

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

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Prepared for:

Division of Marine Resources
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233

Prepared by:

Tetra Tech, Inc.
1999 Harrison St. Ste. 500
Oakland, CA 94612



and

Smultea Environmental Sciences, LLC.
PO Box 256
Preston, WA 98050



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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 September 2017 survey, representing the seventh of the 36 surveys scheduled to occur under this contract.

2.0 EFFORT

The September 2017 survey occurred from September 24 – 30, 2017. A total of 12 flights were conducted, representing a total of 31.6 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 6,394.7 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. Due to weather, this survey involved more transit time than average. Areas of low-lying fog, cloud cover and high Beaufort sea state required the repetition of portions (i.e. holes) of survey lines thus creating more transit effort. This is depicted by yellow track lines in [Figure 1](#).

TABLE 1. FLIGHT TIME AND DISTANCE BY EFFORT TYPE DURING THE SEPTEMBER 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
September 24-30, 2017	2.1	421.8	12.6	2,718.4	15.0	2893.1	0.7	129.6	1.2	231.8	31.6	6,394.7

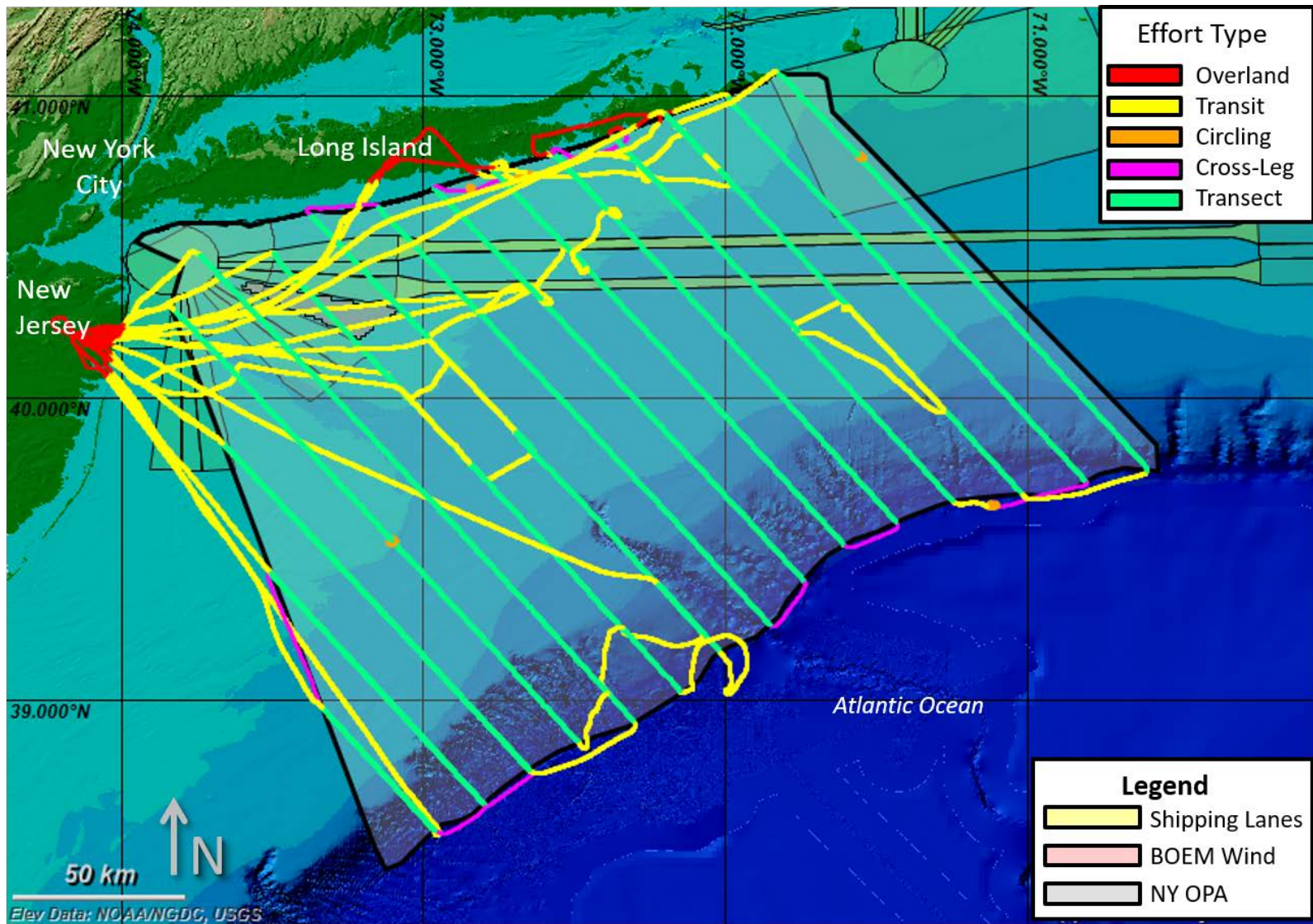


Figure 1. Survey Lines Flown by Effort Type During the September 2017 Survey

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, [Figure 3](#) is a map of all marine mammal sighting locations, and [Figure 4](#) is a map of all sea turtle sighting locations.

3.1 LARGE WHALE SIGHTINGS

A total of three sightings of an estimated three individual large whales were seen ([Table 2](#)). All of the three sightings were identified to species. Large whale sightings included a single fin whale, single minke whale, and single sperm whale. There were no large whale sightings that were not identified to species.

TABLE 2. NUMBER OF THE LARGE WHALE SPECIES SIGHTED DURING THE SEPTEMBER 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>	1	1	1 (-)
Unidentified Large Whale		0	0	0
Total		3	3	1

Notes:

*Listed in alphabetical order

SE = Standard error

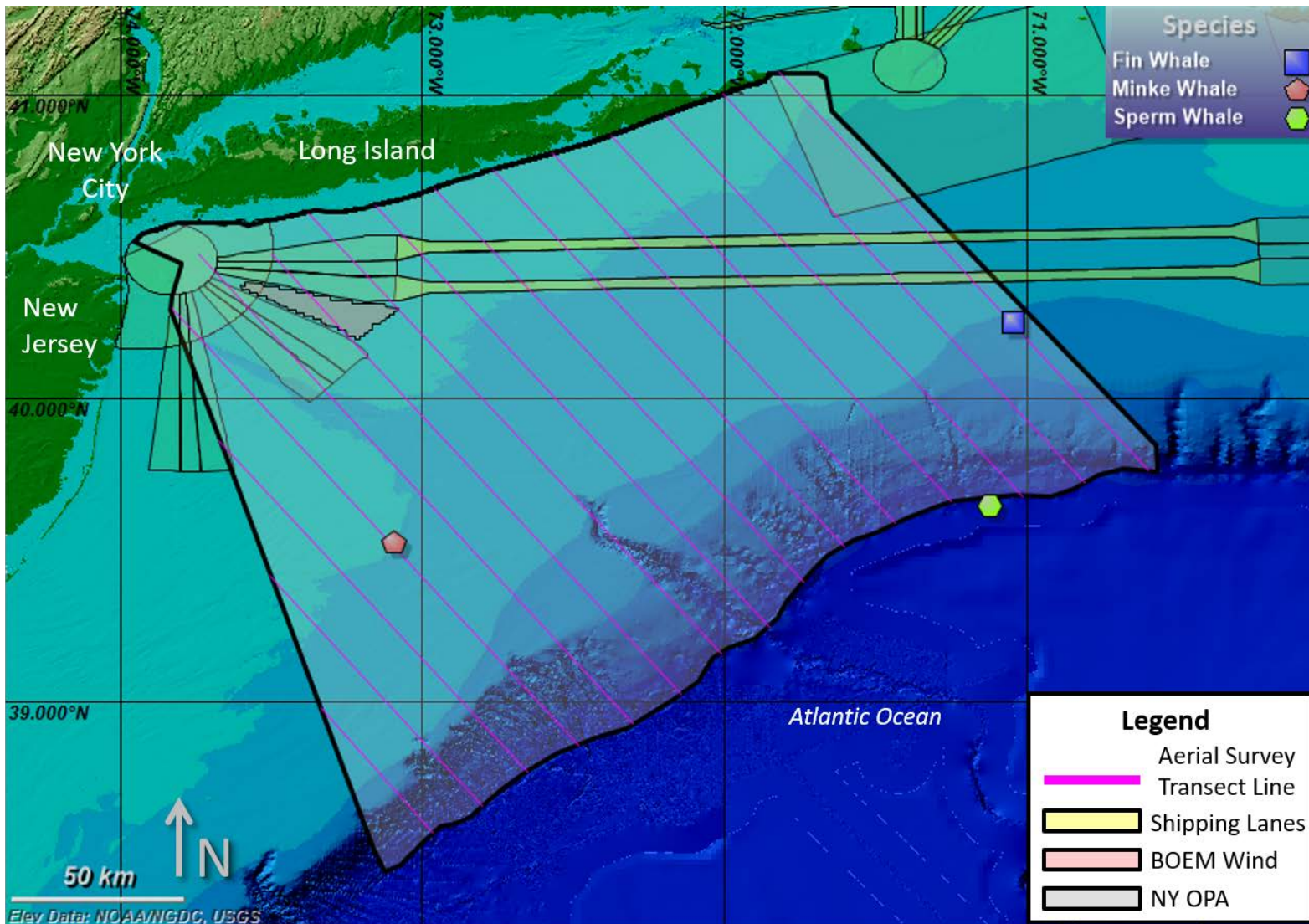


Figure 2. Locations of All Groups of Large Whales Sighted During the September 2017 Survey

