

July 2017 Survey Report for New York Bight Whale Monitoring Aerial Surveys

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ACRONYMS AND ABBREVIATIONS

hr	Hour
km	Kilometer
SE	Standard error

1.0 INTRODUCTION

Tetra Tech, Inc., in coordination with Smultea Environmental Sciences, LLC and Aspen Helicopters, Inc. (collectively, the “survey team”), is contracted by the New York State Department of Environmental Conservation (NYDEC), Division of Marine Resources to conduct 36 monthly line-transect aerial surveys focused on the six large whale species most likely to occur in the New York Bight. This survey report documents the survey effort and sightings from the July 2017 survey, representing the fifth of the 36 surveys scheduled to occur under this contract.

2.0 EFFORT

The July 2017 survey occurred from July 1 – 4, 2017. A total of six flights were conducted, representing a total of 25.37 hours in the air (i.e., from aircraft wheels up off the airport tarmac to wheels down on the tarmac for each flight). A total of 4,987 kilometers (km) were flown and included completion of 100 percent of the 15 transect lines. [Figure 1](#) shows the survey lines flown. [Table 1](#) presents the flight time durations and distances by effort type.

TABLE 1. FLIGHT TIME AND DISTANCE BY EFFORT TYPE DURING THE JULY 2017 SURVEY

Survey Dates	Hours and Kilometers (km) by Type of Flight Effort										Total	
	Overland		Transit		Transect		Circling		Cross-Leg		hr	km
	hr	km	hr	km	hr	km	hr	km	hr	km		
	1.66	323	6.99	1,480	14.67	2,806	0.96	176	1.09	202	25.37	4,987

