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CAPE CHARLES SEAWATCH: A PROJECT IN SUPPORT OF AN OFFSHORE WIND PROJECT

First Interim Report

April, 2012

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The Center for Conservation Biology is an organization dedicated to discovering innovative solutions to environmental problems that are both scientifically sound and practical within today's social context. Our philosophy has been to use a general systems approach to locate critical information needs and to plot a deliberate course of action to reach what we believe are essential information endpoints.

Background

Virginia agency guidance pertaining to proposed wind facilities within the lower reach of the Chesapeake Bay recommend surveys of waterbirds during fall, winter, and spring seasons to document use for the purpose of assessing potential population-level impacts. Following a scoping meeting in the spring of 2011 including the United States Fish and Wildlife Service, the Virginia Department of Game and Inland Fisheries, ESS Group, Inc., and the Center for Conservation Biology, a field plan was developed to collect observation data to comply with agency recommendations. This interim report provides a brief overview of observations made during the fall season.

Methods

The fall observation period was conducted from 15 October through 15 December, 2012 and included 32 field days. The fall study period was divided evenly into 8 rounds comprised of 4 survey days per round. All survey days began at sunrise and continued until 2pm EST. The general weather conditions were recorded hourly, including wind speed, direction, temperature, cloud cover, visibility, and precipitation.

Two observers were stationed on a 5-m platform on the shoreline located at 37.257193 Northing, -76.024717 Westing (decimal degrees). One observer was responsible for detecting birds over the Chesapeake Bay using a Leica 77 Telvid APO spotting scope. Another observer recorded the observations on field data sheets. Observers switched duties throughout the day to avoid eye strain.

The time of day, distance from shoreline, and height above water was estimated for every bird detected. Birds were placed in one of five bins as; 0-500meters, 501-1000, 1001-2000, 2001-3.6km, and greater than 3.6 kilometers. A line of marker floats are placed at 500 meters, 1000 meters, 2000 meters and a shipping can buoy is at 3.6km was used to help estimate distance from shoreline. The marker buoys were anchored with 100 pound weights to reduce movement in storms. The height of every bird above the water was placed in 1 of 5 zones including 1) sitting on the water, 2) less than 10 meters off the water, 3) 11-30 meters above the water, 4) 30 to 220 meters above the water (potential Rotor Swept Zone), and 5) greater than 220 meters above the water. An average height category was used for birds in flocks. Actual heights of a subsample of birds were collected from birds flying through the nearest bins using a Leica 1500meter range finder to find distance and angle on the bird. This subsample will be used to assess observer error by comparing rangefinder estimates to those estimated visually without such aids. Birds are also recorded as flying north, south, or in “no general direction” if feeding or loafing. Only birds passing through the line of marker buoys were recorded. All birds were recorded to the species level when possible and to a higher taxonomic order when not possible (i.e, duck species, loon species, passerine species).

Results

A total of 113,259 birds was documented moving through the survey area between 15 October and 15 December, 2011 (Table 1). The greatest volume of birds was observed between the third week of October and the second week of December when counts on 2 days exceeded 10,000 birds (Table 1, Figure 1, Figure 2). Eighty-two species were detected within the study area (Table 2). Dominant species included Red-throated Loon (24.7% of total), Northern Gannet (14.6%), and Laughing Gull (12.4%). Collectively, gull species and waterfowl accounted for 22.5% and 17.3% of observations respectively. Uncommon species observed included Eared Grebe, Pomarine Jaeger, and Parasitic Jaeger.

The majority (89.4%) of birds detected were below the rotor zone with 1.2% roosting on the water, 72.2% flying just above the water surface, and 16.0% flying above 10 m but below the rotor zone. Birds flying within the expected rotor sweep zone accounted for 10.1% of the total observed. Dominant species flying within this zone included Northern Gannet (56.5%), Laughing Gull (10.8%), and Double-crested Cormorant (6.8%). Included in this group was 228 Brown Pelicans and 45 Bald Eagles.

Table 1. Dates of seabird counts, associated survey round, and total birds observed during the 2011 fall seabird count near Cape Charles, Virginia.

Date of Count	Survey Round	Total Birds Counted
10/17/2011	1	1178
10/18/2011	1	1701
10/20/2011	1	1033
10/21/2011	1	1352
10/23/2011	2	1898
10/24/2011	2	1867
10/25/2011	2	2007
10/28/2011	2	3418
10/31/2011	3	6459
11/2/2011	3	2721
11/3/2011	3	2868
11/4/2011	3	2421
11/8/2011	4	4936
11/14/2011	4	1887
11/15/2011	4	2129
11/17/2011	4	2249
11/18/2011	5	1963
11/19/2011	5	3759
11/20/2011	5	3040
11/21/2011	5	1981
11/25/2011	6	10130

11/27/2011	6	5337
11/28/2011	6	3918
11/30/2011	6	1764
12/2/2011	7	6587
12/5/2011	7	3139
12/6/2011	7	6756
12/9/2011	7	11153
12/11/2011	8	2696
12/12/2011	8	2954
12/13/2011	8	3531
12/14/2011	8	4554
All Dates		113,259

Figure 1. Total observations by count date during the 2011 fall seabird count near Cape Charles, Virginia.