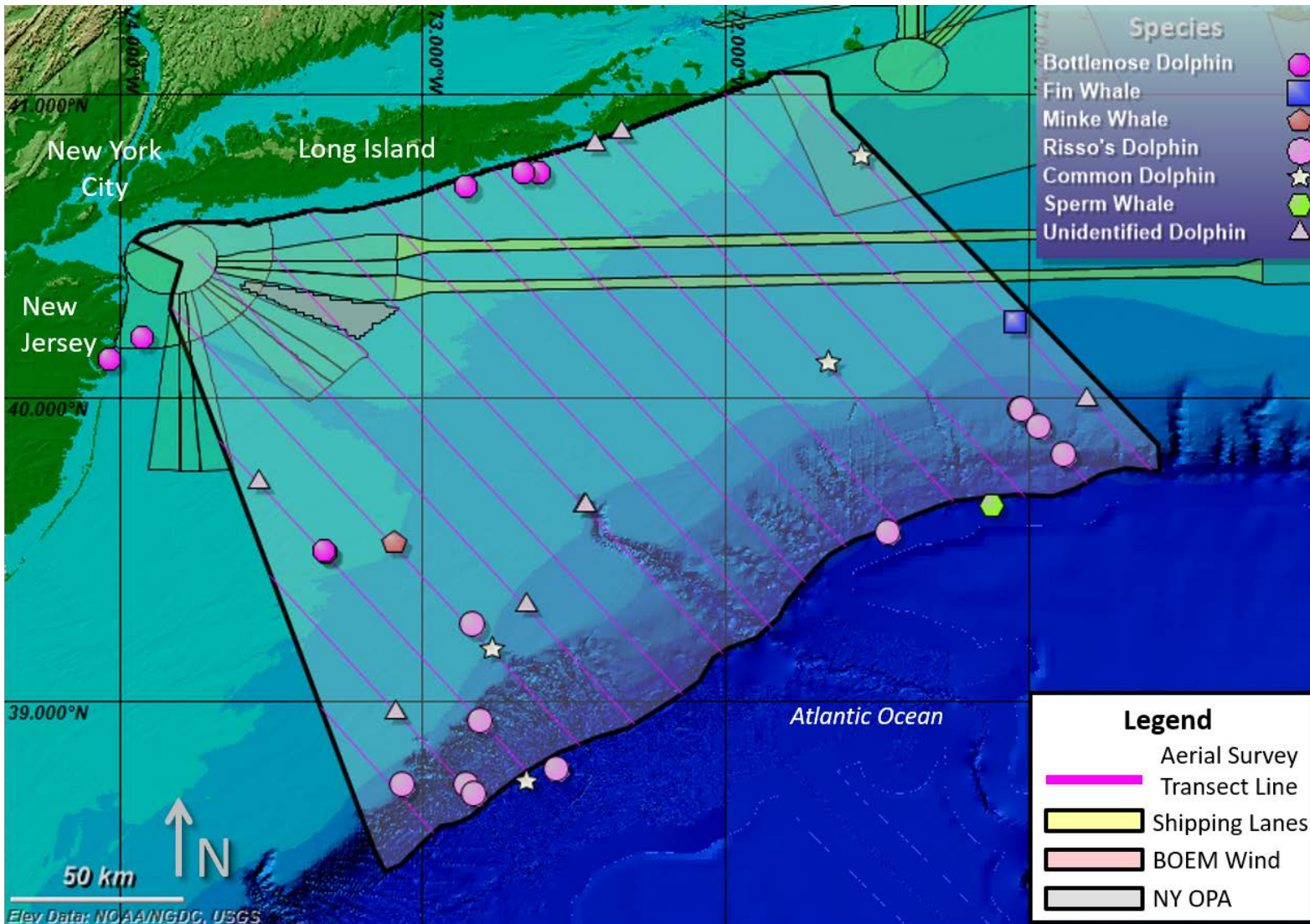


Figure 3. Locations of All Groups of Marine Mammals Sighted During the September 2017 Survey

