

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

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TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS	ii
1.0 INTRODUCTION	1
2.0 EFFORT.....	1
3.0 SIGHTINGS	3
3.1 LARGE WHALE SIGHTINGS	3
3.2 OTHER MARINE MAMMAL SIGHTINGS.....	8
3.3 SEA TURTLE SIGHTINGS.....	8
3.4 UNUSUAL OR RARE SIGHTINGS.....	8
3.5 STRANDING AND ENTANGLEMENT REPORTS.....	8
3.6 OTHER SIGHTINGS	8
4.0 PROBLEMS ENCOUNTERED.....	9
5.0 PHOTOGRAPHS	10

FIGURES

Figure 1. Survey Lines Flown by Effort Type During the November 2017 Survey	2
Figure 2. Locations of All Groups of Large Whales Sighted During the November 2017 Survey.....	4
Figure 3. Locations of All Groups of Marine Mammals Sighted During the November 2017 Survey (Note: unidentified beaked whale was sighted close to fin whales thus not visible in this map, see Figure 4 for location of both sightings)	5
Figure 4. Zoomed in section of Figure 3 to show locations of fin whale and unidentified beaked whale.....	6
Figure 5. Locations of All Sea Turtles Sighted During the November 2017 Survey.....	7
Figure 6. North Atlantic right whale, photo credit: Kate Lomac-MacNair (Smultea Environmental Sciences)	10
Figure 7. North Atlantic right whale, photo credit: Kate Lomac-MacNair (Smultea Environmental Sciences)	11

TABLES

Table 1. Flight Time and Distance by Effort Type During The November 2017 Survey	1
Table 2. Number of the Large Whale Species Sighted During the November 2017 Survey	3
Table 3. Other Marine Mammal Sightings During the November 2017 Survey*	8

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 November 2017 survey, representing the ninth of the 36 surveys scheduled to occur under this contract.

2.0 EFFORT

The November 2017 survey occurred from November 7-12, 2017. A total of eight flights were conducted, representing a total of 20.87 hours in the air (i.e., from wheels up on the airport tarmac to wheels down on the tarmac for each flight). A total of 4,800.29 kilometers (km) were flown. On November 12, during the last flight, the plane experienced mechanical malfunctions due to apparent issues with the batteries or alternator. The decision was made by the pilots and observation team to abort the remaining lines (the offshore ~ 70 km of lines 8 and 9) and return to Monmouth Airport for safety purposes. The portion of Lines 8 and 9 that was left represented less than 5 % (140 km) of the overall survey area. [Figure 1](#) shows the survey lines completed. [Table 1](#) presents the flight time durations and distances by effort type.

TABLE 1. FLIGHT TIME AND DISTANCE BY EFFORT TYPE DURING THE NOVEMBER 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		
November 7-12, 2017	1.31	276.71	6.20	1,530.54	11.51	2,600.36	0.88	175.15	0.97	217.53	20.87	4,800.29