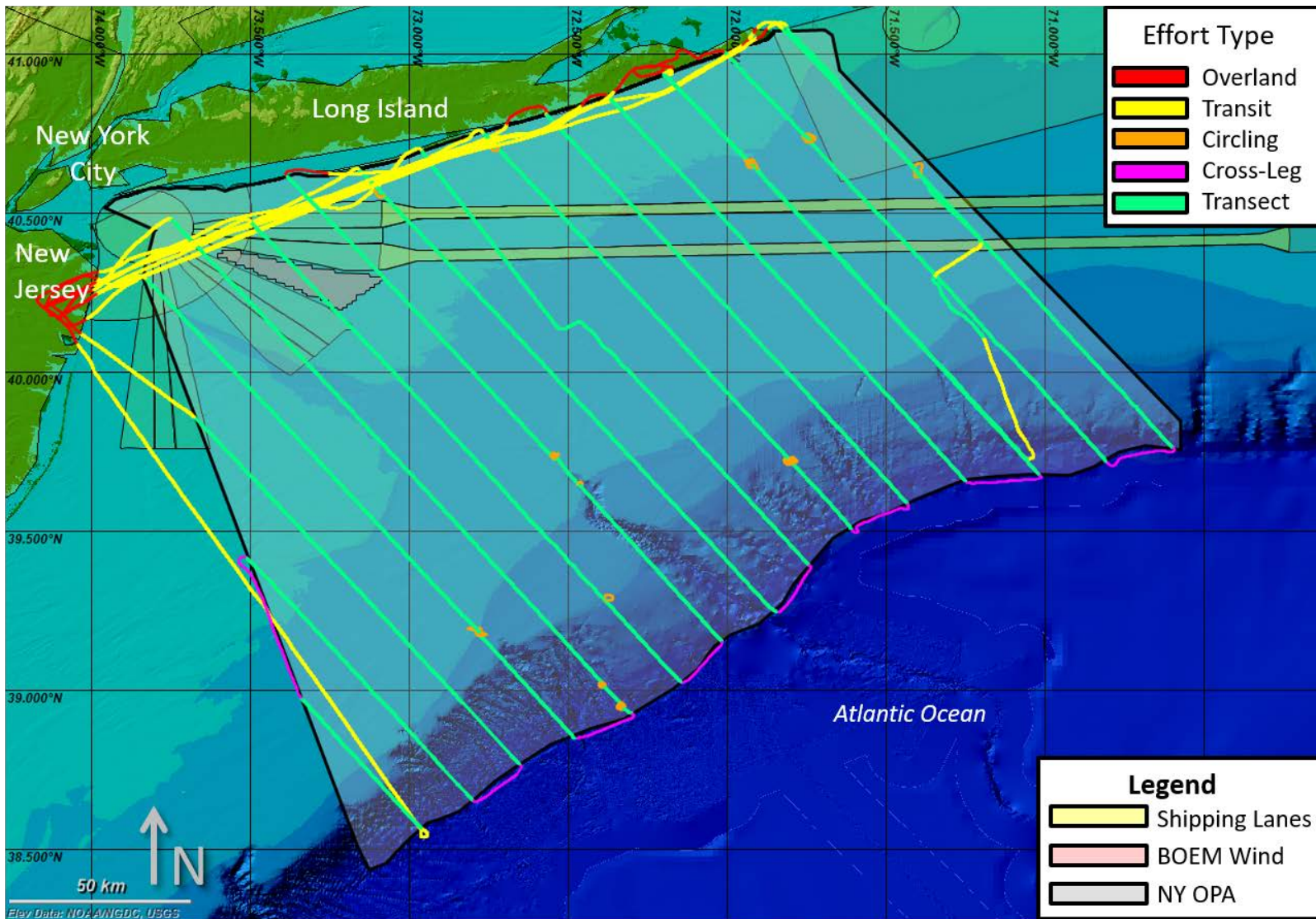


Figure 1. Survey Lines Flown by Effort Type During the July 2017 Survey

3.0 SIGHTINGS

Sightings are presented below based on the following subsections: (1) the six priority large whale species and unidentified whales, (2) other marine mammal sightings, (3) sea turtle sightings, (4) unusual or rare sightings, (5) sightings of dead, injured, stranded, or entangled marine mammals or sea turtles, and (6) other species/object sightings. [Figure 2](#) is a map of all large whale sighting locations and [Figure 3](#) is a map of all marine mammal and sea turtle sighting locations.

3.1 LARGE WHALE SIGHTINGS

A total of seven sightings of an estimated seven individual large whales were seen ([Table 2](#)). Five of the seven sightings were identified to species. The most frequently seen whale was the sperm whale, followed by one sighting of a single minke whale and one sighting of a single fin whale. A total of three groups comprising three individual sperm whales were seen.

There were two large whale sightings that were not identified to species. The animals were observed while on transect lines but once circled were not observed again, thus identification was not confirmed.

TABLE 2. NUMBER OF THE LARGE WHALE SPECIES SIGHTED DURING THE JULY 2017 SURVEY

Common Name*	Scientific Name	Number of Groups	Total Number of Individuals	Mean Group Size (SE)
Blue Whale	<i>Balaenoptera musculus</i>	0	0	0
Fin Whale	<i>B. physalus</i>	1	1	1 (-)
Humpback Whale	<i>Megaptera novaeangliae</i>	0	0	0
North Atlantic Right Whale	<i>Eubalaena glacialis</i>	0	0	0
Minke Whale	<i>B. acutorostrata</i>	1	1	1 (-)
Sei Whale	<i>B. borealis</i>	0	0	0
Sperm Whale	<i>Physeter macrocephalus</i>	3	3	1(0)
Unidentified Baleen Large Whale		2	2	1(0)
Total		7	7	

Notes:

