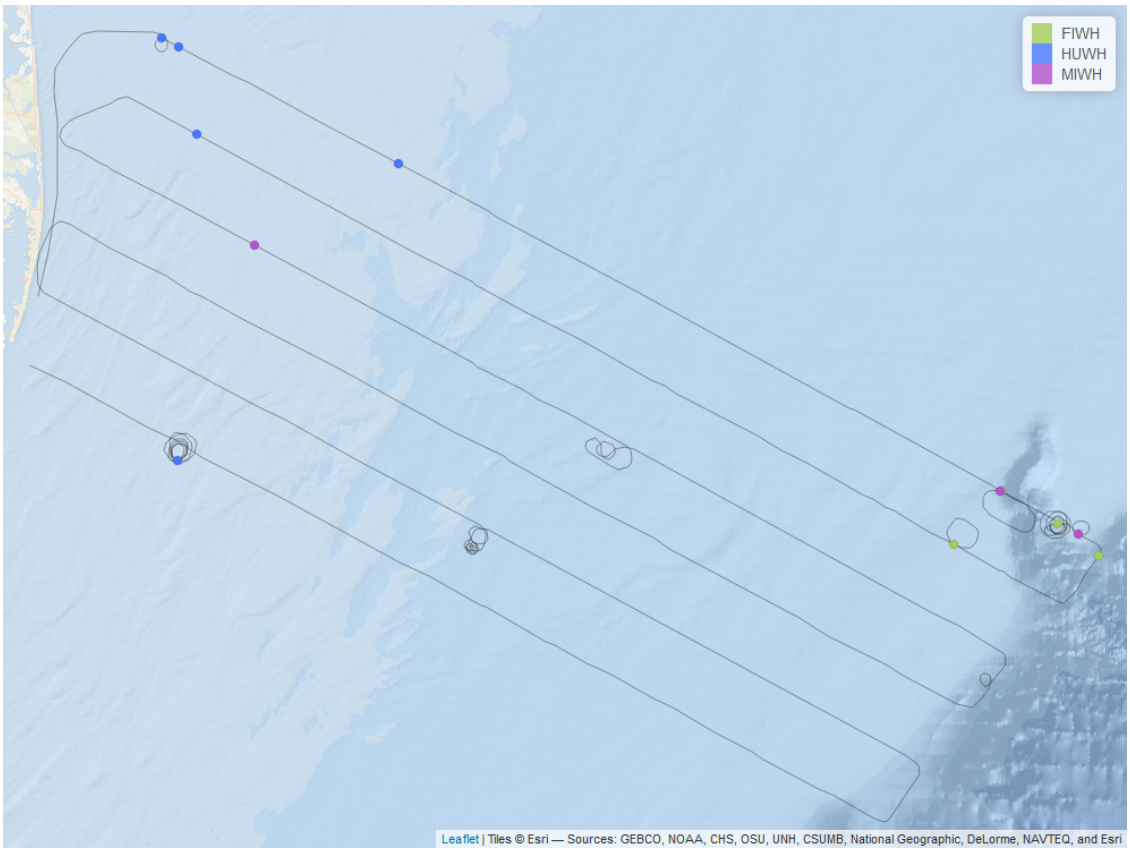
Species	Total Number
Fin Whale	1
Humpback Whale	5
Sperm Whale	2

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

24 February 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 1 to 3.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

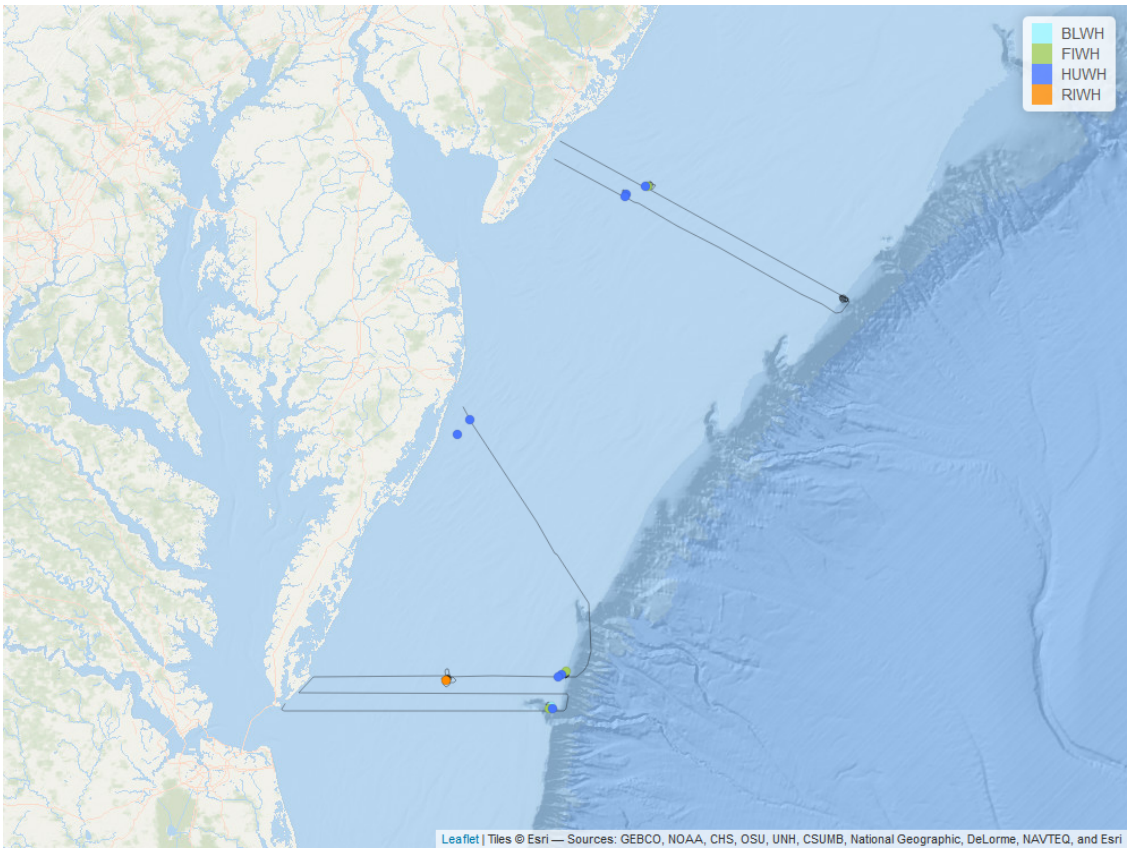
Species	Total Number
Fin Whale	5
Humpback Whale	6
Minke Whale	3

