

Report on Waterbird Migration Study at Blake Point - 2013

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Introduction

Understanding the movement of species along regular pathways during migration is an important part of managing land and water resources for the maintenance of biodiversity. Such phenomena can sometimes go unnoticed if they occur during seasons with few human observers or in inaccessible areas. Recent work by J. Youngman and others have provided suggestive evidence for an important migration route for waterbirds (i.e., ducks, loons, grebes, and cormorants) off the eastern tip of Isle Royale. Waterbird migration surveys at Manitou Island (Keweenaw County), Porphyry Island, Ontario, and a previous survey at Blake Point in 2009 led the investigators to believe that a substantial waterbird migration takes place every spring and fall between Passage Island and Isle Royale's (ISRO) Blake Point. The goal of this study was to gather additional data on waterbird migration in the strait between ISRO and Passage Island. Because a significant movement was seen from Blake Point in the fall of 2009 but no systematic surveys were ever done from Passage Island, we planned to use Blake Point as the primary observation location with lesser efforts at the NE tip of Passage Island to determine if movement was being missed there.

Methods

We planned on a one person watch at Blake Point for approximately two weeks each in spring and fall. For Passage Island, we planned on one week each for spring and fall. The long delayed thaw and late snowstorms during the spring of 2013 caused significant difficulties for the park service, leading to schedule changes for the Ranger III. This necessitated significant changes in our scheduling. Our Blake Point effort was reduced to ten days of observation and we were not able to access Passage Island. The observer scheduled for Passage Island assisted at Blake Point for the first three days. In the fall of 2013, our 2nd shift was canceled by the US government shutdown that reduced our observation days by half and also meant the loss of any fall observations from Passage Island.

On May 5 2013, we set up observation on Blake Point at approximately 48 degrees 11.335" and 88 degrees 25.360 (WGS84). This was on the SE tip of Blake Point about 800 feet SSW of the navigation light there. In the fall of 2013, the different direction of incoming birds dictated a different observation spot and several days of observation were conducted from a spot about 50 feet west of the light. However, a close encounter with a moose in the darkness and the lack of trail through the rough terrain led the observer to use the spring location for several days.

A spotting scope and binoculars were used to spot, identify and count the passing birds, which were recorded in a notebook with time of passing and notes on flight direction and species composition of flocks. Although migrant waterbirds (ducks, loons, grebes, cormorants, geese) were the main focus, it was expected that some raptor migration and passerine migration might be observed and notes were taken on those as well. The counts lasted about 7 to 8 hr/day and weather data was recorded.

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Results

In ten days of observation in the spring, 2013, we saw 3,563 waterbirds pass N, NW or NNW between Blake Point and Passage Island. Twenty-four species of waterbirds were seen in migration. The most abundant species were Common Loon (1,254), Red-breasted Merganser (794), Long-tailed Duck (128), Red-necked Grebe (117), and Greater Scaup (115). Along with Unidentified Loon (242) and Unidentified Duck (118), these made up 77% of the total flight observed. Table 2 gives the total spring count. Table 3 lists all waterbird species observed passing Blake Point during May 2013.

In six days of observation in the fall of 2013, we saw 1,064 waterbirds pass S, SE or SSE past Blake Point. We were not able to identify most fall waterbirds to species.

Discussion

Waterbird Migration

Based on what is known about the timing of waterbird migration at other locations in the northern Great Lakes, a complete study of waterbird migration would entail at least six weeks of observation in the spring and over twelve in the fall and was well beyond the modest means of our project. The limited time actually spent in observation necessarily limits the usefulness of our data for broad conclusions, but our numbers clearly reinforce the suspicion raised by the 2009 study that the strait between Blake and Passage Island is a major Lake Superior migration pathway for waterbirds.

