

August 2018 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
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 August 2018 survey, representing the 18th of the 36 surveys scheduled to occur under this contract.

2.0 EFFORT

The August 2018 survey occurred from August 6-8, 2018. A total of seven flights were conducted, representing a total of 21.2 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 4,185.8 kilometers (km) were flown and included completion of 100 percent of the 15 transect lines. [Table 1](#) presents the flight time durations and distances by effort type. [Figure 1](#) shows the survey lines completed.

TABLE 1. FLIGHT TIME AND DISTANCE BY EFFORT TYPE DURING THE AUGUST 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
August 6-8, 2018	1.6	279.6	4.3	959.6	13.1	2,526.1	1.7	323.0	0.5	97.5	21.2	4,185.8

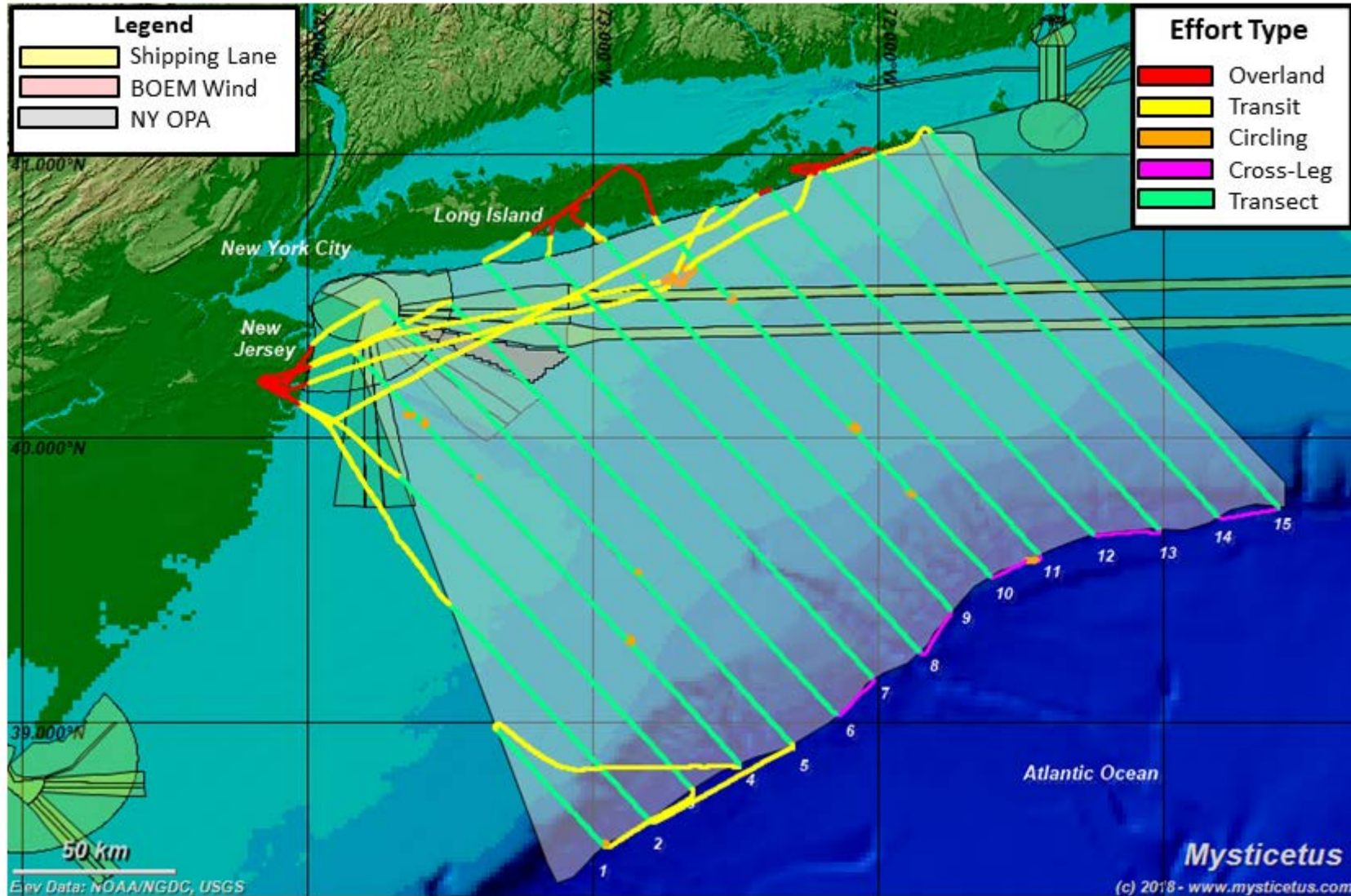


Figure 1. Survey Lines Flown by Effort Type During the August 2018 Survey

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 sea turtle sighting locations.