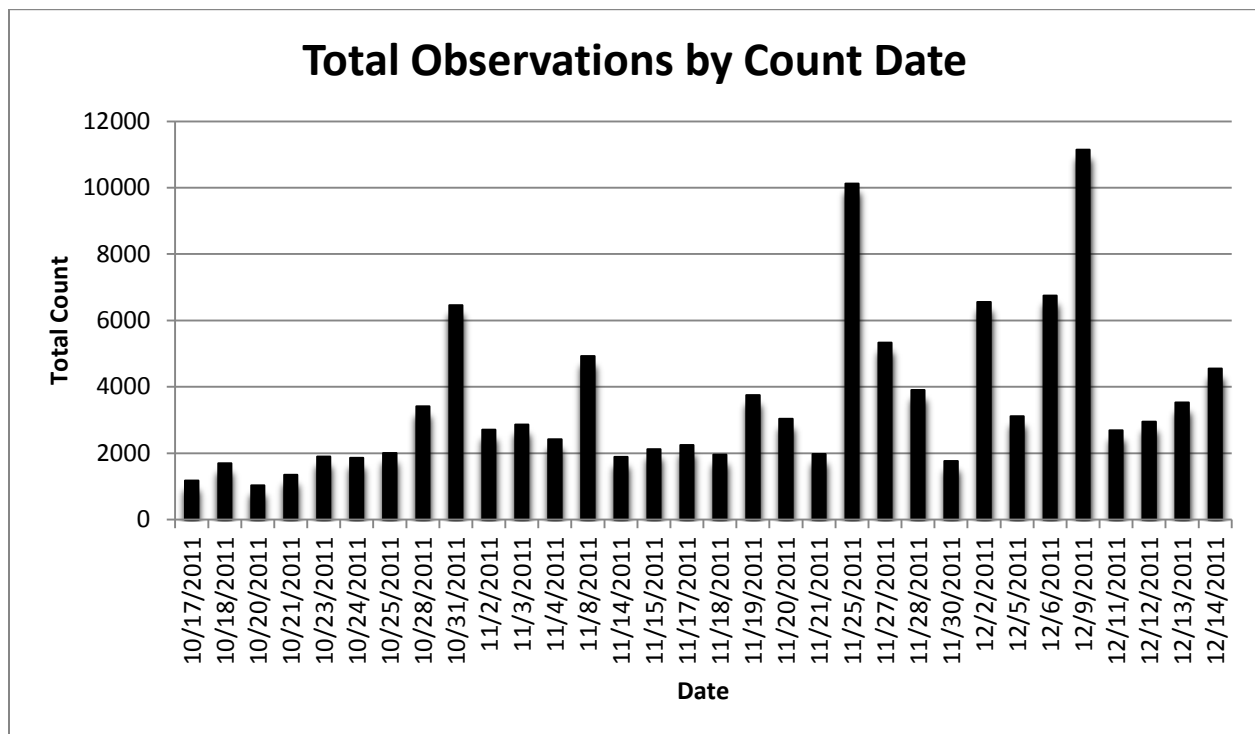


Figure 2. Total observations by survey round during the 2011 fall seabird count near Cape Charles, Virginia.