Two places on Lake Superior conduct regular spring and fall waterbird counts, Whitefish Point Bird Observatory (WPBO) at the SE tip of Lake Superior and Thunder Cape Bird Observatory (TCBO) 25 miles (40 km) WNW of Blake Point. We requested and received spring data from both observatories to compare to our Blake Point counts. For the same 5-14 May period, TCBO had 1,119 waterbirds pass and WPBO had 5,731. Our Blake Point total of 3,563 represents 310% of the TCBO count and 62% of WPBO's total.

We believe these numbers probably represent typical volumes of migration given the locations of each site on Lake Superior. Whitefish Point's location at the SE tip of Lake Superior allows it to see a large majority of all migrant waterbirds pass in both spring and fall given the generally NW / SE flight directions for many species in the mid-continent. Lake Superior's vast size and the three large bays on the north shore allow for several different streams of migration. Previous studies have shown that Thunder, Black and Nipigon Bays all have large numbers of migrating waterbirds. Whitefish Point has the highest numbers because it appears that almost all migratory waterbirds traveling across Lake Superior pass by it. Thunder Cape only sees the birds flying into (spring) or out of (fall) Thunder Bay. Blake Point seems to have birds flying to and from both Thunder Bay and Black Bay – therefore its volume of migration is intermediate between Whitefish Point and Thunder Cape. Figure 1 gives our judgment of spring waterbird flyways through central Lake Superior.

Common Loons accounted for 35% of the spring total at Blake and all Loons (Common, Unidentified and Red-throated) accounted for 44% of the total. This high percentage of loons is partly an artifact of the timing of our visit. A later period would have likely increased the duck portion of the total.

In the spring, while our observers were stuck at Mott Island on May 4th we did a three hour waterbird count and tallied 121 Common Loons and lesser numbers of Red-breasted Merganser, Bufflehead, Red-

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necked Grebe, Horned Grebe and White-winged Scoter. All these birds were moving NE along the shoreline and likely continued up to Blake Point. Quite likely many birds cross Lake Superior from near the tip of the Keweenaw peninsula and pass directly through the strait at Blake Point but apparently quite a few miss the strait and bump into Isle Royale and follow the shoreline around either end (Figure 1).

The fall count period was cut in half by the government shutdown but in the first two hours of the first fall day at Blake, our counter recorded 655 waterbirds passing before fog rolled in and shut-down the count. That 655 waterbirds was about 30% more than Whitefish Point recorded that day and for the six day period, Blake's total count was 29.5% of Whitefish's count. For most days in the fall 2013, south winds prevailed at Blake which is known to reduce the movement of birds (Stout 1995). The shortened count period also hurt our effectiveness. Our observer for the 1st half of the fall count was our least experienced and he was unable to identify most birds to species but he did get accurate counts that indicate the magnitude of the flight.

While Blake Point was expected to be the location with the greatest movement of waterbirds, we intended to have six to seven days of observation at Passage Island in both spring and fall to see if birds are using Passage, especially the NE tip, as a navigational marker. The failure to get any observation time at Passage this year leaves that question unanswered. Birds passing by the SW tip of Passage would be somewhat visible from Blake but birds passing the NE tip would be just too far to see.

Raptor Migration

We expected to see some raptor migration at Blake Point and we did. Over the 10 days we recorded 88 sightings of raptors. While many of those seemed to be resident Bald Eagle, Peregrine Falcon, Merlin and Kestrel, 27 appeared to have just crossed to Isle Royale across Lake Superior from the south. These birds were first observed up to ½ mile south of all islands flying low over the lake coming north. This is some of the first evidence that there may be a significant migration of raptors from the Keweenaw Peninsula to Isle Royale. The Sharp-shinned Hawk was the species most often seen coming in from the south. Given the massive numbers of migrant raptors in the Keweenaw (Henschell 2010, Green 2011, Green 2012) seeing 15 to 20 raptors coming in to Blake on south wind days clearly is not a large percentage of the Keweenaw raptor movement. However, given the total lack of a focusing or funneling effect in the geography of Isle Royale and the Keweenaw, the small numbers we saw could have been part of a movement of a few hundred raptors that crossed and we only saw the few dozen that happened to come ashore within our limited view.