3.1 PRIORITY LARGE WHALE SIGHTINGS

A total of 28 sightings (i.e., groups) of an estimated 52 individual large whales were seen ([Table 2](#)). Fourteen groups (estimated 23 total individuals) of fin whales (*Balaenoptera physalus*) including one calf, 10 groups (estimated 17 total individuals) of humpback whales (*Megaptera novaeangliae*), 3 groups (estimated 11 total individuals) of sperm whales (*Physeter macrocephalus*) including one juvenile and one calf, and one unidentified large whale.

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

Common Name*	Scientific Name	Number of Groups	Total Number of Individuals	Mean Group Size (SE)
Fin Whale	<i>Balaenoptera physalus</i>	14	23	1.6 (0.23)
Humpback Whale	<i>Megaptera novaeangliae</i>	10	17	1.4 (0.52)
Sperm Whale	<i>Physeter macrocephalus</i>	3	11	3.7 (1.76)
Unidentified Large Whale		1	1	1 (NA)
Total		28	52	

Notes:

*Listed in alphabetical order

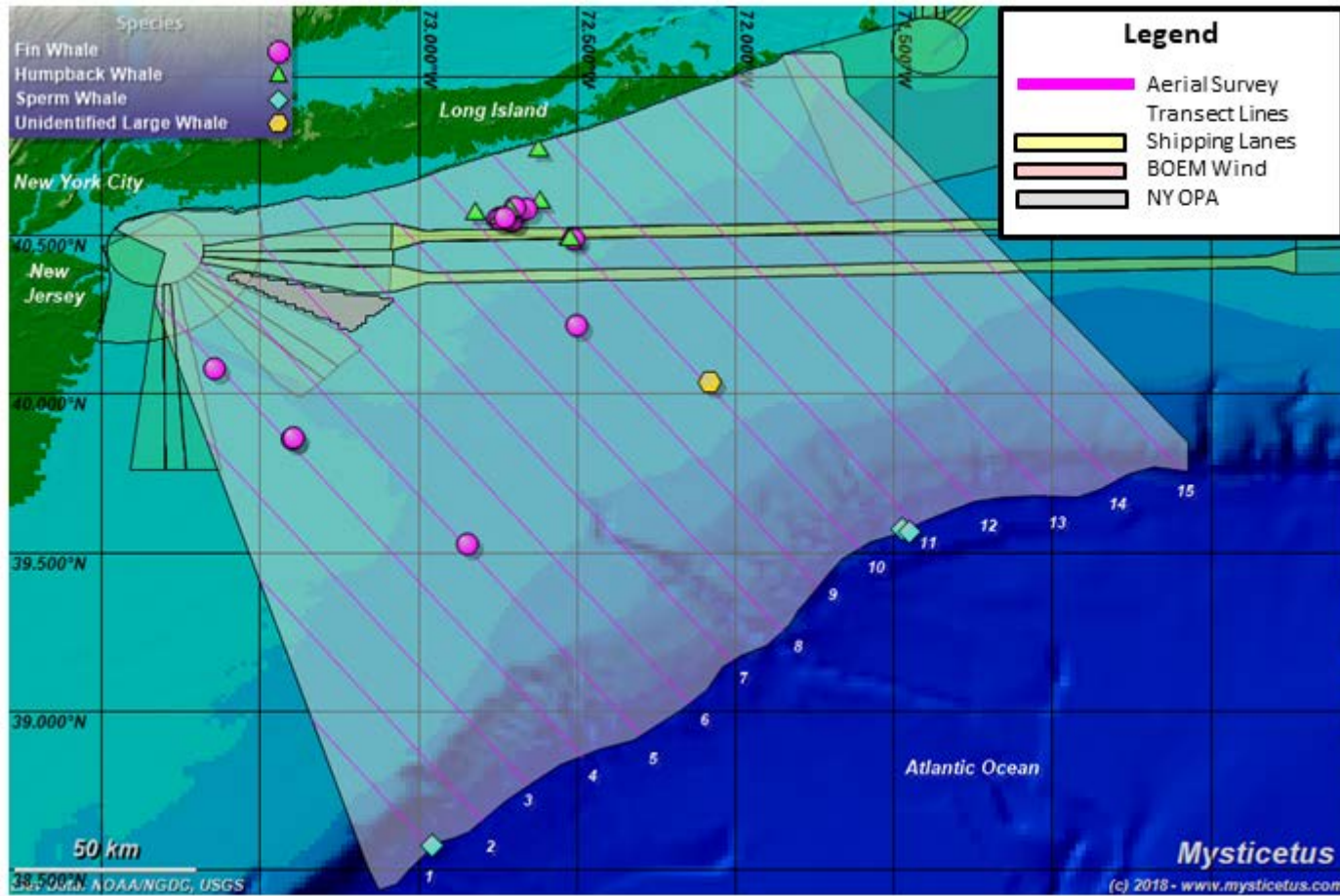


Figure 2. Locations of All Groups of Large Whales Sighted During the August 2018 Survey

