

August 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 August 2017 survey, representing the sixth of the 36 surveys scheduled to occur under this contract.

2.0 EFFORT

The August 2017 survey occurred from August 25 – 27, 2017. A total of seven flights were conducted, representing a total of 21.37 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 4,223 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 AUGUST 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
August 25 – 27, 2017	1.35	281	4.46	975	13.18	2,518	1.38	250	1.0	199	21.37	4,223

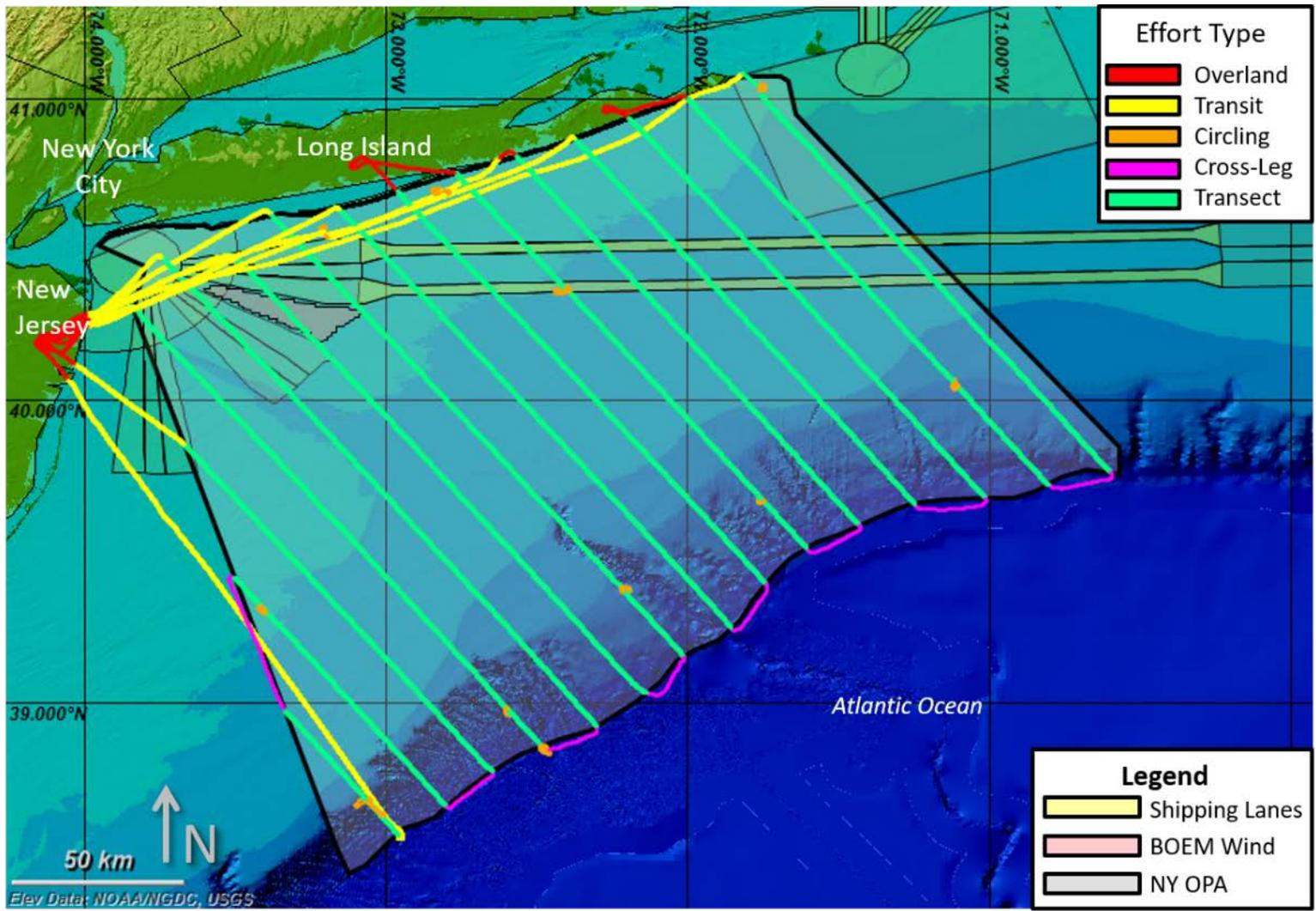


Figure 1. Survey Lines Flown by Effort Type During the August 2017 Survey

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 eight sightings of an estimated nine individual large whales were seen ([Table 2](#)). Seven of the nine sightings were identified to species. The most frequently seen whale was the humpback whale, followed by two sightings of fin whales and one sighting of a minke whale.

There was one large whale sighting that was not identified to species. The animals was 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 AUGUST 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>	2	2	1.0 (0)
Humpback Whale	<i>Megaptera novaeangliae</i>	4	5	1.3 (0.25)
North Atlantic Right Whale	<i>Eubalaena glacialis</i>	0	0	0
Minke Whale	<i>B. acutorostrata</i>	1	1	1.0 (N/A)
Sei Whale	<i>B. borealis</i>	0	0	0
Sperm Whale	<i>Physeter macrocephalus</i>	0	0	0
Unidentified Baleen Large Whale		1	1	1.0 (N/A)
Total		8	9	

Notes:

*Listed in alphabetical order

SE = Standard error

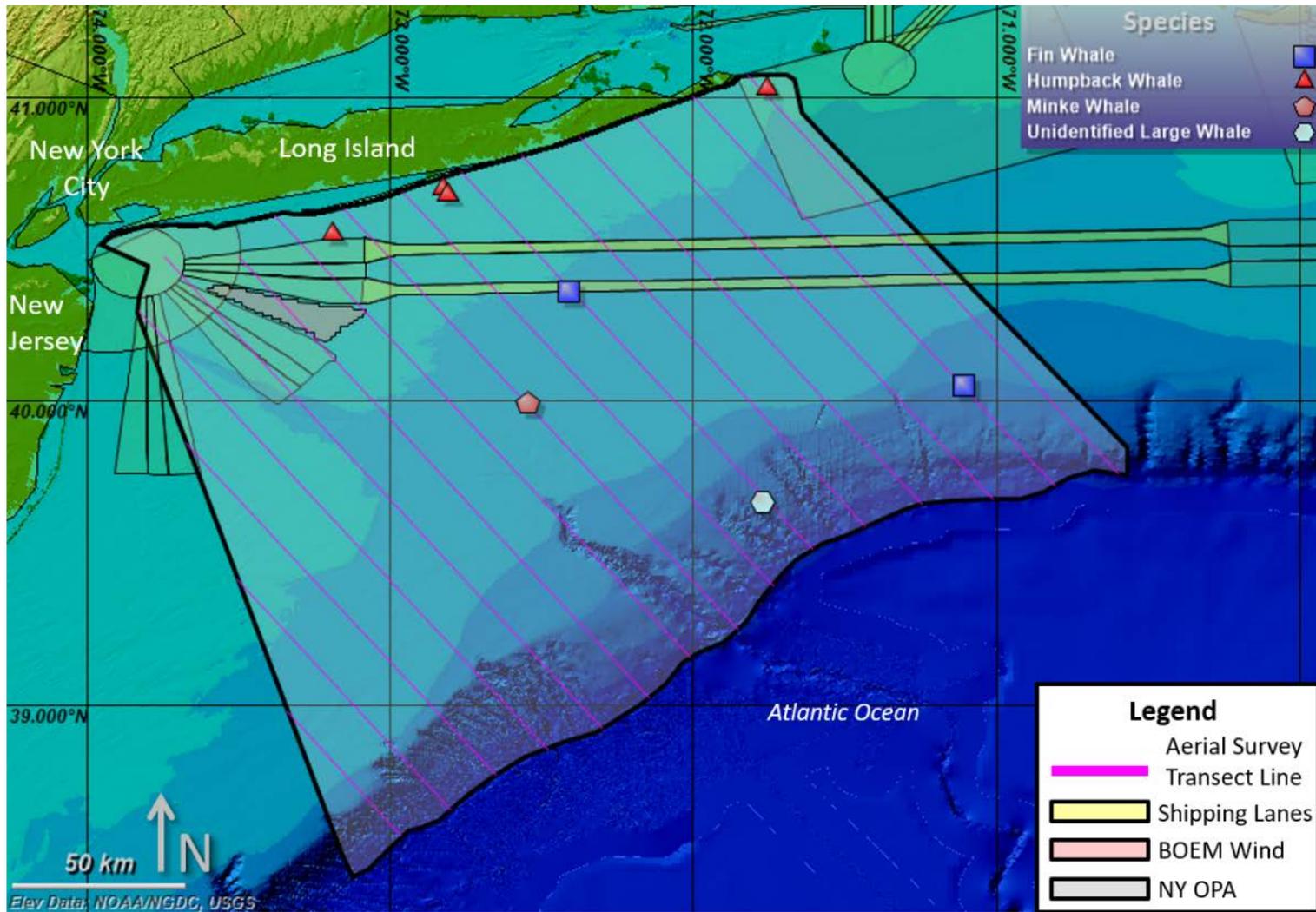


Figure 2. Locations of All Groups of Large Whales Sighted During the August 2017 Survey