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

25 February 2025



Survey flown in poor to excellent conditions. Beaufort ranged from 2 to 5.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

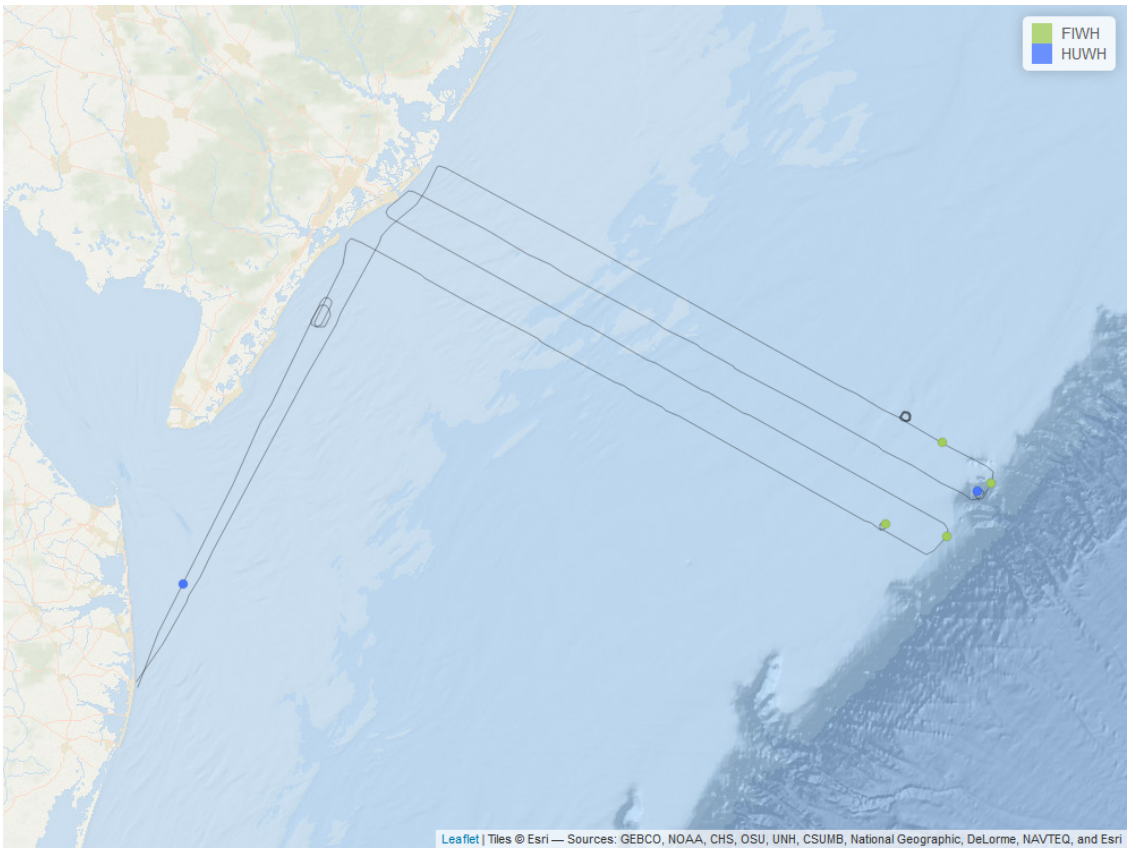
Species	Total Number
Blue Whale	1
Fin Whale	4
Humpback Whale	13
North Atlantic Right Whale	1

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
2025-02-25 10:24:03	37.18773	-75.14133	1	0	fluke up dive, slow travel

Right Whale Aerial Survey Report

26 February 2025



Survey flown in poor to excellent conditions. Beaufort ranged from 1 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