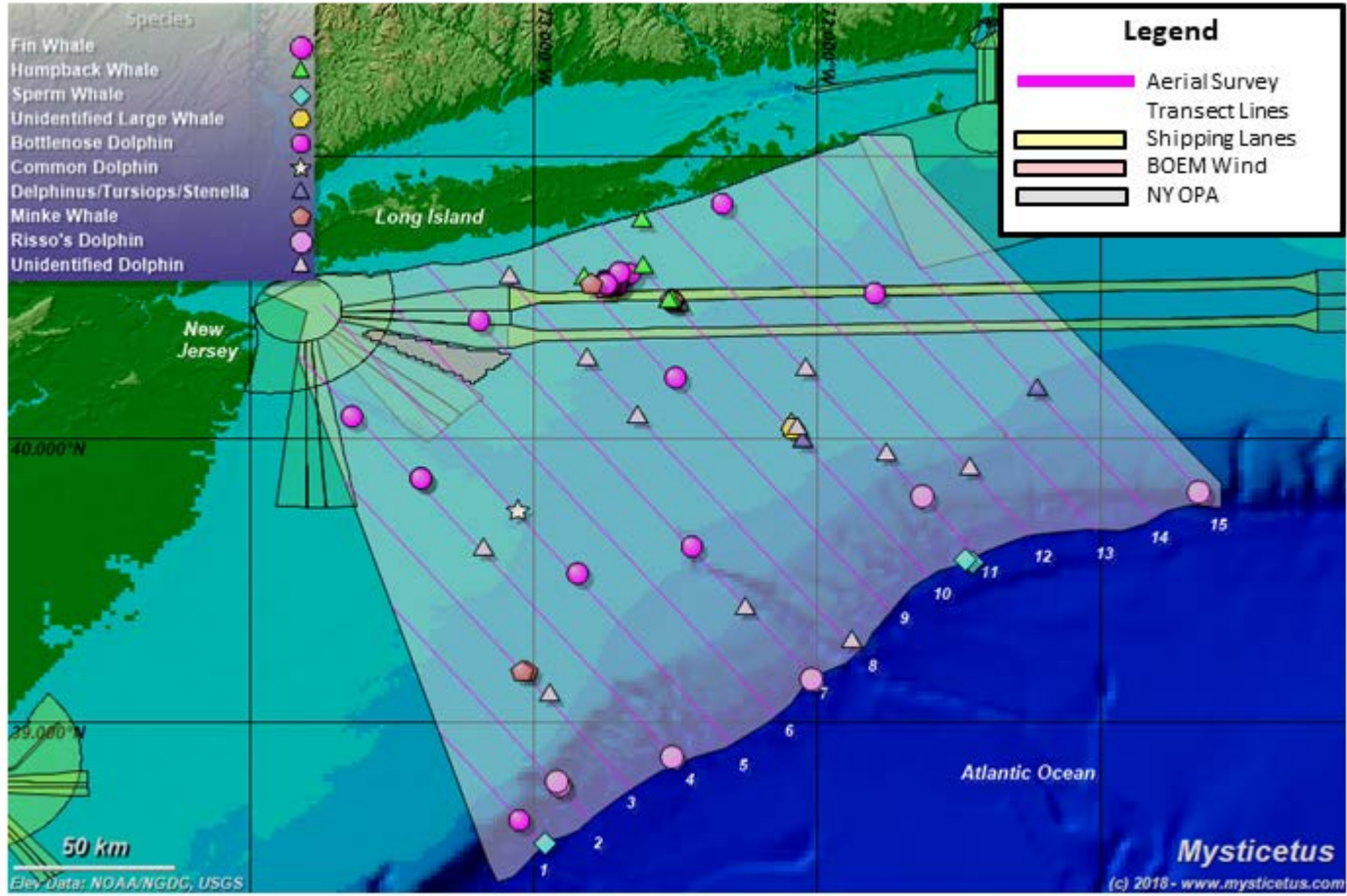


Figure 3. Locations of All Groups of Marine Mammals Sighted During the August 2018 Survey

3.2 OTHER MARINE MAMMAL SIGHTINGS

A minimum total of 38 sightings of an estimated 728 individual marine mammals other than the six priority whale species were observed (Table 3). This included 5 groups (estimated 102 total individuals) of bottlenose dolphin (*Tursiops truncatus*), 1 group (estimated 20 total individuals) of common dolphin (*Delphinus delphis*), 4 groups (estimated 100 total individuals) of Delphinus/Tursiops/Stenella spp., 8 groups (estimated 9 total individuals) of minke whales (*Balaenoptera acutorostrata*), 6 groups (estimated 40 total individuals) of Risso's dolphins (*Grampus griseus*), and 14 groups (estimated 457 total 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 AUGUST 2018 SURVEY*

Common Name**	Scientific Name	Number of Groups	Total Number of Individuals	Mean Group Size (SE)
Bottlenose Dolphin	<i>Tursiops truncatus</i>	5	102	20.4 (8.73)
Common Dolphin	<i>Delphinus delphis</i>	1	20	20.0 (NA)
Delphinus/Tursiops/Stenella		4	100	25.0 (4.56)
Minke Whale	<i>Balaenoptera acutorostrata</i>	8	9	1.1 (0.13)
Risso's Dolphin	<i>Grampus griseus</i>	6	40	6.7 (2.87)
Unidentified Dolphin		14	457	32.6 (6.96)
Total		38	728	

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 36 sightings of an estimated 42 individual sea turtles were observed (Table 4). This included a single Kemp’s Ridley sea turtle (*Lepidochelys kempii*), 7 single leatherback sea turtles (*Dermochelys coriacea*), and 28 groups (estimated 34 total individuals) of unidentified sea turtles.

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

Common Name**	Scientific Name	Number of Groups	Total Number of Individuals	Mean Group Size (SE)
Kemp’s Ridley Sea Turtle	<i>Lepidochelys kempii</i>	1	1	1 (NA)
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	7	7	1 (NA)
Unidentified Sea Turtle		28	34	1.2 (0.15)
Total		36	42	

Notes:

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

**Listed in alphabetical order

SE = standard error

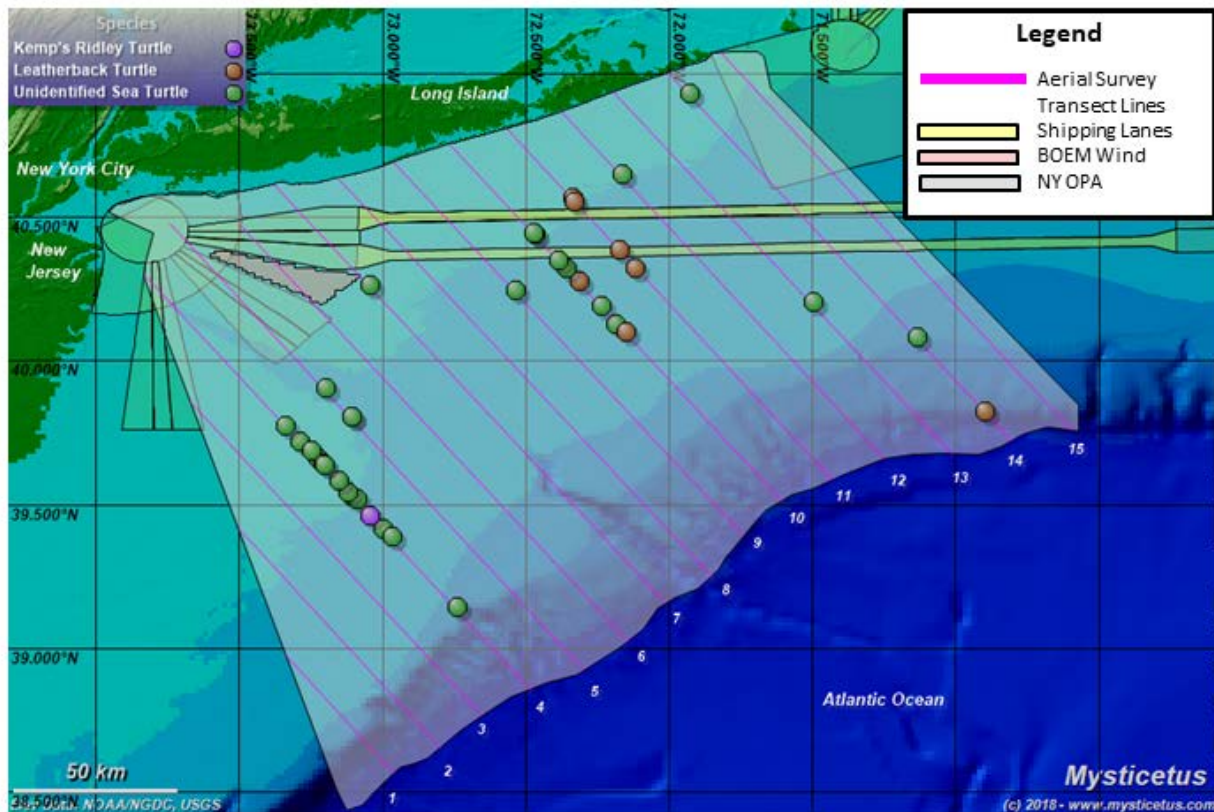


Figure 4. Locations of All Sea Turtles Sighted During the August 2018 Survey

3.4 UNUSUAL OR RARE SIGHTINGS

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

3.5 STRANDING AND ENTANGLEMENT REPORTS

There were no strandings or entanglements during the August 2018 survey. Prior to the survey start we received a report of an entangled humpback whale that had been sighted in the area and was being tracked. Our observer team kept a look out for this animal throughout the survey. It was not sighted on the first day. That evening we received the updated coordinated and on day 2 we circled over line 8 for an additional 20 minutes which was the last known location of the animal in an attempt to sight it and to support the disentanglement response effort that was underway. Our team participated in the potential disentanglement response planning and was prepared to stay to support the disentanglement response planned for August 9th. However the plan was aborted due to weather and our team demobilized as originally planned.

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 702 fish schools
- Minimum 12 groups (12 estimated individuals) of ocean sunfish (*Mola mola*)
- Minimum 1 group (1 estimated individual) of hammerhead shark (*Sphyrnidae* spp.)
- Minimum 7 groups (16 estimated individuals) of unidentified sharks
- Minimum 3 groups (5 estimated individuals) of Atlantic manta ray (*Manta birostris*)
- Minimum 1 group (500 estimated individuals) of unidentified rays

4.0 PROBLEMS ENCOUNTERED

There were no problems encountered during the August 2018 survey.

5.0 PHOTOGRAPHS



Figure 5. Three sperm whales (*Physeter macrocephalus*) August 6, 2018
Photo credit: Mari Smultea (Smultea Environmental Sciences)



Figure 6. Adult fin whale and calf/juvenile (*Balaenoptera physalus*) August 8, 2018
Photo credit: Mari Smultea (Smultea Environmental Sciences)



Figure 7. Seven sperm whales including one juvenile and calf/juvenile (*Physeter macrocephalus*) August 8, 2018

Photo credit: Mari Smultea (Smultea Environmental Sciences). Bottlenose dolphins were also seen near and approaching this sperm whale group.