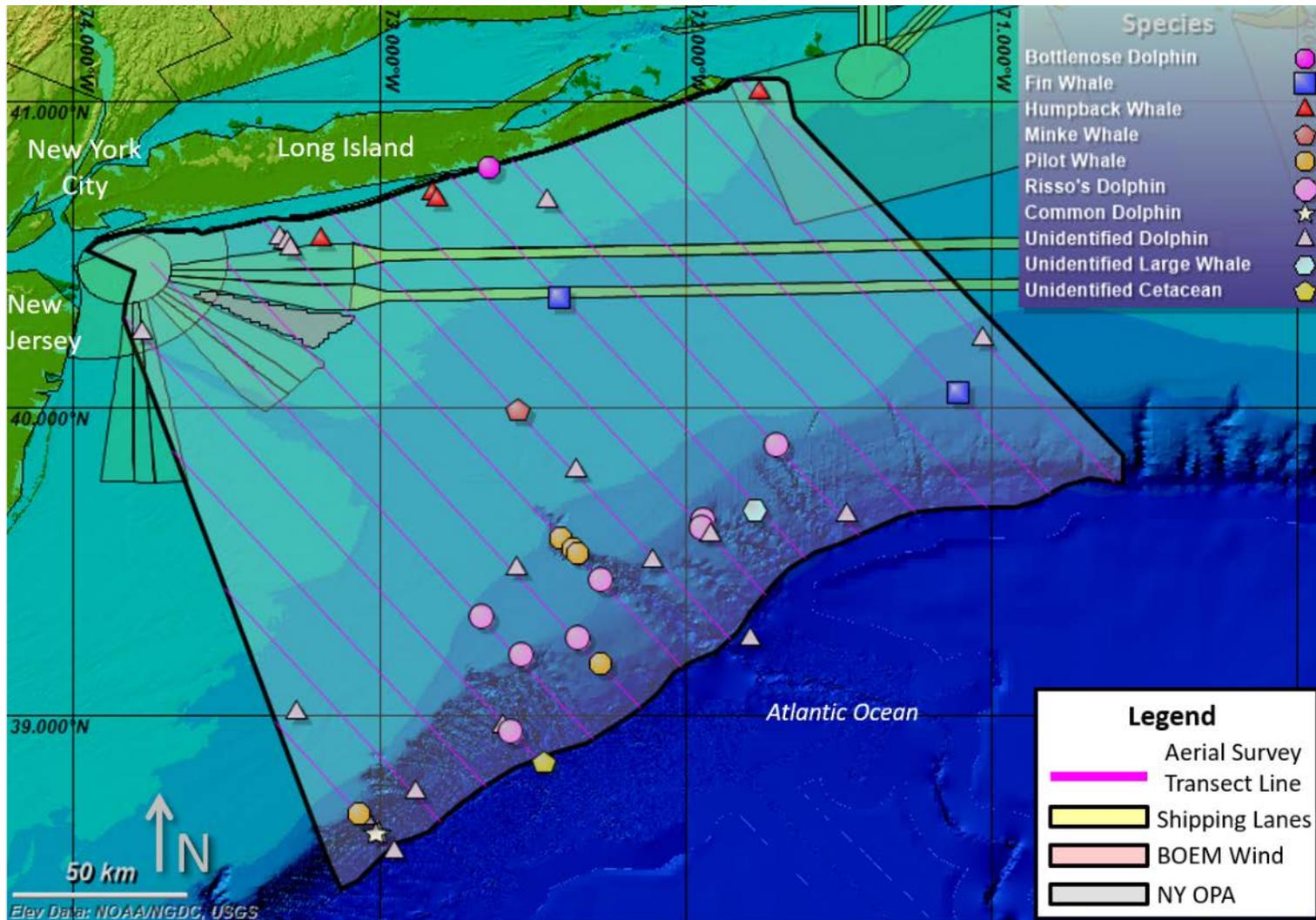


Figure 3. Locations of All Groups of Marine Mammals Sighted During the August 2017 Survey