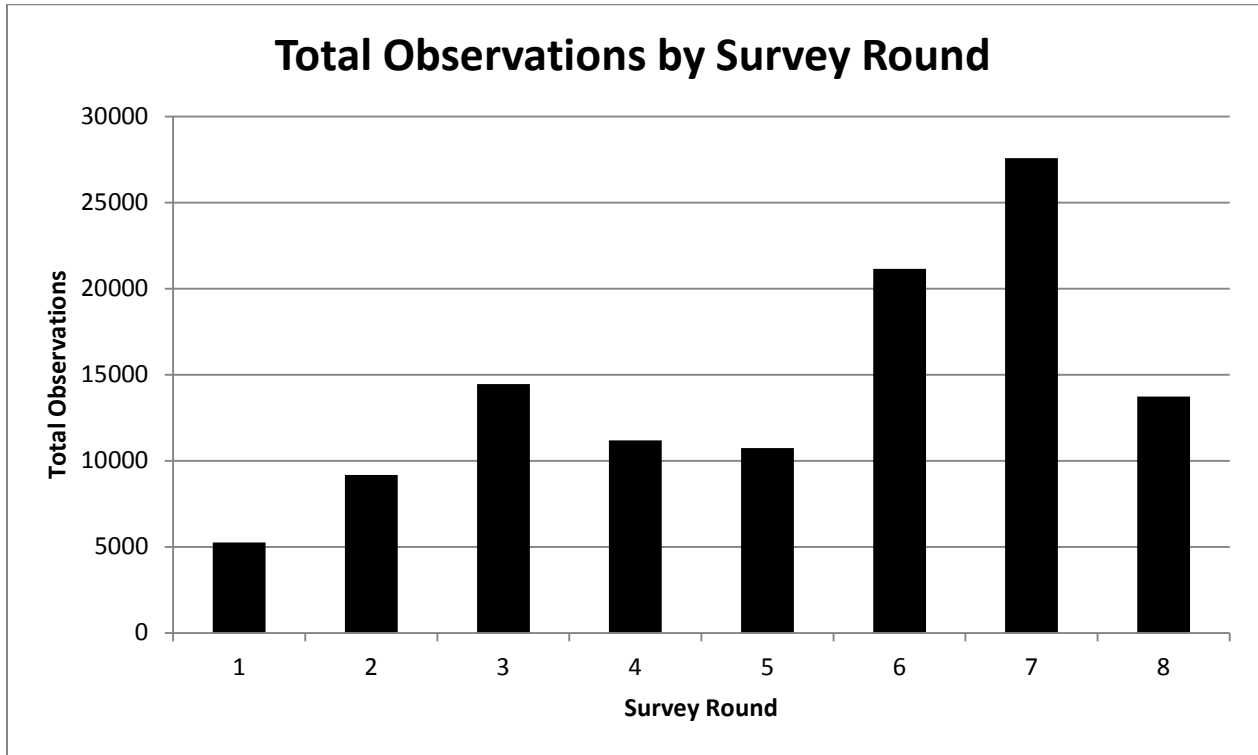


Table 2. Common name, genus and species, and total count of all birds observed during the 2011 fall seabird count near Cape Charles, Virginia.

Common Name	Genus	Species	Total Count
Canada Goose	<i>Branta</i>	<i>canadensis</i>	53
Atlantic Brant	<i>Branta</i>	<i>bernicla</i>	15
Tundra Swan	<i>Cygnus</i>	<i>columbianus</i>	438
Wood Duck	<i>Aix</i>	<i>sponsa</i>	5
Gadwall	<i>Anas</i>	<i>strepera</i>	25
Eurasian Wigeon	<i>Anas</i>	<i>penelope</i>	2
American Wigeon	<i>Anas</i>	<i>americana</i>	112
American Black Duck	<i>Anas</i>	<i>rubripes</i>	7
Mallard	<i>Anas</i>	<i>platyrhynchos</i>	17
Am. Green-winged Teal	<i>Anas</i>	<i>crecca</i>	7
Northern Pintail	<i>Anas</i>	<i>acuta</i>	20
Redhead	<i>Aythya</i>	<i>americana</i>	26
Greater Scaup	<i>Aythya</i>	<i>marila</i>	32
Lesser Scaup	<i>Aythya</i>	<i>affinis</i>	28
King Eider	<i>Somateria</i>	<i>spectabilis</i>	1

