

September 2018 Survey Report for New York Bight Whale Monitoring Aerial Surveys

Contract No. C009926

September 2018

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



This report contains preliminary data. Information may change. Do not cite without permission from New York State Department of Environmental Conservation.

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS	ii
1.0 INTRODUCTION	1
2.0 EFFORT.....	1
3.0 SIGHTINGS	3
3.1 PRIORITY LARGE WHALE SIGHTINGS.....	3
3.2 OTHER MARINE MAMMAL SIGHTINGS.....	6
3.3 SEA TURTLE SIGHTINGS.....	7
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	9

FIGURES

Figure 1. Survey Lines Flown by Effort Type During the September 2018 Survey	2
Figure 2. Locations of All Groups of Priority Large Whales Sighted During the September 2018 Survey	4
Figure 3. Locations of All Groups of Marine Mammals Sighted During the September 2018 Survey	5
Figure 4. Locations of All Sea Turtles Sighted During the September 2018 Survey.....	7
Figure 5. Humpback whale (<i>Megaptera novaeangliae</i>) mother and calf pair September 15, 2018.....	9
Figure 6. Humpback whale calf (<i>Megaptera novaeangliae</i>) September 15, 2018.....	10
Figure 7. Humpback whale (<i>Megaptera novaeangliae</i>) September 16, 2018.....	11

TABLES

Table 1. Flight Time and Distance by Effort Type During The September 2018 Survey	1
Table 2. Number of Priority Large Whale Species Sighted During the September 2018 Survey ...	3
Table 3. Other Marine Mammal Sightings During the September 2018 Survey.....	6
Table 4. Sea Turtle Sightings During the September 2018 Survey	7

ACRONYMS AND ABBREVIATIONS

hr	hour
km	kilometer
min	minutes
NEFSC	Northeast Fisheries and Science Center
NOAA	National Oceanographic and Atmospheric Administration
NYDEC	New York State Department of Environmental Conservation
SE	Standard Error
spp.	species

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 2018 survey, representing the 19th of the 36 surveys scheduled to occur under this contract.

2.0 EFFORT

The September 2018 survey occurred from September 9-17, 2018. A total of six flights were conducted, representing a total of 16.1 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 3,186.4 kilometers (km) were flown and included completion of 13 of the 15 transect lines. Due to hurricane conditions, flights were only possible on 3 of the 9 days: September 9, 15, and 16. No flights were conducted September 10, 11, 12, 13, 14 and 17 due to inclement weather.. [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 SEPTEMBER 2018 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 9-16, 2018	1.0	186.0	2.9	660.3	11.1	2,183.5	0.5	89.7	0.6	111.9	16.1	3,186.4