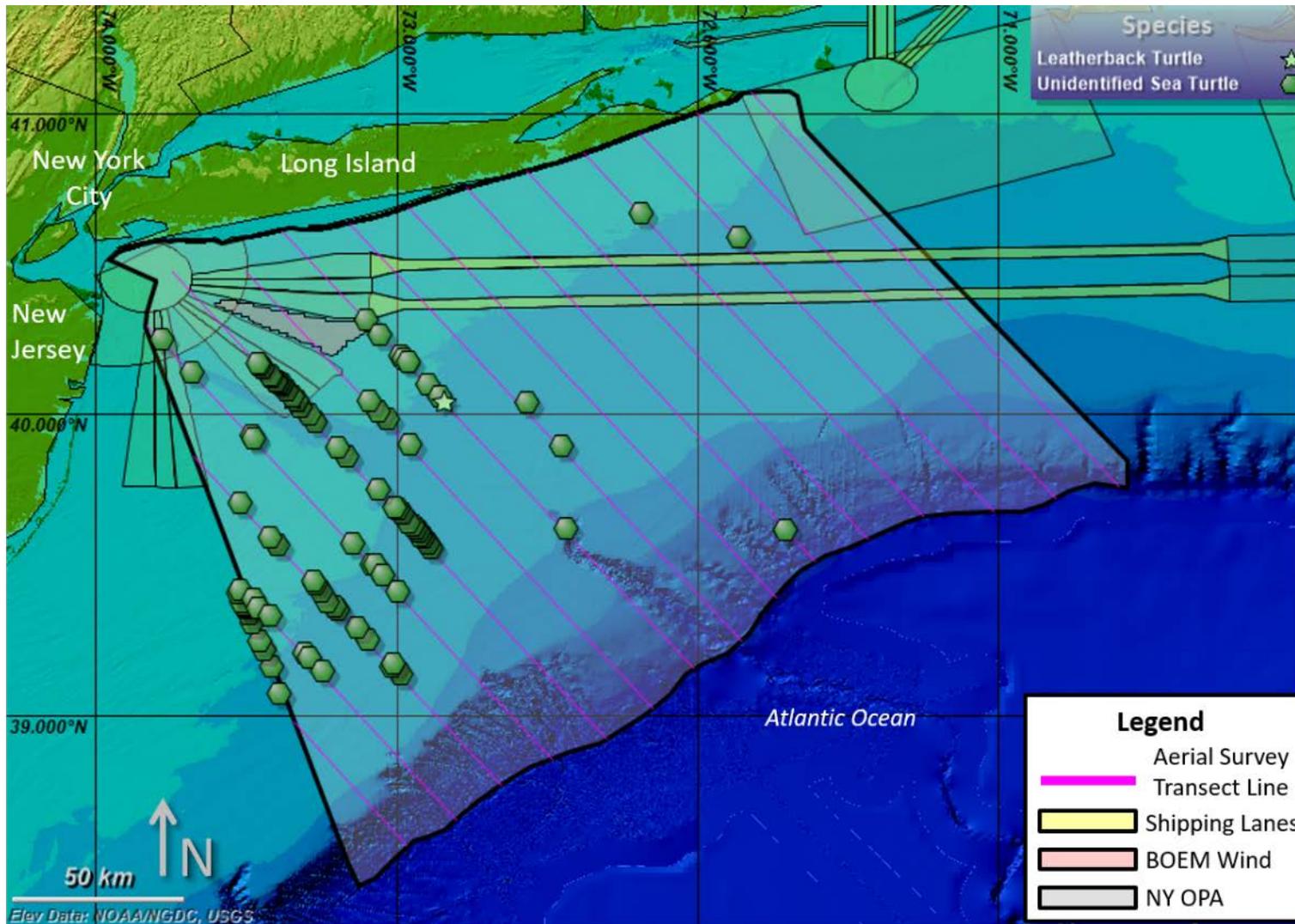


Figure 4. Locations of All Sea Turtles Sighted During the August 2017 Survey

3.2 OTHER MARINE MAMMAL SIGHTINGS

A minimum total of 35 sightings of an estimated 920 individual other marine mammals were observed (Table 3). Of these sightings, 16 groups totaling 347 individuals were identified to species. The remaining 19 sightings (573 individuals) were of unidentified dolphins and unidentified cetacea (note, in accordance with the project scope of work, dolphins were not circled to confirm species).

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

Common Name*	Scientific Name	Number of Groups	Total Number of Individuals	Mean Group Size (SE)
Bottlenose Dolphin	<i>Tursiops truncatus</i>	1	5	5.0 (N/A)
Common Dolphin	<i>Delphinus delphis</i>	2	15	7.5 (0.5)
Pilot whale	<i>Globicephala</i> sp..	5	196	39.2 (18.5)
Risso's Dolphin	<i>Grampus griseus</i>	8	131	16.4 (5.9)
Unidentified Dolphin		18	572	31.8 (8.6)
Unidentified Cetacean		1	1	1.0 (N/A)
Total		35	920	

Notes:

*Listed in alphabetical order

SE = Standard error

3.3 SEA TURTLE SIGHTINGS

There were 89 sea turtle sightings during this survey. One was identified as a leatherback sea turtle. The remaining sightings were not identified to species.

3.4 UNUSUAL OR RARE SIGHTINGS

Unusual or rare sightings included five groups (196 estimated individuals) of pilot whales (*Globicephala* sp.; 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 7 (7 estimated individuals) hammerhead shark (*Sphyrna* sp.) sightings
- Minimum 2 (2 estimated individuals) basking shark (*Cetorhinus maximus*) sightings
- Minimum 6 (6 estimated individuals) unidentified shark sightings
- Minimum 10 (11 estimated individuals) sunfish (*Mola mola*) sightings
- Minimum 13 (3,142 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. Fin whale, photo credit: Kate Lomac-MacNair (Smultea Environmental Sciences)



Figure 6. Humpback whale, photo credit: Kate Lomac-MacNair (Smultea Environmental Sciences)



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



Figure 8. Humpback whale breach sequence, photo credit: Kate Lomac-MacNair (Smultea Environmental Sciences)