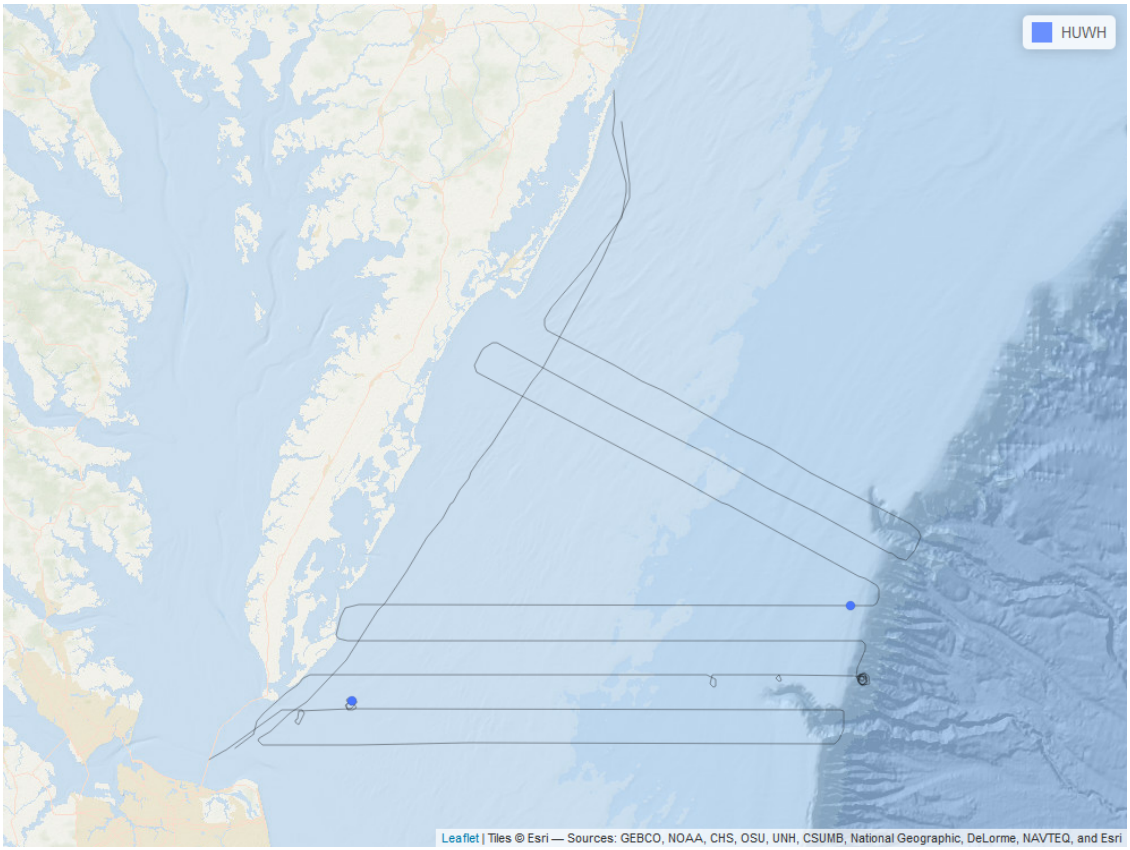
Species	Total Number
Fin Whale	5
Humpback Whale	3