Passerine Migration

During the spring, every day at Blake a few lake crossing passerine migrants were detected coming in to Isle Royale. The biggest day was on the 6th when 126 came ashore in light south winds. Table 1 gives a species list of all non-waterbirds seen flying in to Isle Royale from the south.

On May 8th our observer heard a Red-bellied Woodpecker calling at Blake Point. While never seen, the repeated calls heard by someone who lives in an area where Red-bellied's are common seems a good enough record. We believe that might be a first record for Red-bellied at Isle Royale.

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Table 1

Non-Waterbirds seen coming in to Isle Royale from south

Sharp-shinned Hawk (*Accipiter striatus*)

American Kestrel (*Falco sparverius*)

Peregrine Falcon (*Falco peregrinus*)

Northern Harrier (*Circus cyaneus*)

Rough-legged Hawk (*Buteo lagopus*)

Short-eared Owl (*Asio flammeus*)

Northern Flicker (*Colaptes auratus*)

Snipe / Woodcock

Belted Kingfisher (*Ceryle alcyon*)

Boreal Chickadee (*Poecile hudsonica*)

Red-breasted Nuthatch (*Sitta Canadensis*)

Golden-crowned Kinglet (*Regulus satrapa*)

Ruby-crowned Kinglet (*Regulus calendula*)

Horned Lark (*Eremophila alpestris*)

Blue-headed Vireo (*Vireo solitarius*)

Black and White Warbler (*Mniotilta varia*)

Palm Warbler (*Dendroica palmarum*)

Yellow-rumped Warbler (*Dendroica coronata*)

American Tree Sparrow (*Spizella arborea*)

Savannah Sparrow (*Passerculus sandwichensis*)

Dark-eyed Junco (*Junco hyemalis*)

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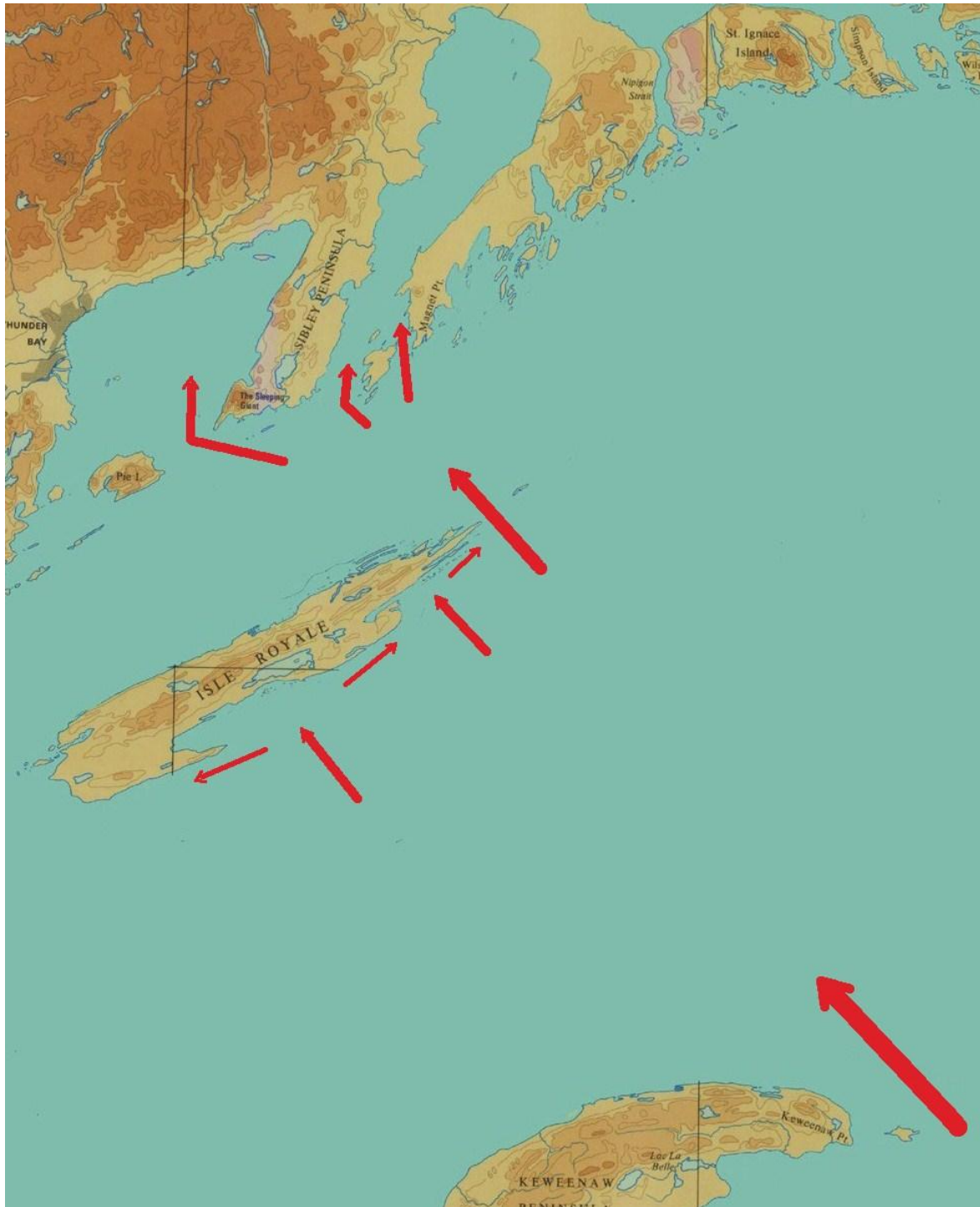
Spring Waterbird Count at Blake Point, Isle Royale 5 - 14 May 2013

