Seabird Survey Report

23 May -5 June 2018

Integrated Statistics, Northeast Fisheries Science Center Contractor

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Objective:

The primary goal of conducting seabird surveys aboard the Henry Bigelow in May/June 2018 was to gather data on the abundance and distribution of seabirds as a part of longer term monitoring efforts for these far-ranging apex predators. Our secondary objective in conducting theses surveys was to also collect data, when possible, on the abundance and distribution of other marine megafauna including, marine mammals, sea turtles, sharks, and other large pelagic fishes.

Collecting this data in conjunction with other biological data and abiotic factors will help better complete our "picture" of possible changes occurring in the marine ecosystem in the Northwest Atlantic from the Outer Banks to the Bay of Fundy.

Methods:

The protocol used for this survey is based on a standardized 300 meter strip transect survey, one that is used by various agencies in North America and Europe (e.g., Anon 2011, Ballance 2011; Tasker 2004).

The survey strip is 300 meters wide, with observers collecting data on all seabirds within that strip, from the bow to 90 degrees to either the port or the starboard side (depending on viewing conditions). Observations can be made in seas up to a Beaufort 7, in light rain, fog, and ship speeds between 8-12 knots (below 8 knots, the data becomes questionable to use for abundance estimates).

Surveys were conducted on the flying bridge (15 m) of the Henry Bigelow.

The software used to collect survey data was, SeeBird version 4.3.7. This program draws GPS coordinates, as well as time from the ship's navigation through a NMEA data feed, so each observation received a Lat/Long, time stamp, and ship's course. Due to some

initial issues with the Ship Computer System (SCS), a GPS puck was used to replace the ship's navigation feed on the first day of surveys, until the SCS issue was fixed and a reliable feed was established on the flying bridge. The standard data collected for observations included, species, distance, number of individuals, association, behavior, flight direction, flight height, and if possible or applicable, age, sex, and plumage status. Flocks of seabirds that were once recorded in a SeeBird sub-module, have been incorporated into the regular sighting data module with species counted within a given flock being given a special notation in the comment section, marking them as part of a flock, along with an estimated distance to that flock from the transect line. On another note, while SeeBird was not specifically designed to collect data on other marine megafauna, other such observations were recorded anytime an animal was seen, both in and outside of the survey zone.

During surveys, individual observers took two-hour shifts, to prevent observer fatigue. Observers utilized binoculars (10x42 or 8x42) for general scanning purposes within the survey strip, however, if an animal proved elusive a pair of 20x60 Zeiss imaged-stabilized binoculars were used to attain positive identifications. To aide in approximating distance observers used custom made range finders based on height above water and the observers' personal body measurement (Heinemann 1981).

Results:

Seabird Sightings

Over the course of the cruise approximately 1,300 nautical miles were surveyed, from the mouth of the Delaware Bay to surveying Georges Banks and around the Gulf of Maine. A total of 2,893 birds were observed in the survey zone, within an additional 1,951 birds observed outside the zone (on and off effort). As is usual at this time of year Wilson's Storm Petrels, *Oceanites oceanicus*, out numbered all other seabirds totaling 992 individuals seen in the survey; this being followed by Sooty Shearwaters, *Ardenna grisea,* at 580 individuals seen in the survey zone. A fair number of alcid species were observed this year (compared to years past), with survey lines going very close to two breeding colonies in the Gulf of Maine, accounting for a fraction of the Atlantic Puffin, *Fratercula arctica*, Razorbill, *Alca torda*, and Black Guillemot, *Cepphus grylle*, sightinged. Of special, note was the sighting of a wayward Franklin's Gull, *Leucophaeus pipixcan*, that was a good deal East of its normal migration route. Furthermore, there were frequent sightings of South Polar Skua, *Stercorarius maccormicki*, this trip, sometimes several times in a given day depending on the area the ship was traversing.