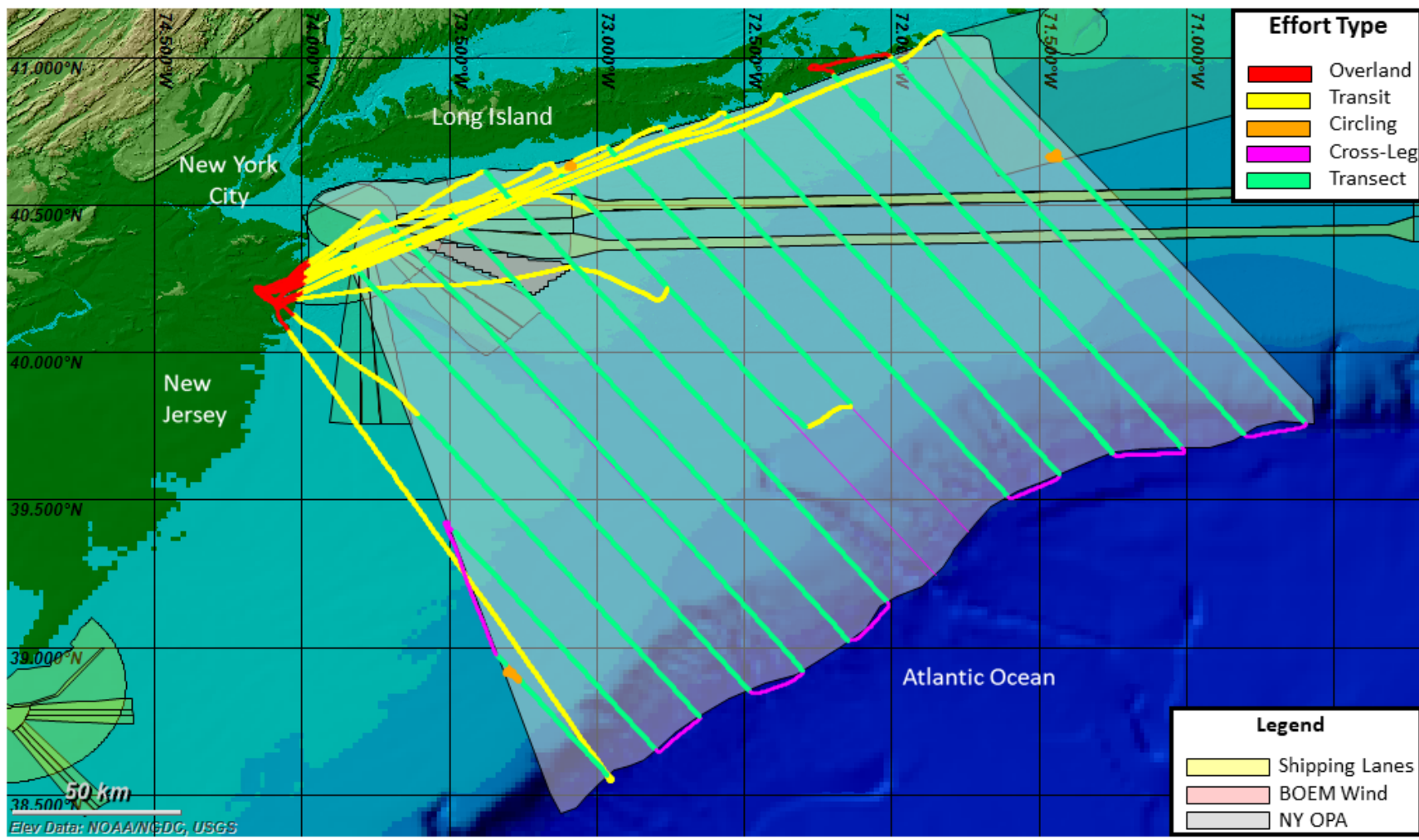


Figure 1. Survey Lines Flown by Effort Type During the November 2017 Survey

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, [Figure 4](#) is a detail of two marine mammal sightings that were close together, and [Figure 5](#) is a map of all sea turtle sighting locations.

3.1 LARGE WHALE SIGHTINGS

A total of three sightings of an estimated six individual large whales were seen ([Table 2](#)). All these sightings were identified to species. Large whale sightings included one group (two individuals) of humpback whales, one group (two individuals) of fin whales and one group (two individuals) of North Atlantic right whales. The North Atlantic right whale sightings were reported to the New England Right Whale by telephone after completion of the flight (i.e. within 24 hr).

TABLE 2. NUMBER OF THE LARGE WHALE SPECIES SIGHTED DURING THE NOVEMBER 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	2	2 (NA)
Humpback Whale	<i>Megaptera novaeangliae</i>	1	2	2 (NA)
North Atlantic Right Whale	<i>Eubalaena glacialis</i>	1	2	2 (NA)
Minke Whale	<i>B. acutorostrata</i>	0	0	0
Sei Whale	<i>B. borealis</i>	0	0	0
Sperm Whale	<i>Physeter macrocephalus</i>	0	0	0
Unidentified Large Whale		0	0	0
Total		3	6	

Notes:

*Listed in alphabetical order

NA = not applicable; SE = Standard error

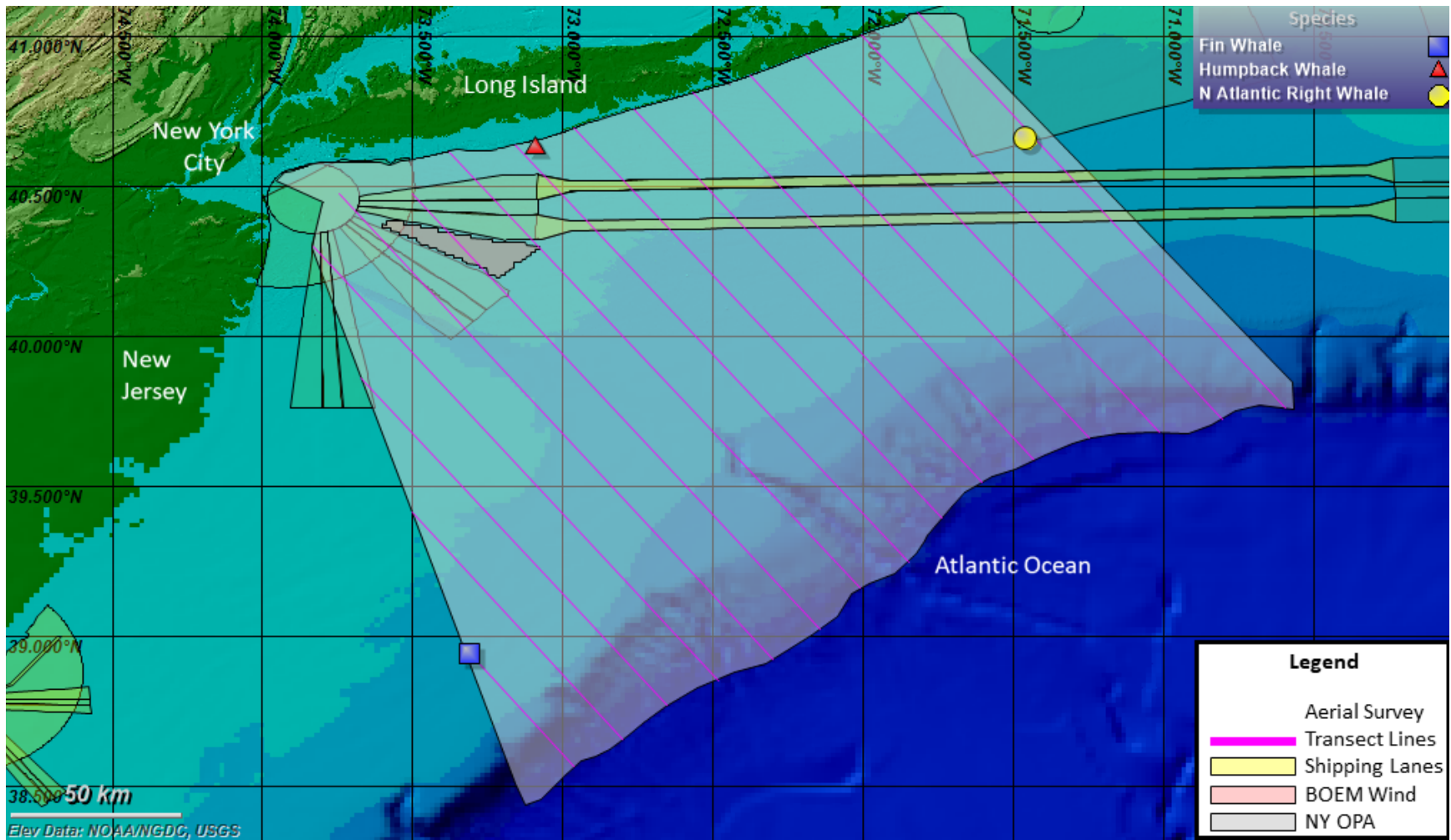


Figure 2. Locations of All Groups of Large Whales Sighted During the November 2017 Survey