*Listed in alphabetic order

SE = Standard error

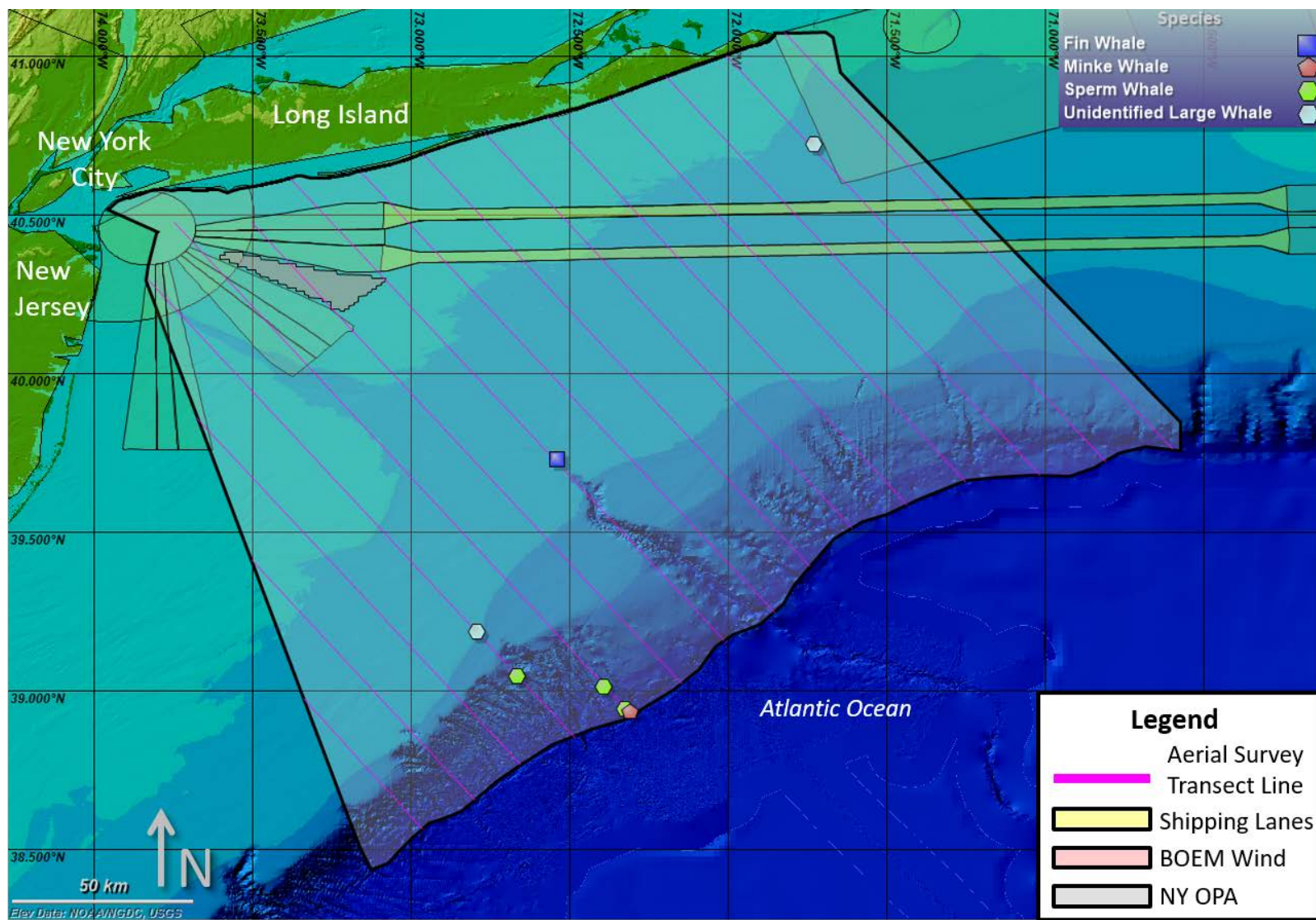


Figure 2. Locations of All Groups of Large Whales Sighted During the July 2017 Survey