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

03 March 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 2 to 4. 1 Dead HUWH

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

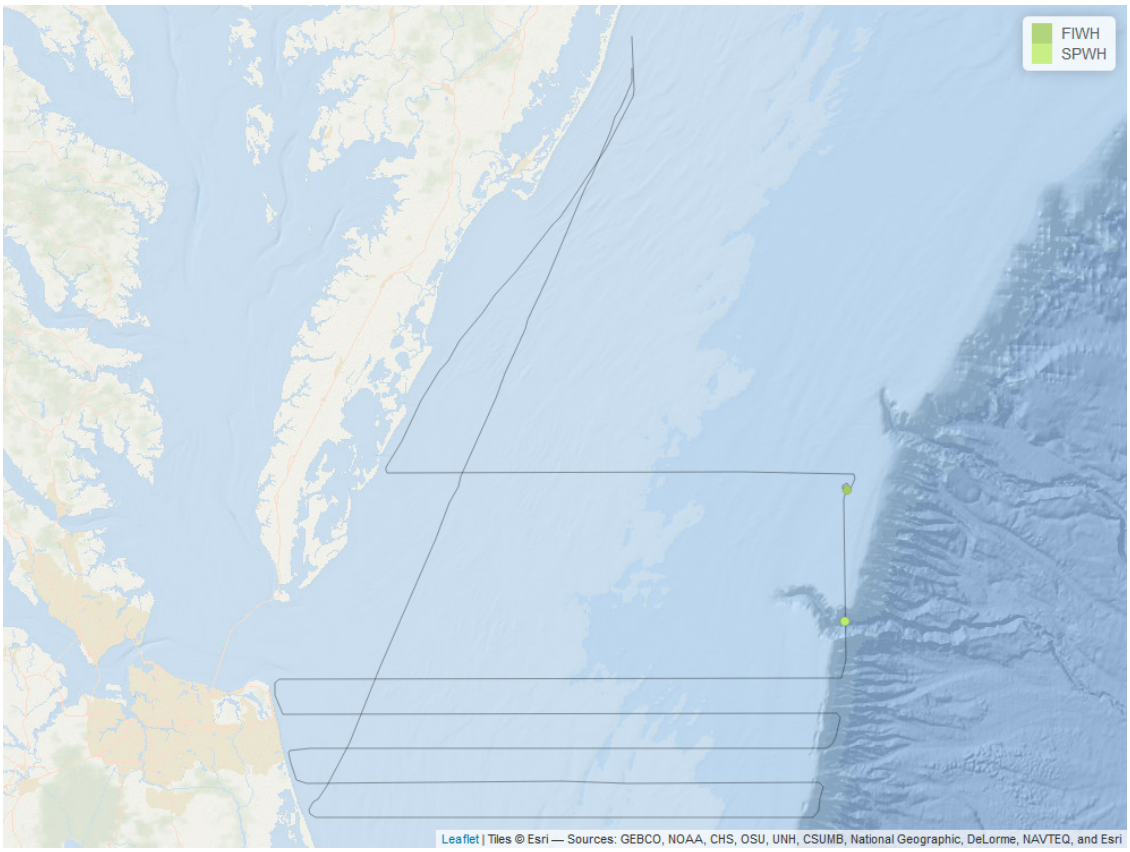
Species	Total Number
Humpback Whale	2

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

04 March 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 2 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

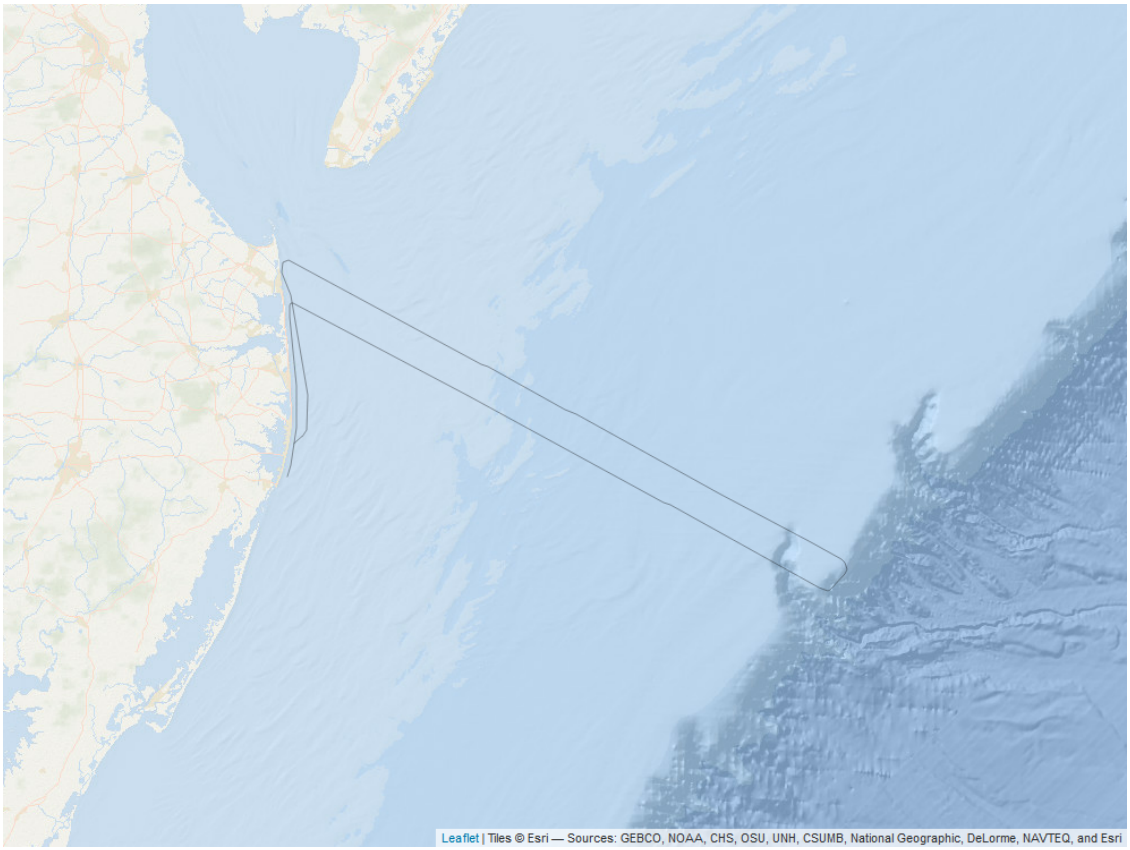
Species	Total Number
Fin Whale	1
Sperm Whale	1

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

08 March 2025



Survey flown in moderate to good conditions. Beaufort ranged from 2 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

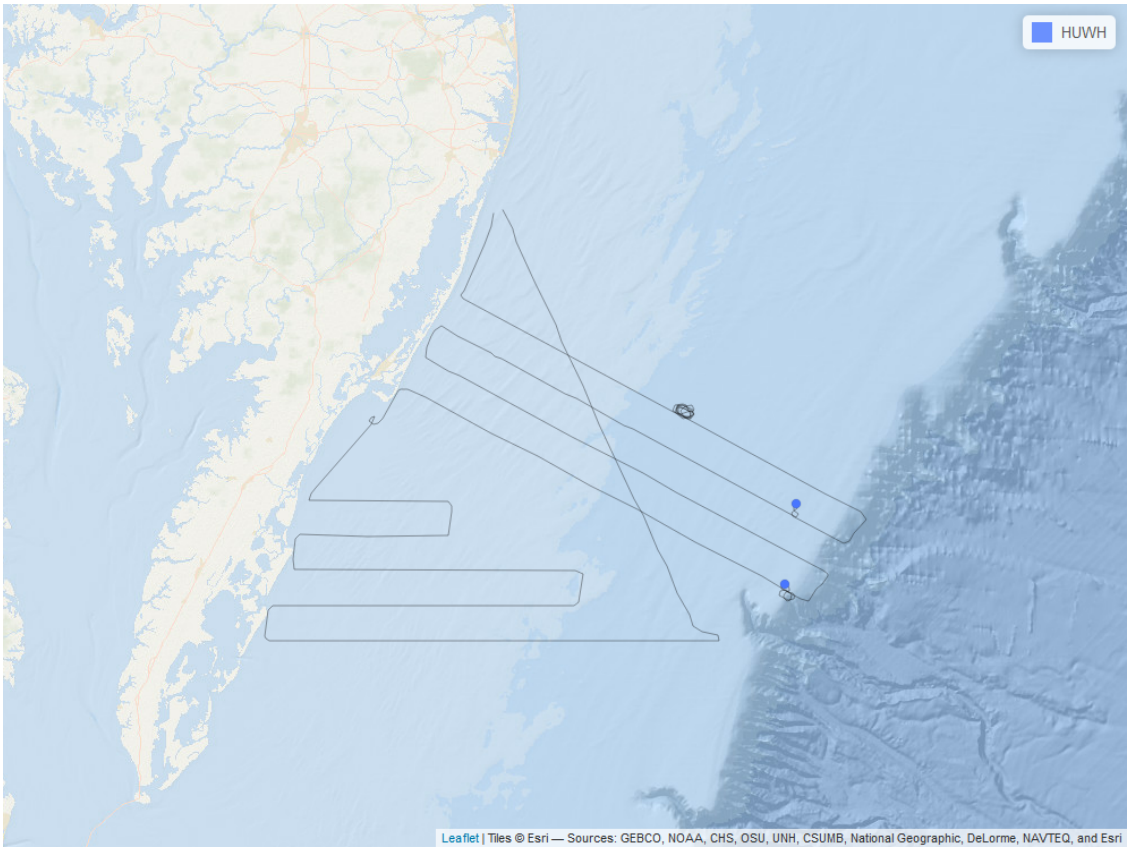
Species	Total Number
No large whales sighted	