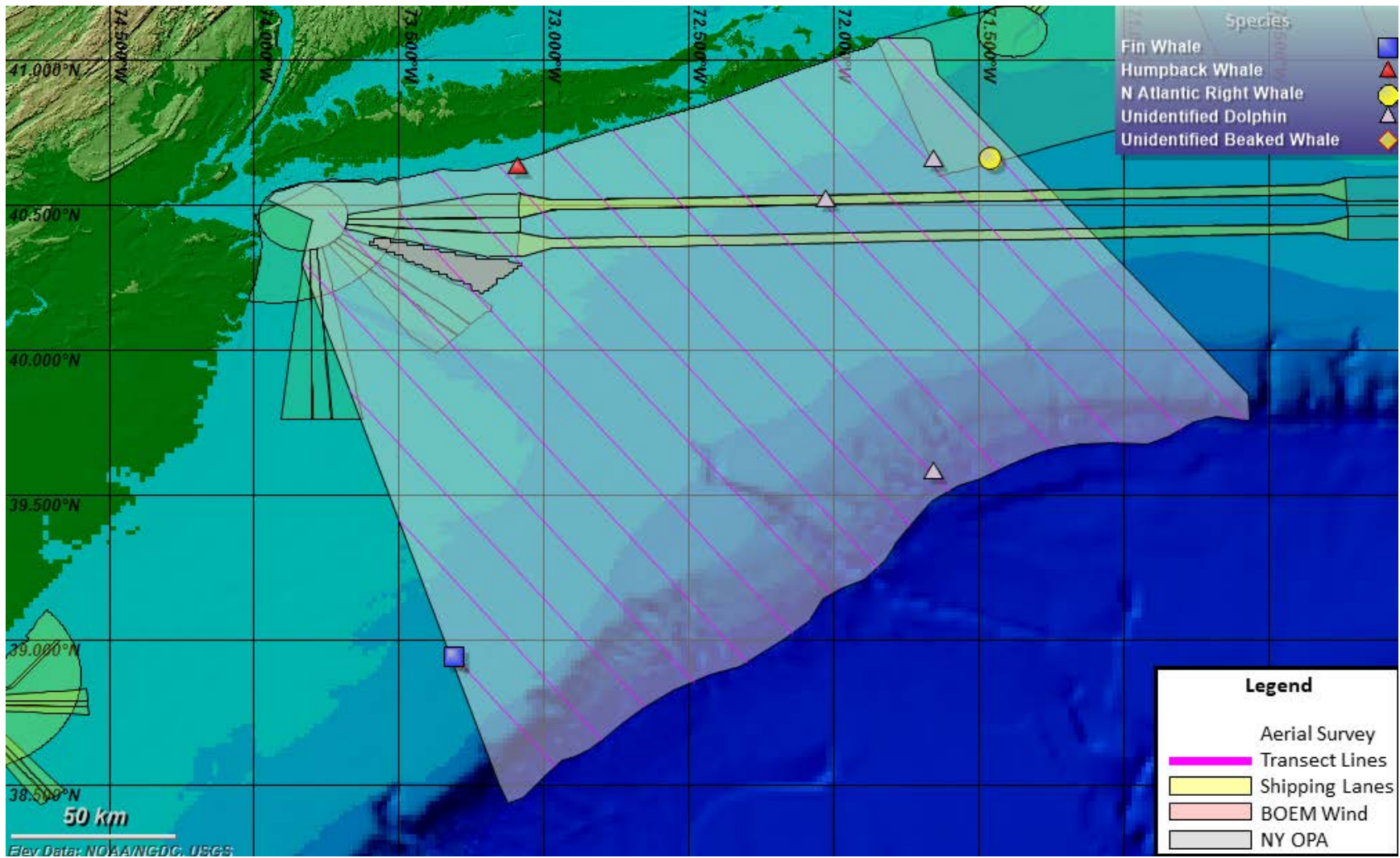


Figure 3. Locations of All Groups of Marine Mammals Sighted During the November 2017 Survey (Note: unidentified beaked whale was sighted close to fin whales thus not visible in this map, see [Figure 4](#) for location of both sightings)