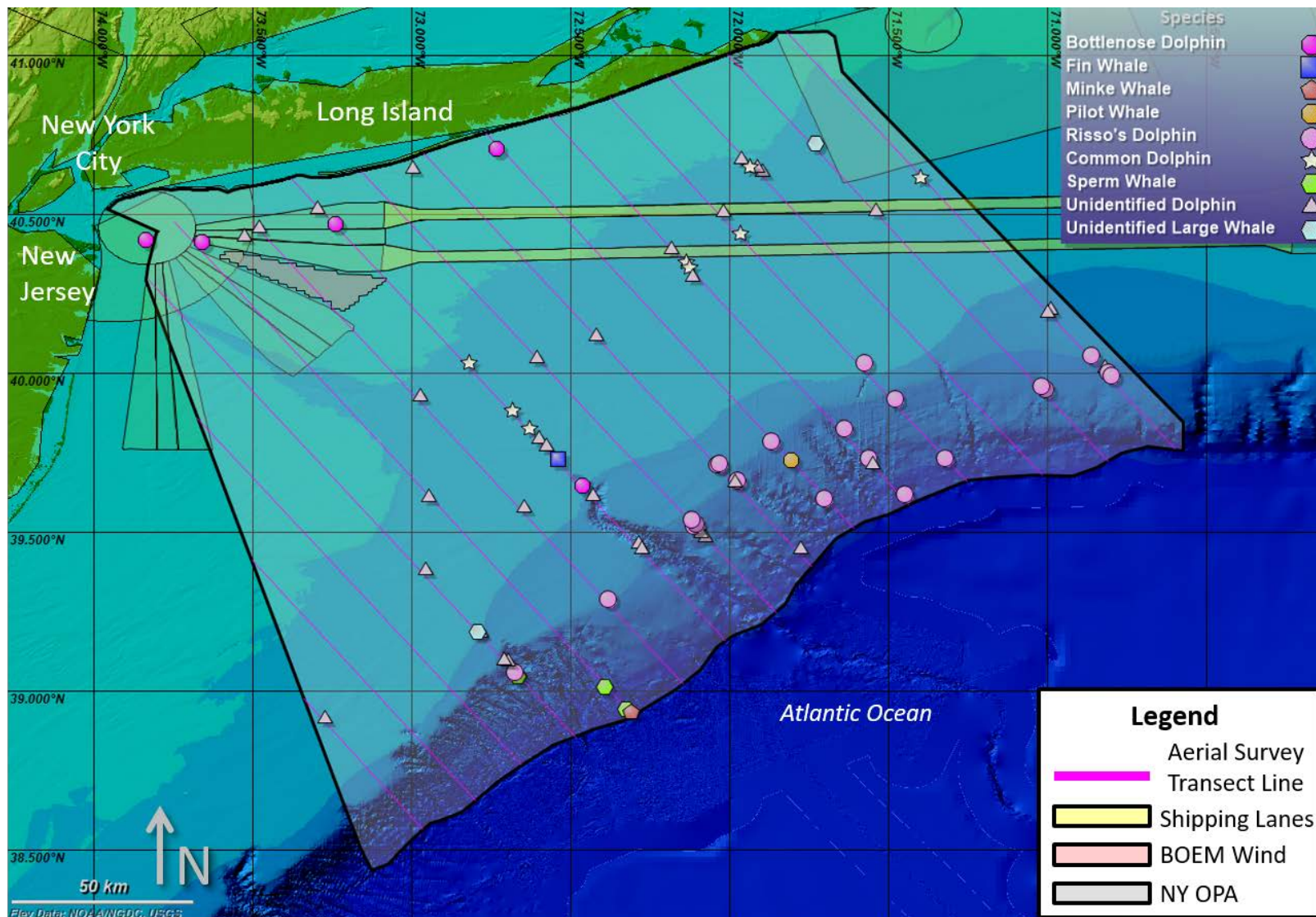


Figure 3. Locations of All Groups of Marine Mammals Sighted During the July 2017 Survey