Surf Scoter	<i>Melanitta</i>	<i>perspicillata</i>	7,544
White-winged Scoter	<i>Melanitta</i>	<i>fusca</i>	89
Black Scoter	<i>Melanitta</i>	<i>nigra</i>	263
Dark-winged Scoter	<i>Melanitta</i>	<i>sp.</i>	5,838
Long-tailed Duck	<i>Clangula</i>	<i>hyemalis</i>	186
Bufflehead	<i>Bucephala</i>	<i>albeola</i>	1,295
Common Goldeneye	<i>Bucephala</i>	<i>clangula</i>	4
Hooded Merganser	<i>Lophodytes</i>	<i>cucullatus</i>	15
Red-breasted Merganser	<i>Mergus</i>	<i>serrator</i>	1,228
Unidentified Duck	Duck	<i>sp.</i>	2,358
Red-throated Loon	<i>Gavia</i>	<i>stellata</i>	28,016
Common Loon	<i>Gavia</i>	<i>immer</i>	3,208
Unidentified Loon	<i>Gavia</i>	<i>sp.</i>	3,374
Pied-billed Grebe	<i>Podilymbus</i>	<i>podiceps</i>	1
Horned Grebe	<i>Podiceps</i>	<i>auritus</i>	515
Red-necked Grebe	<i>Podiceps</i>	<i>griseogen</i>	4
Eared Grebe	<i>Podiceps</i>	<i>nigricollis</i>	1
Northern Gannet	<i>Morus</i>	<i>bassanus</i>	16,552
Brown Pelican	<i>Pelecanus</i>	<i>occidentalis</i>	4,123
Double-crested Cormorant	<i>Phalacrocorax</i>	<i>auritus</i>	3,000
Great Cormorant	<i>Phalacrocorax</i>	<i>carbo</i>	244
Unidentified Cormorant	Cormorant	<i>sp.</i>	18
Great Blue Heron	<i>Ardea</i>	<i>herodias</i>	37
Little Blue Heron	<i>Egretta</i>	<i>caerulea</i>	1
Turkey Vulture	<i>Cathartes</i>	<i>aura</i>	10
Osprey	<i>Pandion</i>	<i>haliaetus</i>	18
Bald Eagle	<i>Haliaeetus</i>	<i>leucocephalus</i>	97
Northern Harrier	<i>Circus</i>	<i>cyaneus</i>	4
Sharp-shinned Hawk	<i>Accipiter</i>	<i>striatus</i>	14
Cooper's Hawk	<i>Accipiter</i>	<i>cooperii</i>	3
American Kestrel	<i>Falco</i>	<i>sparverius</i>	4
Merlin	<i>Falco</i>	<i>columbarius</i>	2
Peregrine Falcon	<i>Falco</i>	<i>peregrinus</i>	3
American Coot	<i>Fulica</i>	<i>americana</i>	1
Black-bellied Plover	<i>Pluvialis</i>	<i>squatarola</i>	11
Killdeer	<i>Charadrius</i>	<i>vociferus</i>	1
American Oystercatcher	<i>Haematopus</i>	<i>palliatu</i>	123
Ruddy Turnstone	<i>Arenaria</i>	<i>interpres</i>	114
Purple Sandpiper	<i>Calidris</i>	<i>maritima</i>	125
Dunlin	<i>Calidris</i>	<i>alpina</i>	80
Unidentified Shorebird	Shorebird	<i>sp.</i>	90
Pomarine Jaeger	<i>Stercorarius</i>	<i>pomarinus</i>	1

Parasitic Jaeger	<i>Stercorarius</i>	<i>parasiticus</i>	3
Unidentified Jaeger	<i>Stercorarius</i>	sp.	4
Bonaparte's Gull	<i>Larus</i>	<i>philadelphia</i>	5,360
Laughing Gull	<i>Larus</i>	<i>atricilla</i>	14,048
Ring-billed Gull	<i>Larus</i>	<i>delawarensis</i>	483
Herring Gull	<i>Larus</i>	<i>argentatus</i>	775
Great Black-backed Gull	<i>Larus</i>	<i>marinus</i>	1,278
Unidentified Gull	Gull	sp.	3,538
Caspian Tern	<i>Sterna</i>	<i>caspia</i>	4
Royal Tern	<i>Sterna</i>	<i>maxima</i>	130
Sandwich Tern	<i>Sterna</i>	<i>sandvicensis</i>	24
Forster's Tern	<i>Sterna</i>	<i>forsteri</i>	6,937
Common Tern	<i>Sterna</i>	<i>hirundo</i>	6
Unidentified Tern	Tern	sp.	8
Black Skimmer	<i>Rynchops</i>	<i>niger</i>	2
Chimney Swift	<i>Chaetura</i>	<i>pelagica</i>	3
Belted Kingfisher	<i>Ceryle</i>	<i>alcyon</i>	7
American Crow	<i>Corvus</i>	<i>brachyrhynchos</i>	25
Fish Crow	<i>Corvus</i>	<i>ossifragus</i>	3
Horned Lark	<i>Eremophila</i>	<i>alpestris</i>	12
Tree Swallow	<i>Tachycineta</i>	<i>bicolor</i>	93
N. Rough-winged Swallow	<i>Stelgidopteryx</i>	<i>serripennis</i>	9
Barn Swallow	<i>Hirundo</i>	<i>rustica</i>	2
Unidentified Swallow	Swallow	sp.	1
Cedar Waxwing	<i>Bombycilla</i>	<i>cedrorum</i>	2
Myrtle Warbler	<i>Dendroica</i>	<i>coronata</i>	7
Yellow Palm Warbler	<i>Dendroica</i>	<i>palmarum</i>	1
Blackpoll Warbler	<i>Dendroica</i>	<i>striata</i>	3
Unidentified Warbler	Warbler	sp.	4
Unidentified Sparrow	Sparrow	sp.	1
Red-winged Blackbird	<i>Agelaius</i>	<i>phoeniceus</i>	37
Common Grackle	<i>Quiscalus</i>	<i>quiscula</i>	120
American Goldfinch	<i>Carduelis</i>	<i>tristis</i>	37
Unidentified Passerine	Passerine	sp.	15
Totals			113,259