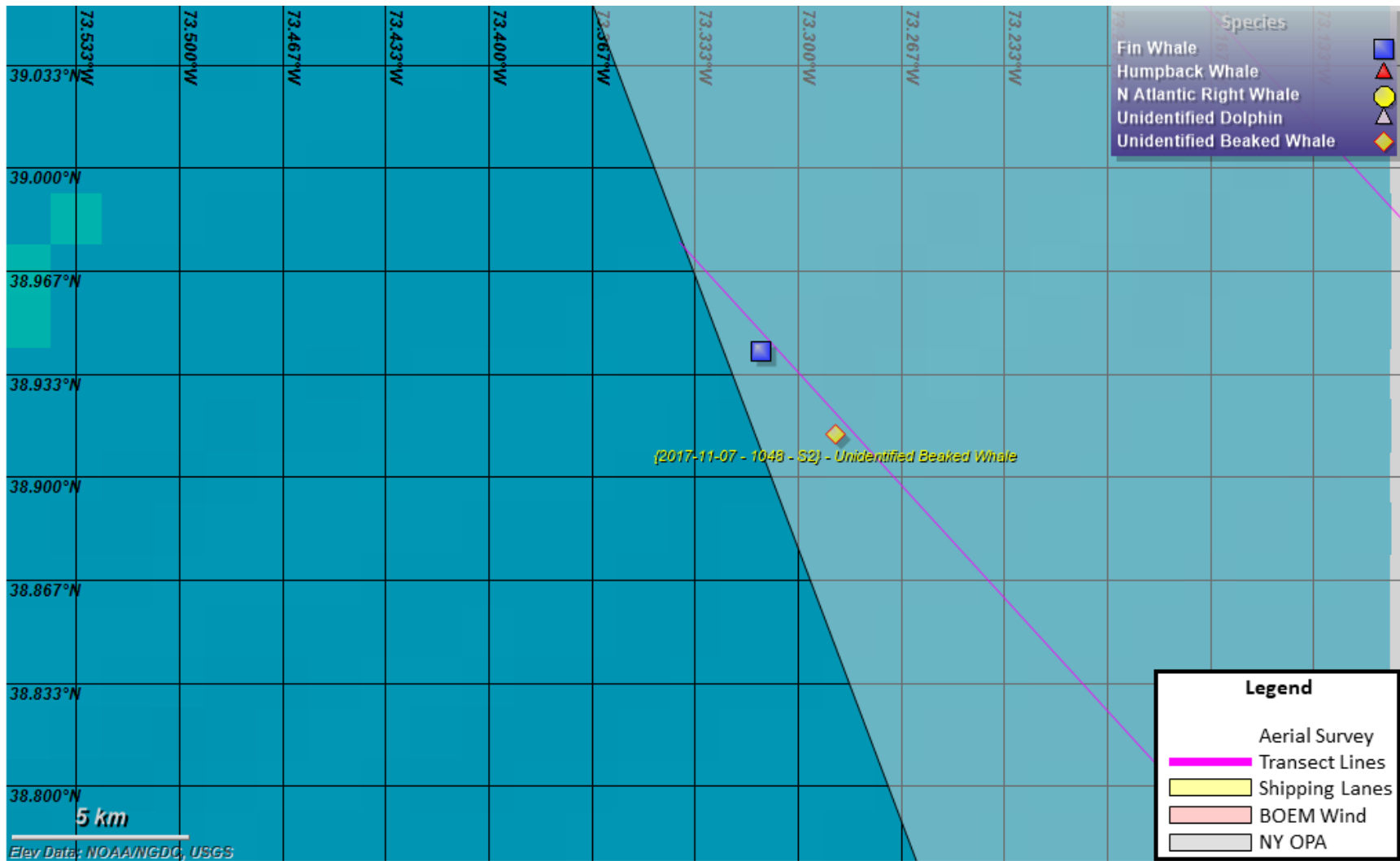


Figure 4. Zoomed in section of Figure 3 to show locations of fin whale and unidentified beaked whale