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

09 March 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 1 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

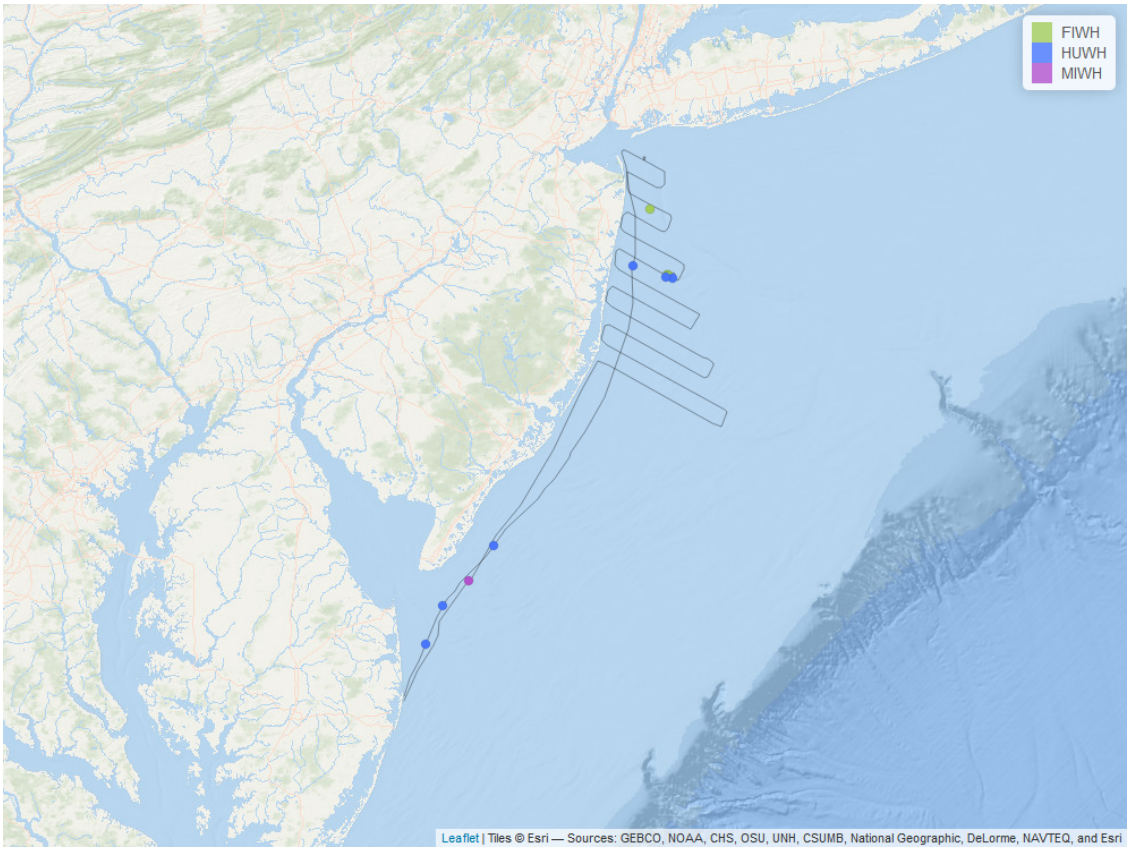
Species	Total Number
Humpback Whale	2

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

10 March 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 2 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

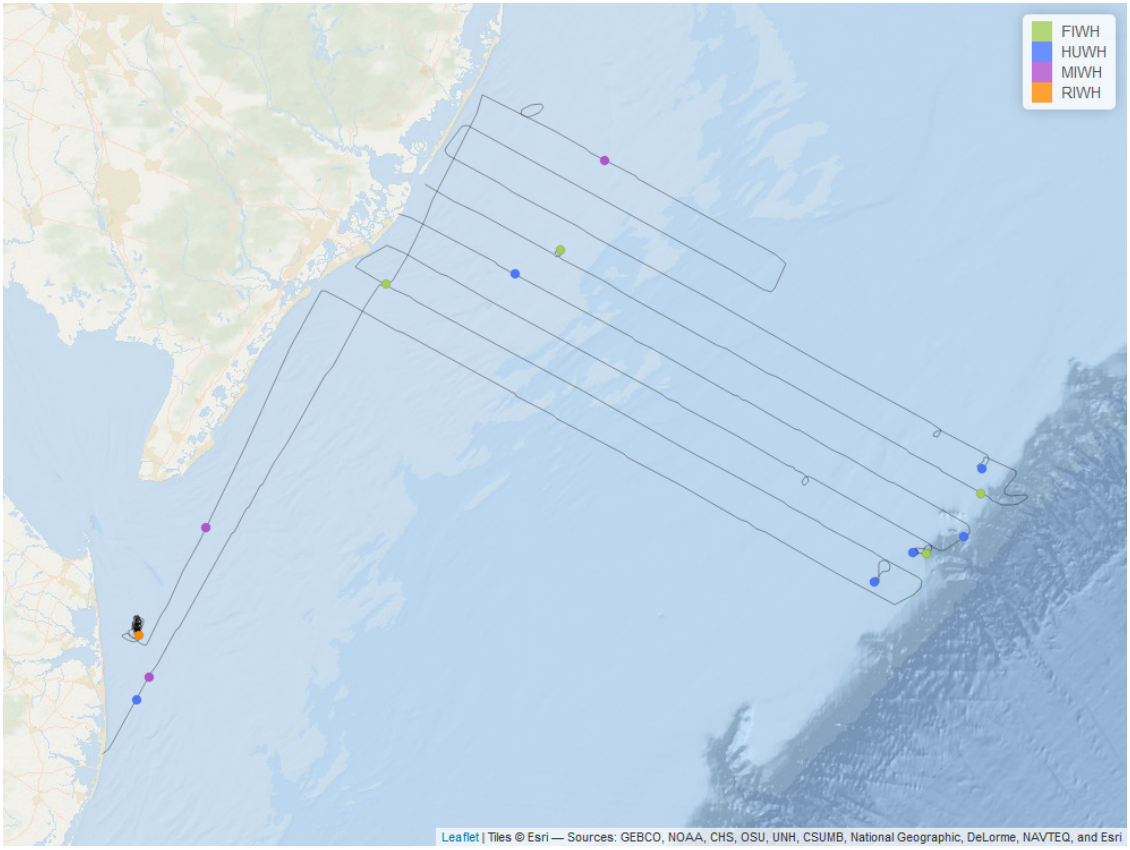
Species	Total Number
Fin Whale	12
Humpback Whale	8
Minke Whale	1