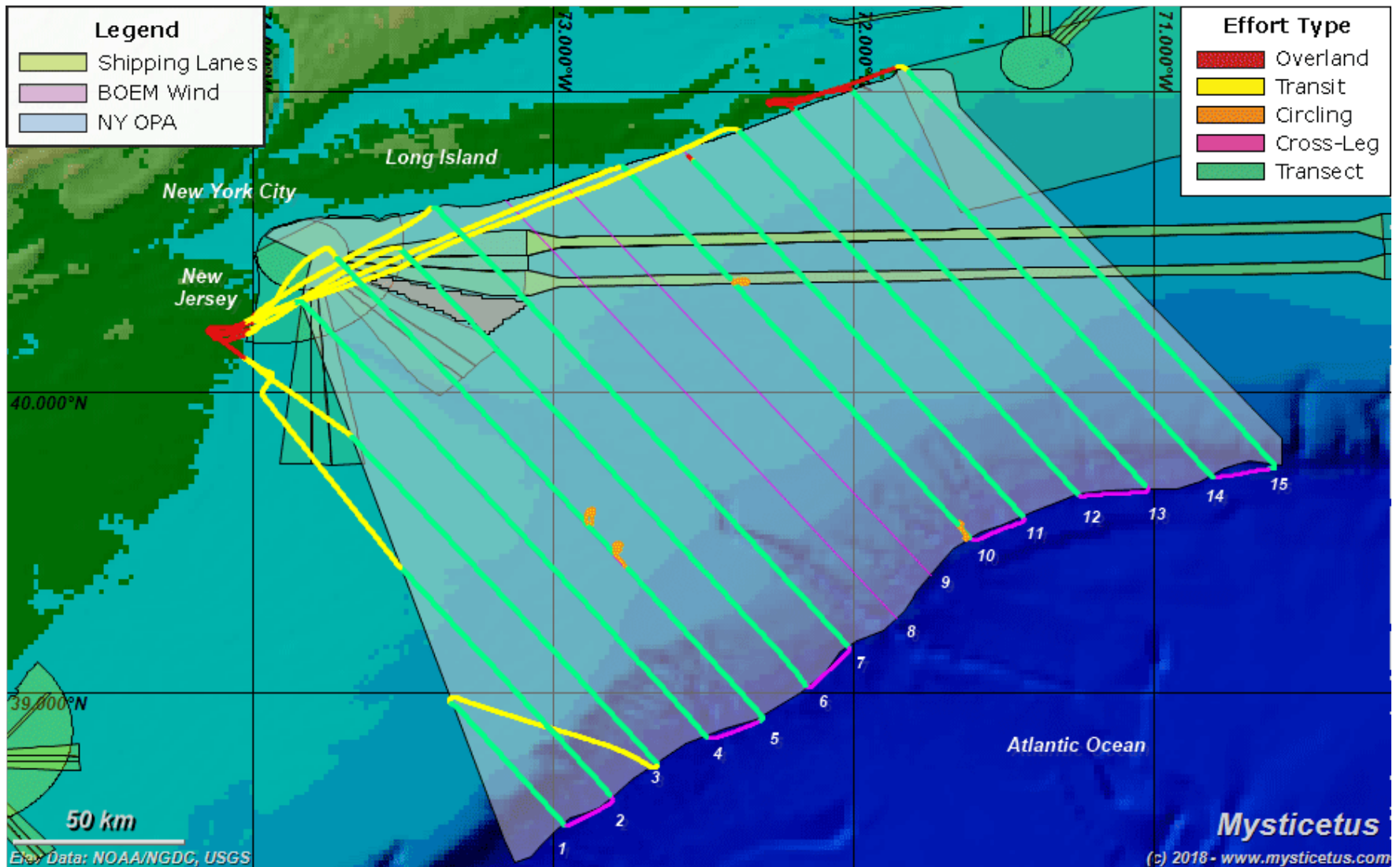


Figure 1. Survey Lines Flown by Effort Type During the September 2018 Survey

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 sightings.

3.1 PRIORITY LARGE WHALE SIGHTINGS

A total of 7 sightings (i.e. groups) of an estimated 25 individual large whales were seen ([Table 2](#)). Three groups (estimated 3 total individuals) of fin whales (*Balaenoptera physalus*) and 4 groups (estimated 22 total individuals) of humpback whales (*Megaptera novaeangliae*) were observed.

TABLE 2. NUMBER OF PRIORITY LARGE WHALE SPECIES SIGHTED DURING THE SEPTEMBER 2018 SURVEY

Common Name*	Scientific Name	Number of Groups	Total Number of Individuals	Mean Group Size (SE)
Fin Whale	<i>Balaenoptera physalus</i>	3	3	1.0 (0)
Humpback Whale	<i>Megaptera novaeangliae</i>	4	22	5.5 (2.96)
Total		7	25	

Notes:

*Listed in alphabetical order

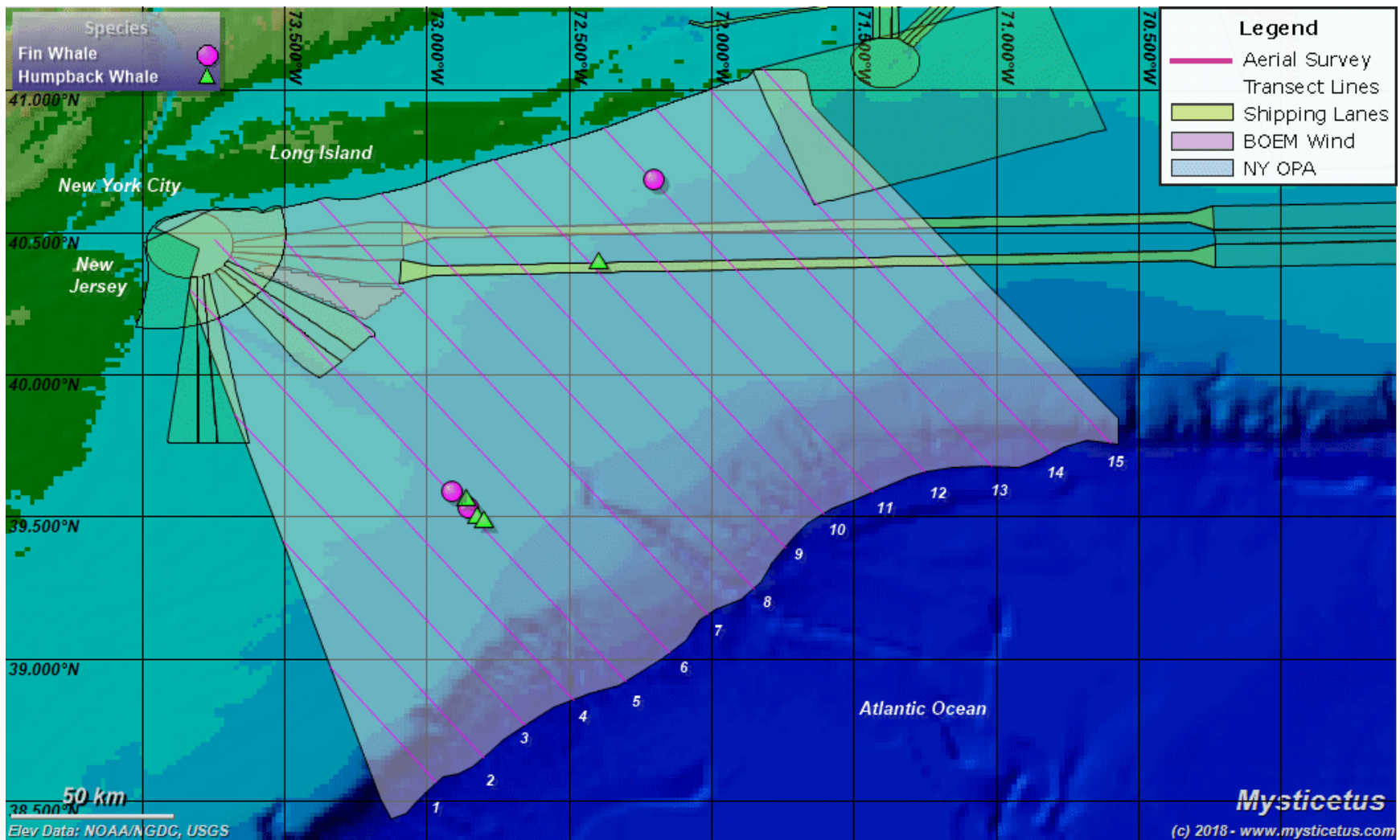


Figure 2. Locations of All Groups of Priority Large Whales Sighted During the September 2018 Survey