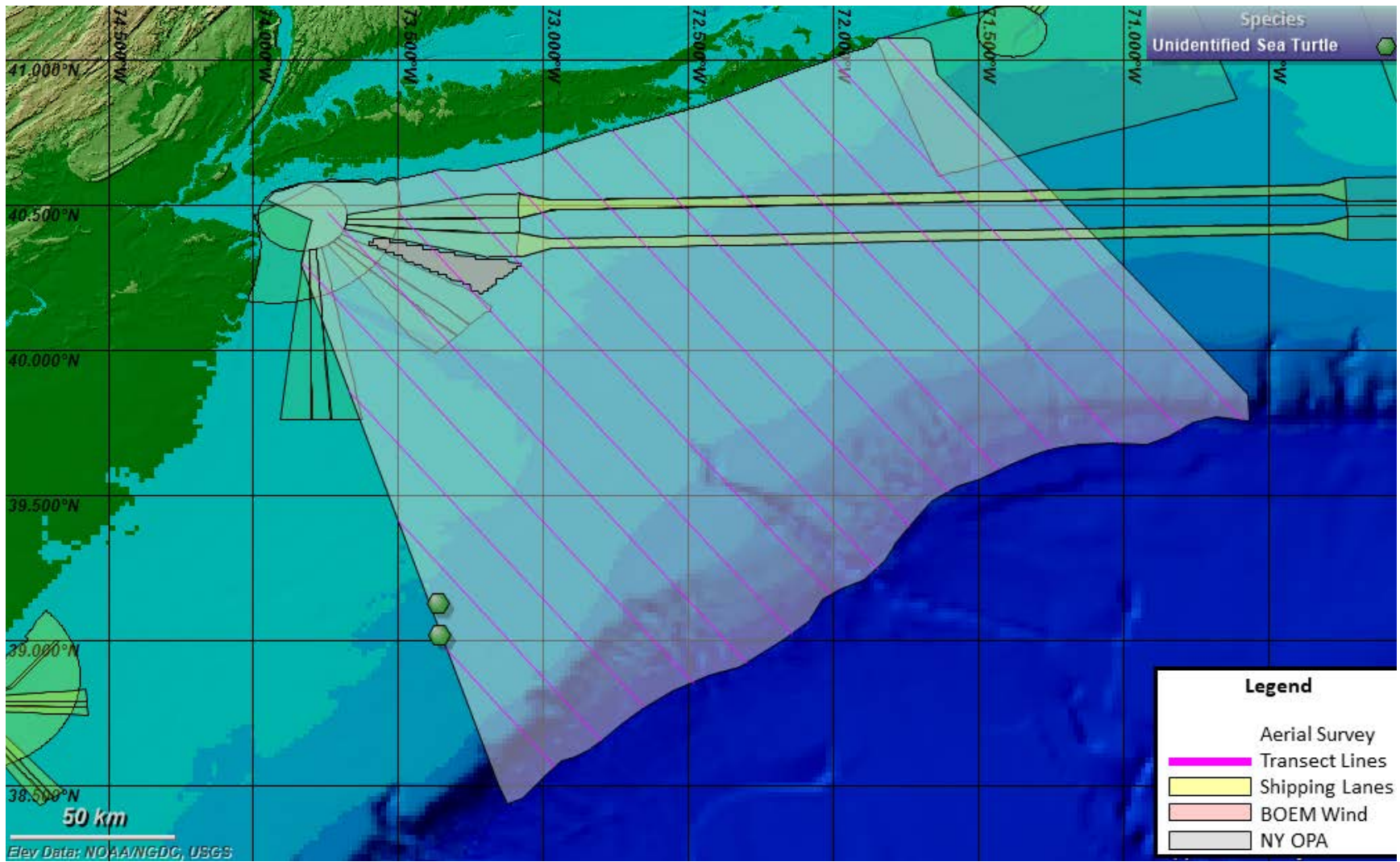


Figure 5. Locations of All Sea Turtles Sighted During the November 2017 Survey

3.2 OTHER MARINE MAMMAL SIGHTINGS

A minimum total of four sightings of an estimated 39 individual marine mammals other than the six priority whale species were observed (Table 3). This included one single unidentified beaked whale and three groups (estimated 38 individuals) 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 NOVEMBER 2017 SURVEY*

Common Name**	Scientific Name	Number of Groups	Total Number of Individuals	Mean Group Size (SE)
Bottlenose Dolphin	<i>Tursiops truncatus</i>	0	0	0
Common Dolphin	<i>Delphinus delphis</i>	0	0	0
Pilot whale	<i>Globicephala</i> sp.	0	0	0
Risso's Dolphin	<i>Grampus griseus</i>	0	0	0
Unidentified Beaked Whale		1	1	1 (NA)
Unidentified Dolphin		3	38	12.7 (8.7)
Total		4	39	

Notes:

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

**Listed in alphabetical order

NA = not applicable; SE = Standard error

3.3 SEA TURTLE SIGHTINGS

There were two individual sea turtle sightings during this survey. The sea turtle sightings were not identified to species.

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. 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 one (single individual) unidentified shark sighting

4.0 PROBLEMS ENCOUNTERED

On November 12, during the last flight, the plane experienced mechanical malfunctions due to apparent issues with the batteries or alternator. The decision was made by the pilots and observation team to abort the remaining lines (the offshore ~ 50 km of lines 8 and 9) and return to Monmouth Airport for safety purposes. The plane landed at Monmouth for mechanical inspection. The plane will undergo an annual inspection and necessary repairs in preparation for the December 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 6. North Atlantic right whale, photo credit: Kate Lomac-MacNair (Smultea Environmental Sciences)



Figure 7. North Atlantic right whale, photo credit: Kate Lomac-MacNair (Smultea Environmental Sciences)