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

11 March 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 0 to 3. Eg 3503 and calf

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

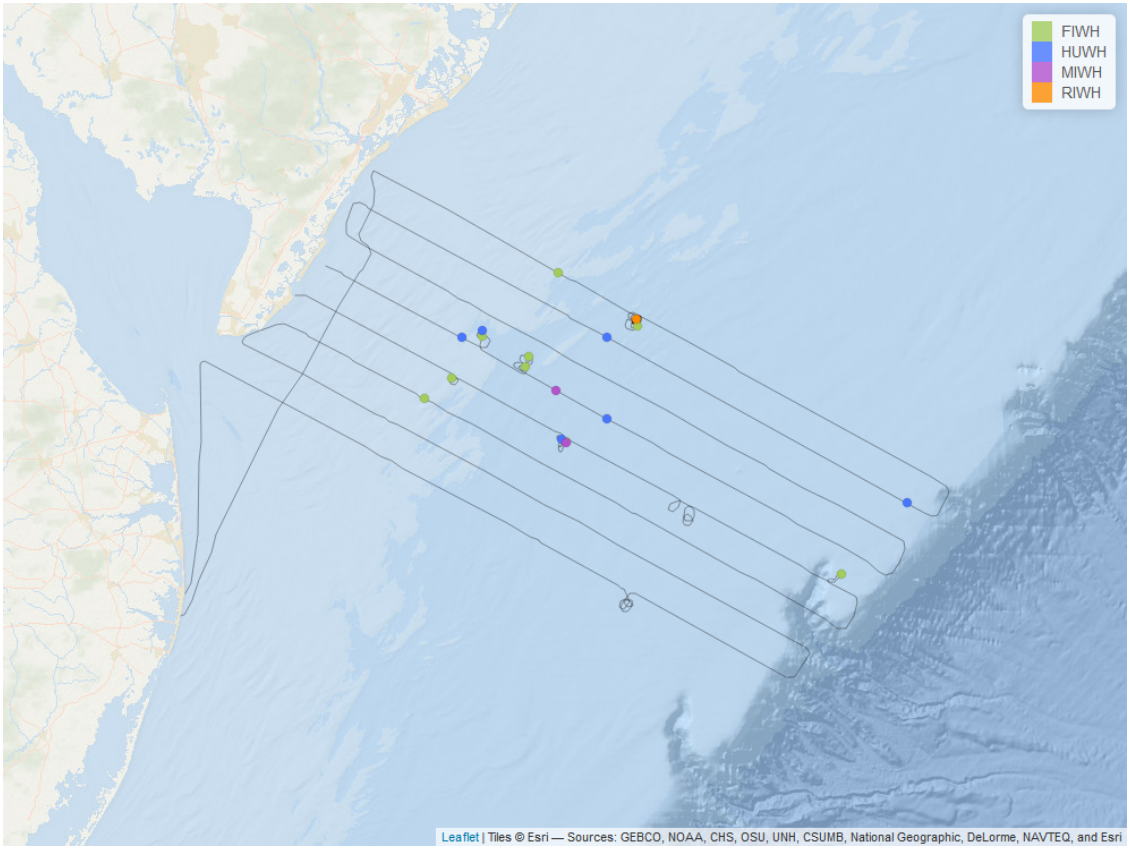
Species	Total Number
Fin Whale	5
Humpback Whale	6
Minke Whale	3
North Atlantic Right Whale	2

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
2025-03-11 17:06:06	38.63792	-74.96979	2	1	slow travel

Right Whale Aerial Survey Report

19 March 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 2 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

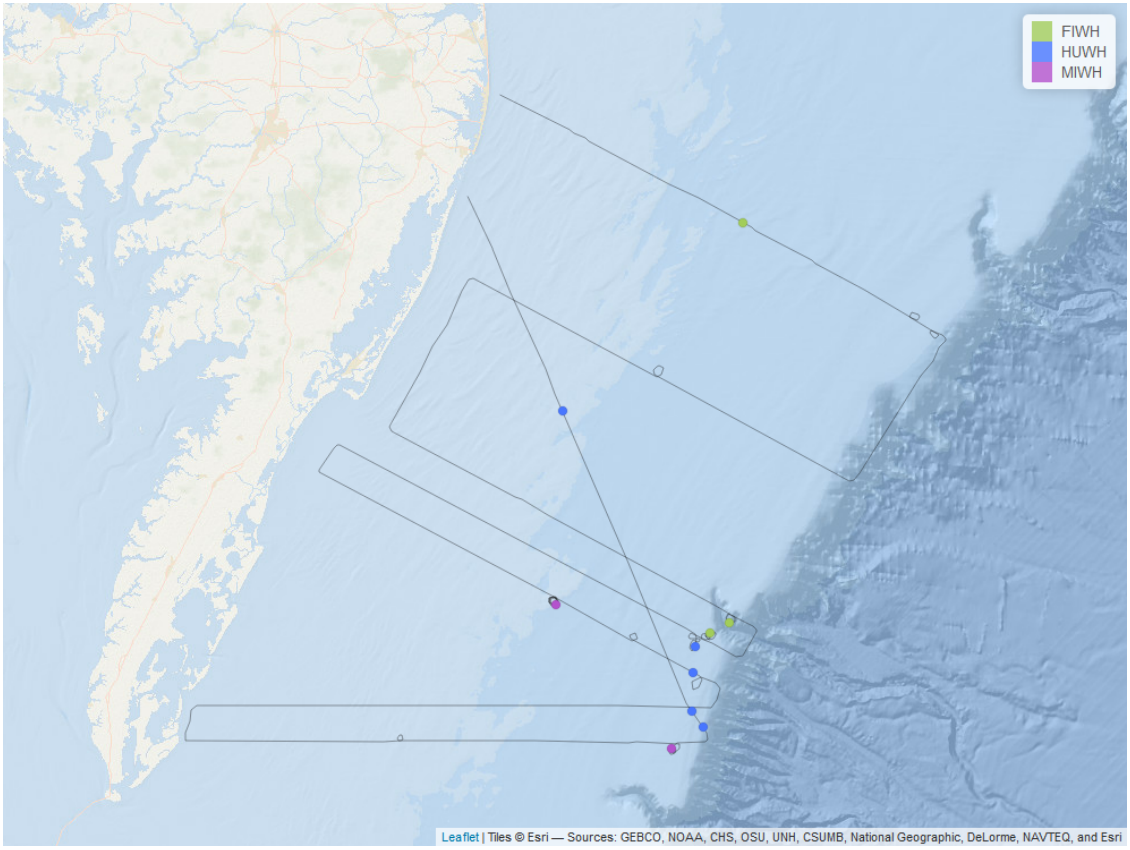
Species	Total Number
Fin Whale	18
Humpback Whale	9
Minke Whale	2
North Atlantic Right Whale	2