Table 1. Total Number of Birds Observed

Common Bird Name	Scientific Name	Number Observed in Zone	Total Observed
Atlantic Puffin	*Fratercula arctica*	10	22
Black Guillemote	*Cepphus grylle*	4	5
Dovekie	*Alle alle*	6	10
Common Murre	*Uria aalge*	1	1
Razorbill	*Alca torda*	1	3
Razorbill/Murre		0	1
Common Loon	*Gavia immer*	33	80
Red-throated Loon	*Gavia stellata*	0	1
Cory's Shearwater	*Calonectris borealis*	22	32
Great Shearwater	*Puffinus gravis*	249	379
Sooty Shearwater	*Ardenna grisea*	580	1242
Manx Shearwater	*Puffinus puffinus*	13	23
Unidentified Shearwater		0	1
Wilson's Storm Petrel	*Oceanites oceanicus*	992	1430
Leach's Storm Petrel	*Oceanodroma leucorhoa*	185	148
Unidentified Storm Petrel		0	40
Unidentified Petrel		0	1
Northern Fulmar	*Fulmarus glacialis*	155	249
Arctic Tern	*Sterna paradisaea*	64	67
Common Tern	*Sterna hirundo*	123	192
Unidentified Tern		38	74
Great Black-backed Gull	*Larus marinus*	102	262
Herring Gull	*Larus argentatus*	160	362
Bonaparte's Gull	*Chroicocephalus philadelphia*	1	1
Laughing Gull	*Leucophaeus atricilla*	29	30
Franklin's Gull	*Leucophaeus pipixcan*	1	1
White-Winged Scoter	*Melanitta fusca*	5	9
Parasitic Jaeger	*Stercorarius parasiticus*	2	5
Long-tailed Jaeger	*Stercorarius longicaudus*	1	3
Unidentified Jaeger		0	1
South Polar Skua	*Stercorarius maccormicki*	23	43
Double Cresred Cormorant	*Phalacrocorax auritus*	0	20
Northern Gannet	*Morus bassanus*	36	45
Red Phalarope	*Phalaropus fulicarius*	1	1
Red-necked Phalarope	*Phalaropus lobatus*	27	28
Unidentified Phalarope		7	7
Magnolia Warbeler	*Setophaga magnolia*	2	2
Barn Swallow	*Hirundo rustica*	2	3
Cedar Waxwing	*Bombycilla cedrorum*	1	1
Red-bellied Woodpecker	*Melanerpes carolinus*	1	1
Gray Catbird	*Dumetella carolinensis*	1	1
American Goldfinch	*Spinus tristis*	1	1
American Redstart	*Setophaga ruticilla*	1	1
Cuckcoo sp	*Coccyzus sp*	1	1
Passerine		10	10
Peregrine Falcon	*Falco peregrinus*	0	1
Osprey	*Pandion haliaetus*	2	3
Total		2893	4844

Marine Mammal, Sea Turtle, and Large Fishes Sightings

The most commonly seen marine mammal, was of course, the Common Dolphin, *Delphinus delphis,* accounting for approximately 75% of all mammal sightings, followed by Pilot Whales, *Globicephala melas*, at around 9%. Of the large whales seen, Humpback Whales, *Meaptera novaengliae*, made up a majority of individuals. Of special note were a small pod of Atlantic White-sided Dolphins, *Lagenorynchu acutus*, as well as Sperm Whales, *Physeter macrocephalus*, and a group of unidientified Beaked Whale, *Mesoplodon sp;* these species are not often seen on regular survey.

Only one Loggerhead sea turtle, *Caretta caretta,* was sighted and was sighted this trip, probably mostly due to the limited time spent in warmer waters down South or in the Gulf Stream. Of special note a large number of Sunfish, *Mola mola,* and Basking Shark, *Cetorhinus maximus*, were seen off of New England. Specifically concerning the sightings of Basking Sharks, several different individuals were seen breaching clear out of the water.

Table 2. Other Sighted Marine Megafauna

Common Name	Scienctific Name	Number Observed
Fin Whale	*Balaenoptera physalus*	2
Humpback Whale	*Megaptera novaeangliae*	22
Minke Whale	*Balaenoptera acutorostrata*	2
Unidentified Whale		4
Unidentified Small Whale		1
Unidentified Large Whale		5
Sperm Whale	*Physeter macrocephalus*	2
Pilot Whale	*Globicephala melas*	43
Risso's Dolphin	*Grampus griseus*	6
Common Dolphin	*Delphinus delphis*	336
Bottlenose Dolphin	*Tursiops truncatus*	15
Atantic White-sided Dolphin	*Lagenorhynchus acutus*	5
Unidentified Dolphin		1
Mesoplodon sp		2
Loggerhead Sea Turtle	*Caretta caretta*	1
Ocean Sunfish	*Mola mola*	41
Basking Shark	*Cetorhinus maximus*	29
Blue Shark	*Prionace glauca*	1
School of Tuna (larger/small)		6
School of Fish		3

Literature Cited

Anonymous. 2011 Seabird Survey Instruction Protocol. Seabird distribution and abundance, Summer 2011. NOAA RV Henry B. Bigelow. Northeast Fisheries Science Center.

Ballance, Lisa T. 2011. Seabird Survey Instruction Manual, PICEAS 2011. Ecosystems StudiesProgram Southwest Fisheries Science Center, La Jolla, California.

Heinemann, D. 1981. A range finder for pelagic bird censusing. Journal of Wildlife Management 45: 489-493.

Tasker, M.L., Hope Jones, P., Dixon, T. and Blake, B.F. 1984. Counting seabirds at sea from ships; a review of methods employed and a suggestion for a standardized approach. Auk 101: 567 – 577.