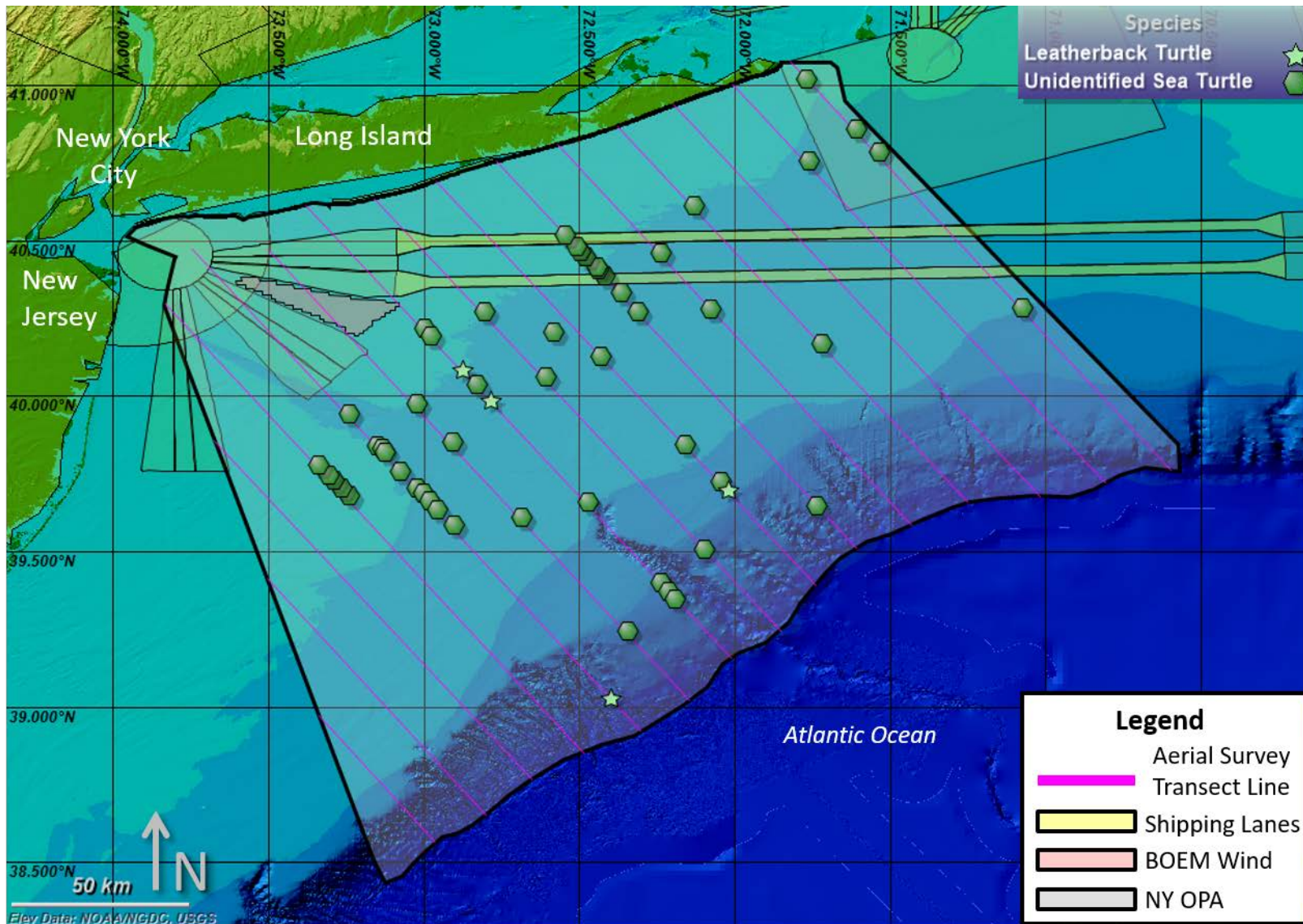


Figure 4. Locations of All Sea Turtles Sighted During the July 2017 Survey

3.2 OTHER MARINE MAMMAL SIGHTINGS

A minimum total of 69 sightings of an estimated 2,110 individual other marine mammals (all delphinids) were observed (Table 3). Of these sightings, 35 groups totaling 1,195 individuals were identified to species. The remaining 34 sightings (915 individuals) were of unidentified dolphins (note, in accordance with the project scope of work, dolphins were not circled to confirm species).

TABLE 3. OTHER MARINE MAMMAL SIGHTINGS DURING THE JULY 2017 SURVEY

Common Name*	Scientific Name	Number of Groups	Total Number of Individuals	Mean Group Size (SE)
Bottlenose Dolphin	<i>Tursiops truncatus</i>	5	47	9.4 (6.4)
Common Dolphin	<i>Delphinus delphis</i>	8	932	116.5 (57.6)
Long-finned pilot whales	<i>Globicephala melas</i>	1	40	40 (-)
Risso's Dolphin	<i>Grampus Griseus</i>	21	176	8.4 (1.4)
Unidentified Dolphin		34	915	26.9 (8.0)
Total		69	2,110	

Notes:

*Listed in alphabetic order

SE = Standard error

3.3 SEA TURTLE SIGHTINGS

There were 56 sea turtle sightings during this survey. Four leatherback sea turtles and 52 sea turtles that could not be identified to species were seen, as shown in [Figure 4](#).

3.4 UNUSUAL OR RARE SIGHTINGS

Unusual or rare sightings included one group (40 estimated individuals) of long-finned pilot whales (*Globicephala melas*); see [Figure 3](#). A minimum of one calf was later confirmed on photographs.

3.5 STRANDING AND ENTANGLEMENT REPORTS

There were no sightings of dead, injured, stranded, or entangled marine mammals or sea turtles during this survey.

3.6 OTHER SIGHTINGS

In addition to those described above, there were three other types of non-marine mammal sightings. In order to focus observation efforts on searching for large priority whale species, details on these sightings were recorded opportunistically only into the voice recordings (e.g., time, estimated body length and coloration, behavior, and group size). We used hot keys on the laptop running the software Mysticetus to mark the locations of these sightings when doing so would not interfere significantly with priority observation efforts (e.g., in areas where all sightings were relatively low). The sightings below consist of those for which locations were noted using the computer in the field; thus, they should be considered *minimum numbers* of sightings. Review of the voice recorder data would be required to fully enumerate these sightings and their locations (e.g., we orally recorded the time of these sightings, which could be merged with GPS in the future to determine locations).

- Minimum 10 (15 estimated individuals) hammerhead shark (*Sphyrna* sp.) sightings
- Minimum 13 (14 estimated individuals) unidentified shark sightings
- Minimum 35 (40 estimated individuals) sunfish (*Mola mola*) sightings

4.0 PROBLEMS ENCOUNTERED

No problems were encountered during this survey.

5.0 PHOTOGRAPHS

The following photographs provide an overview of some of the sightings during this survey. Additional photographs will be included in the data deliverable.



Figure 5. Sperm whale, photo credit: Kate Lomac-MacNair (Smultea Environmental Sciences)



Figure 6. Long-finned pilot whales, photo credit: Kate Lomac-MacNair (Smultea Environmental Sciences)



Figure 7. Long-finned pilot whales with mother and calf pair, photo credit: Kate Lomac-MacNair (Smultea Environmental Sciences)