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
2025-03-19 NA	38.9621	-73.95549	2	0	moderate swimming

Right Whale Aerial Survey Report

23 March 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 2 to 4.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

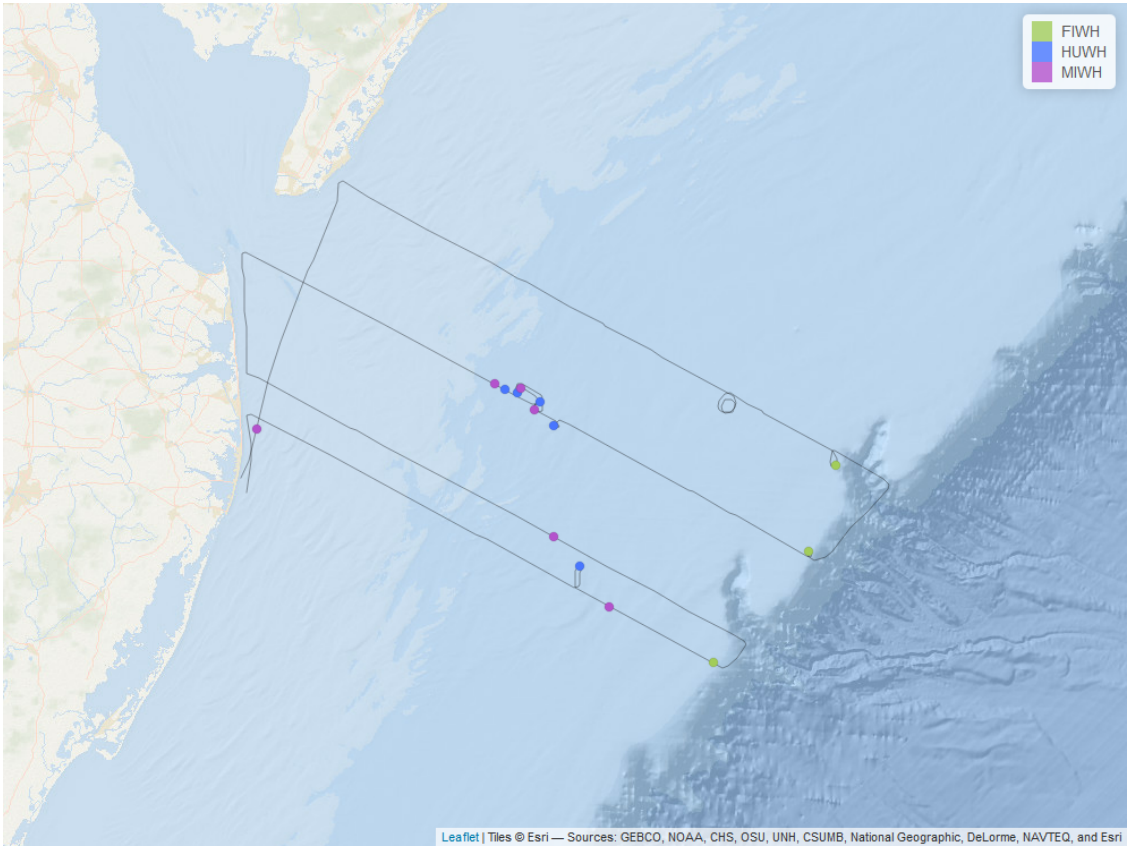
Species	Total Number
Fin Whale	5
Humpback Whale	8
Minke Whale	2

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

25 March 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 1 to 3.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