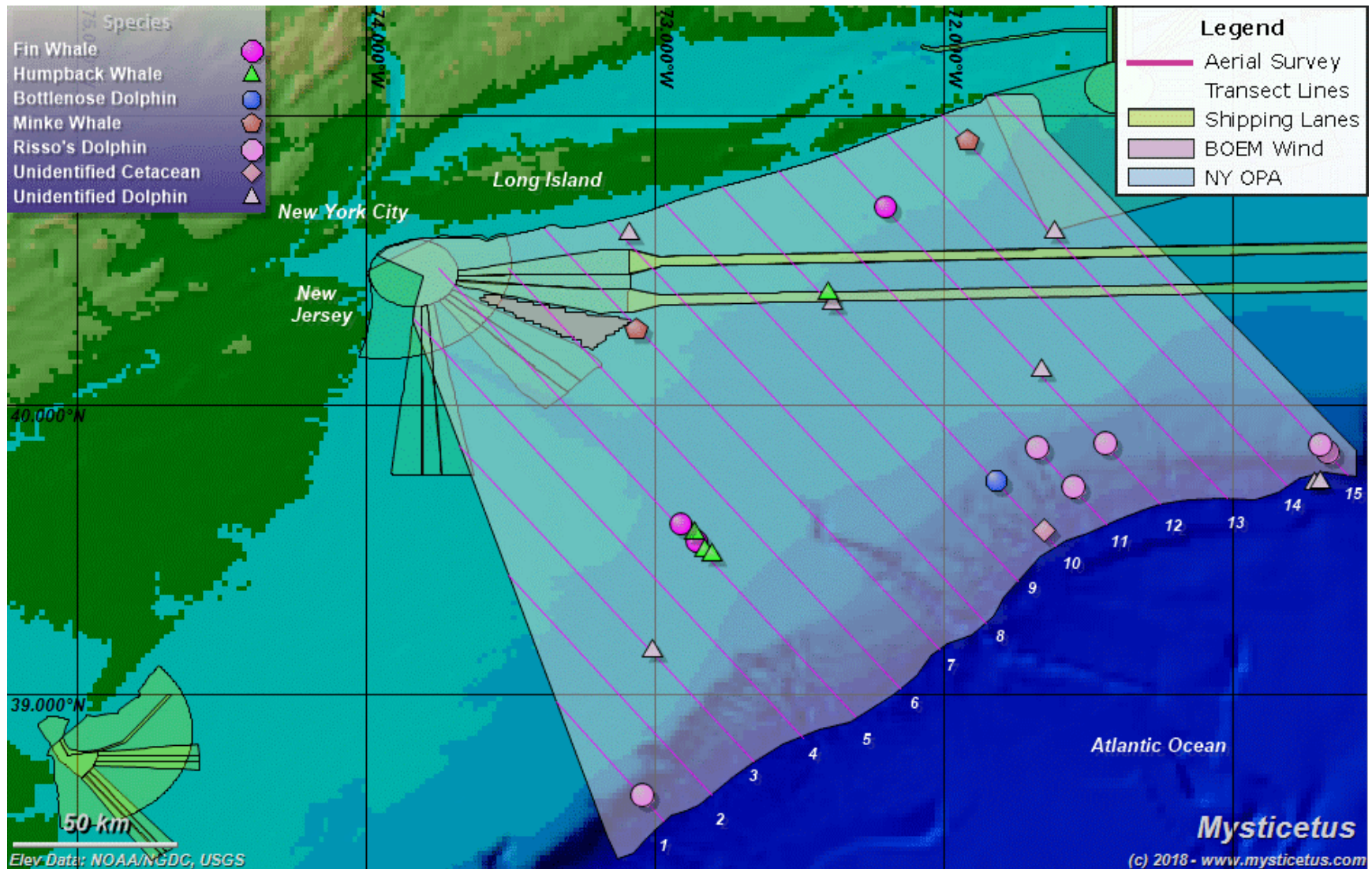


Figure 3. Locations of All Groups of Marine Mammals Sighted During the September 2018 Survey

3.2 OTHER MARINE MAMMAL SIGHTINGS

A minimum total of 17 sightings of an estimated 323 individual marine mammals other than the six priority whale species were observed (Table 3). This included 1 group (estimated total 5 individuals) of bottlenose dolphin (*Tursiops truncatus*), 2 groups (estimated 2 individuals) of minke whales (*Balaenoptera acutorostrata*), 6 groups (estimated 71 individuals) of Risso's dolphins (*Grampus griseus*), 1 group (estimated 1 individual) of unidentified cetacean, and 7 groups (estimated total 244 individuals) of unidentified dolphins. In accordance with the project scope of work, the aircraft is required to circle only to photo-identify North Atlantic right whales and to identify species and/or confirm group size/composition of large whales, as possible.

TABLE 3. OTHER MARINE MAMMAL SIGHTINGS DURING THE SEPTEMBER 2018 SURVEY*

Common Name**	Scientific Name	Number of Groups	Total Number of Individuals	Mean Group Size (SE)
Bottlenose Dolphin	<i>Tursiops truncatus</i>	1	5	5 (NA)
Minke Whale	<i>Balaenoptera acutorostrata</i>	2	2	1 (0)
Risso's Dolphin	<i>Grampus griseus</i>	6	71	11.8 (3.15)
Unidentified Cetacean		1	1	1 (NA)
Unidentified Dolphin		7	244	34.9 (11.49)
Total		17	323	

Notes:

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

**Listed in alphabetical order

NA = not applicable; SE = standard error

3.3 SEA TURTLE SIGHTINGS

A minimum total of 13 sightings of an estimated 13 individual sea turtles were observed (Table 4). This included 3 single loggerhead sea turtles, 2 single leatherback sea turtles and 8 single unidentified sea turtles.

TABLE 4. SEA TURTLE SIGHTINGS DURING THE SEPTEMBER 2018 SURVEY*

Common Name**	Scientific Name	Number of Groups	Total Number of Individuals	Mean Group Size (SE)
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	2	2	1 (0)
Loggerhead Sea Turtle	<i>Caretta caretta</i>	3	3	1 (0)
Unidentified Sea Turtle		8	8	1 (0)
Total		13	13	

Notes:

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

**Listed in alphabetical order

SE = standard error

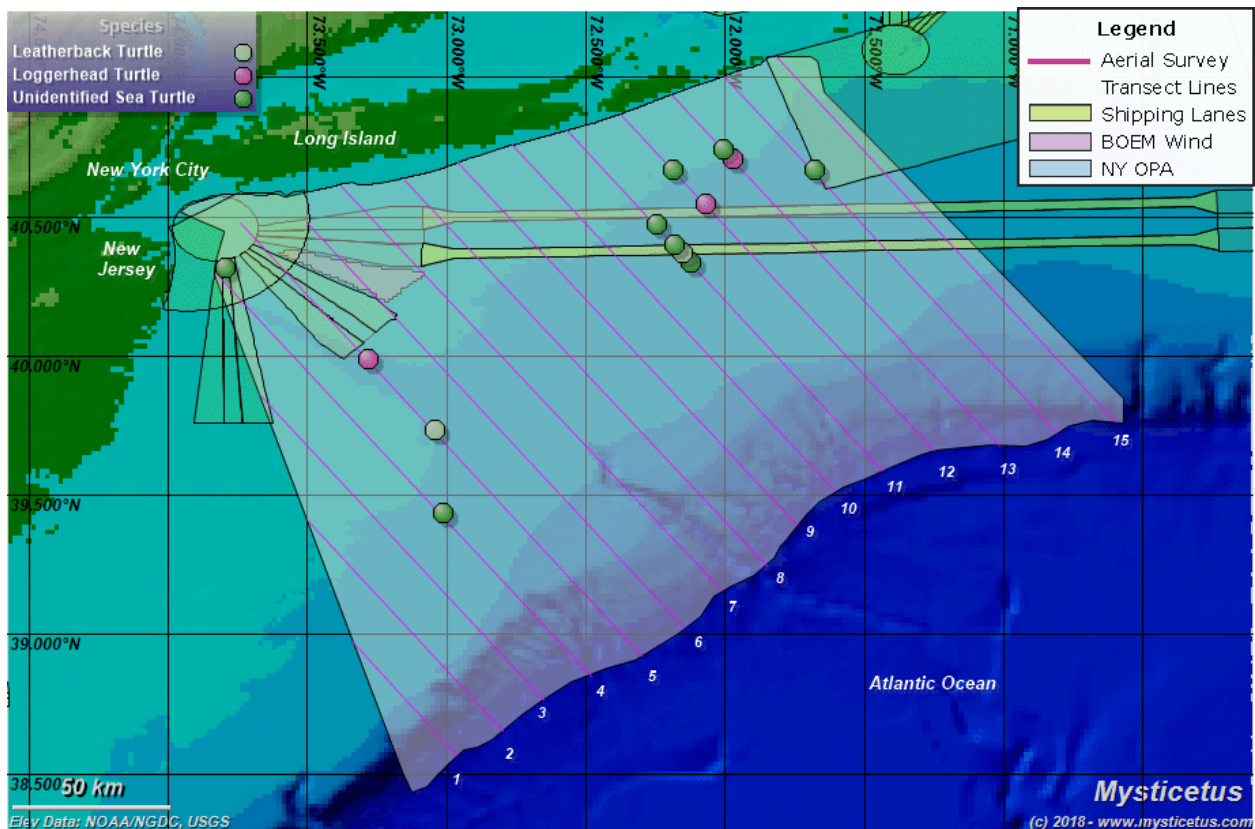


Figure 4. Locations of All Sea Turtles Sighted During the September 2018 Survey

3.4 UNUSUAL OR RARE SIGHTINGS

There were no unusual or rare sightings during the September 2018 survey.

3.5 STRANDING AND ENTANGLEMENT REPORTS

There were no strandings or entanglements during the September 2018 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. These data were recorded opportunistically as feasible, with additional details entered into voice recordings (e.g., estimated body length and coloration, behavior, and group size). Hot keys on a laptop running the software *Mysticetus* were used 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 and times were noted using the computer in the field; thus, they should be considered *minimum numbers* of sightings. Review of the voice recorder data could provide additional information regarding these sightings.

- Minimum 1,143 fish schools
- Minimum 8 groups (11 estimated individuals) of ocean sunfish (*Mola mola*)
- Minimum 2 group (2 estimated individuals) of hammerhead shark (*Sphyrnidae* spp.)
- Minimum 12 groups (14 estimated individuals) of unidentified sharks
- Minimum 2 groups (2 estimated individuals) of Atlantic manta ray (*Manta birostris*)
- Minimum 2 groups (2 estimated individuals) of unidentified rays
- Minimum 3 groups (220 estimated individuals) of small rays
- Minimum 1 group (1 estimated individual) of basking shark (*Cetorhinus maximus*)
- Minimum 2 groups (3 estimated individuals) of great white sharks (*Carcharodon carcharias*)

4.0 PROBLEMS ENCOUNTERED

There were no problems encountered during the September 2018 survey.

5.0 PHOTOGRAPHS



**Figure 5. Humpback whale (*Megaptera novaeangliae*) mother and calf pair
September 15, 2018
Photo credit: Kate Lomac-MacNair**



**Figure 6. Humpback whale calf (*Megaptera novaeangliae*) September 15, 2018
Photo credit: Kate Lomac-MacNair**



**Figure 7. Humpback whale (*Megaptera novaeangliae*) September 16, 2018
Photo credit: Mitch Poster**