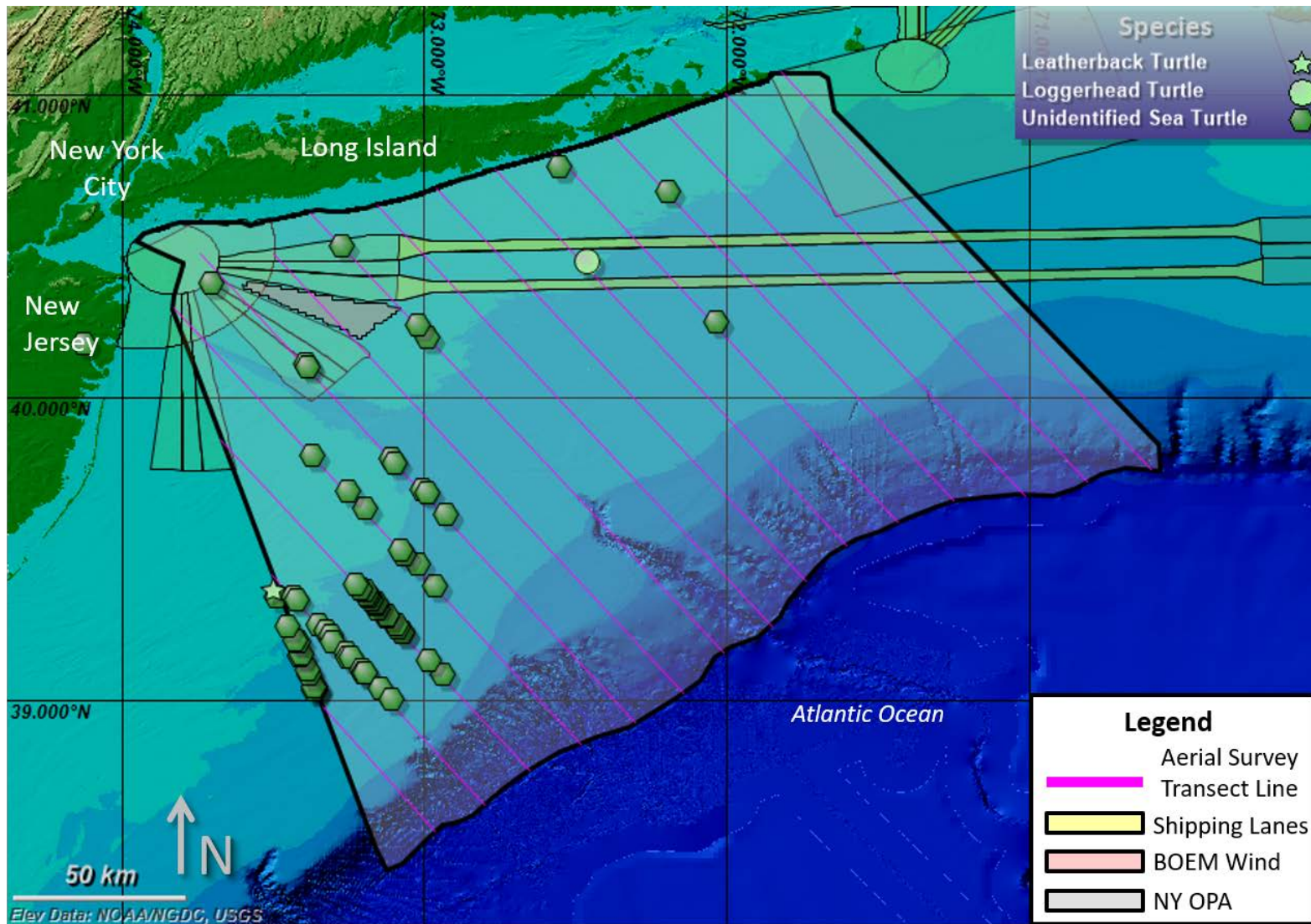


Figure 4. Locations of All Sea Turtles Sighted During the September 2017 Survey

3.2 OTHER MARINE MAMMAL SIGHTINGS

A minimum total of 33 sightings of an estimated 789 individual marine mammals other than the six priority whale species were observed (Table 3). Of these sightings, 24 groups totaling 576 individuals were identified to species. The remaining nine sightings (213 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 SEPTEMBER 2017 SURVEY*

Common Name**	Scientific Name	Number of Groups	Total Number of Individuals	Mean Group Size (SE)
Bottlenose Dolphin	<i>Tursiops truncatus</i>	7	83	11.9 (2.3)
Common Dolphin	<i>Delphinus delphis</i>	4	317	79.3 (57.2)
Pilot whale	<i>Globicephala</i> sp.	0	0	N/A
Risso's Dolphin	<i>Grampus griseus</i>	13	176	13.5 (3.5)
Unidentified Dolphin		9	213	26.5 (5.6)
Unidentified Cetacean		0	0	N/A
Total		33	789	

Notes:

*Some species identifications are preliminary and not certain due to not circling/photographing

**Listed in alphabetical order

SE = Standard error

3.3 SEA TURTLE SIGHTINGS

There were 68 sea turtle sightings during this survey.

3.4 UNUSUAL OR RARE SIGHTINGS

There were no unusual or rare sightings.

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 other types of non-marine mammal sightings. In order to focus observation efforts on searching for large priority whale species, only the sighting type, time, and general location of these other sightings were recorded opportunistically as feasible, with additional details recorded into the voice recordings (e.g., 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 general 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 (e.g., we orally recorded the time of these sightings, which could be merged with GPS in the future to determine locations).

- Minimum 11 (13 estimated individuals) hammerhead shark (*Sphyrna* sp.) sightings
- Minimum 21 (27 estimated individuals) unidentified shark sightings
- Minimum nine (9 estimated individuals) sunfish (*Mola mola*) sightings
- Minimum 12 (5057 estimated individuals) small ray 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: Andrew Buchy (Tetra Tech)



Figure 6. Bottlenose dolphin, photo credit: Andrew Buchy (Tetra Tech)



Figure 7. Fish school, photo credit: Andrew Buchy (Tetra Tech)