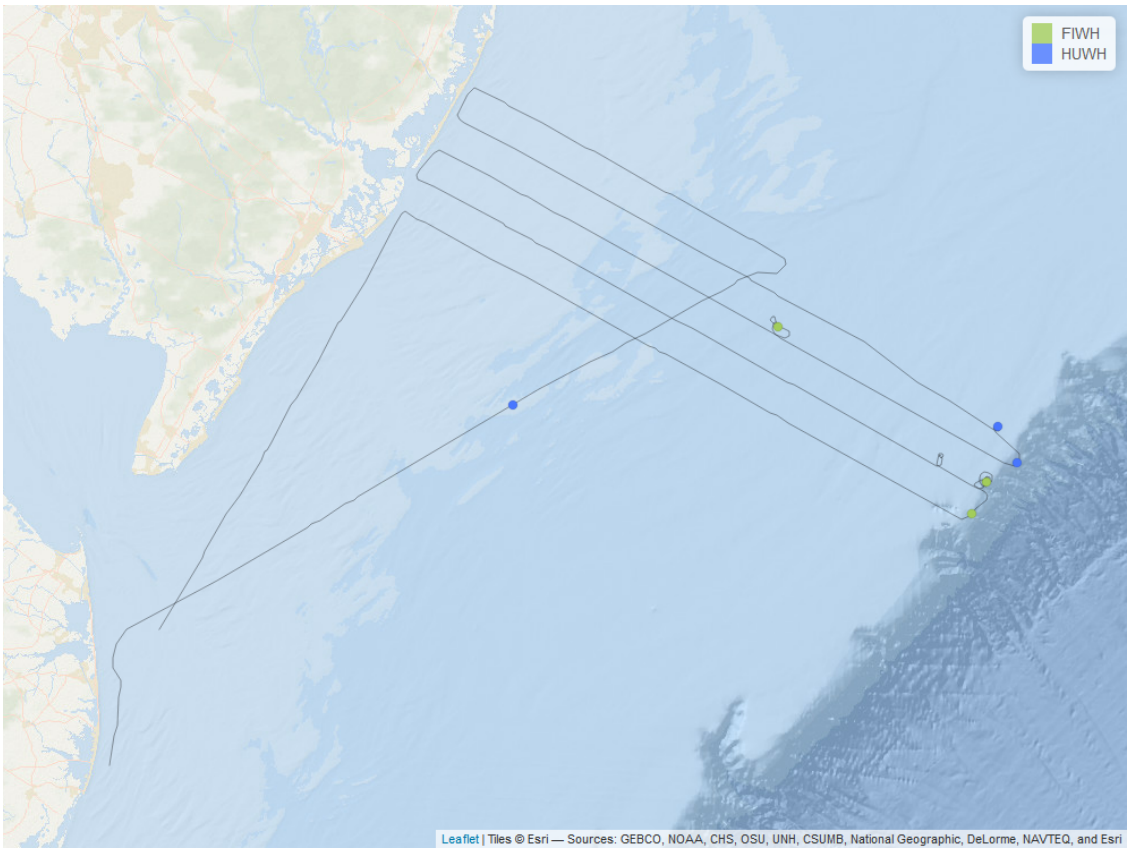
Species	Total Number
Fin Whale	5
Humpback Whale	14
Minke Whale	7

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

28 March 2025



Survey flown in moderate to excellent conditions. Beaufort ranged from 2 to 5.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

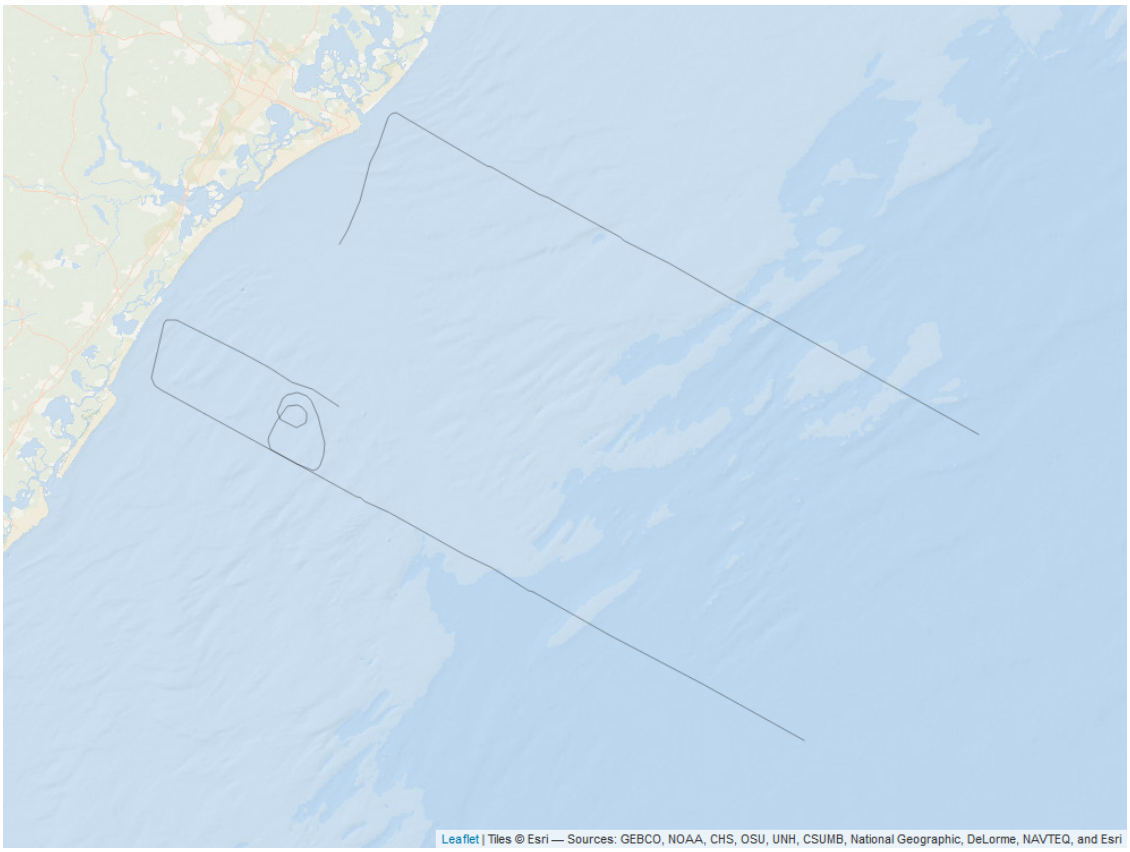
Species	Total Number
Fin Whale	5
Humpback Whale	6

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					

Right Whale Aerial Survey Report

01 April 2025



Survey flown in poor to excellent conditions. Beaufort ranged from 3 to 6.

Only large whale sightings were recorded on this survey.

Table 1: Species Sighted

Species	Total Number
No large whales sighted	

Table 2: Right Whale Sighting(s) Details

Date/Time ET	Latitude	Longitude	Number	Calves	Behavior
No right whales sighted					