Table 2

	5- May	6- May	7- May	8- May	9- May	10- May	11- May	12- May	13- May	14- May	Totals
Canada Goose	0	43	32	4	0	0	0	3	2	0	84
Gadwall	0	3	0	0	2	0	0	0	0	0	5
American Wigeon	5	2	0	0	2	0	0	0	0	0	9
American Black Duck	0	1	2	0	0	0	0	0	0	0	3
Mallard	22	10	3	4	3	0	9	2	0	0	53
Blue-winged Teal	0	0	0	0	0	0	0	0	0	4	4
Northern Shoveler	0	0	0	2	2	0	0	0	0	4	8
Northern Pintail	2	7	3	0	0	0	0	0	0	0	12
Green-winged Teal	20	10	3	4	10	0	0	0	0	2	49
Ring-necked Duck	0	0	0	0	2	0	1	0	0	0	3
Aythya Species	0	4	0	0	0	0	0	0	0	10	14
Greater Scaup	18	39	25	19	9	0	0	1	0	4	115
Lesser Scaup	0	0	0	0	5	0	0	0	0	0	5
Scaup Species	18	10	8	3	0	0	0	0	0	4	43
Surf Scoter	0	0	0	4	0	0	0	0	0	0	4
White-winged Scoter	3	15	41	20	2	0	0	0	0	0	81
Scoter Species	0	0	6	0	0	0	0	0	0	0	6
Long-tailed Duck	33	23	8	21	10	0	17	0	0	16	128
Bufflehead	33	11	5	0	0	0	0	0	0	0	49
Common Goldeneye	24	8	1	7	29	0	4	0	0	3	76
Common Merganser	9	8	4	23	4	0	3	2	9	19	81
Red-breasted Merganser	266	136	101	75	94	3	22	1	9	87	794
Merganser Species	3	1	0	6	0	0	0	0	0	6	16
Red-throated Loon	32	32	5	2	9	2	0	1	1	0	84
Common Loon	436	234	236	186	70	24	3	18	21	26	1254
Loon Species	24	81	111	14	3	6	1	0	1	1	242
Red-necked Grebe	87	15	4	2	4	0	1	0	0	4	117
Horned Grebe	0	3	0	1	0	0	0	0	0	0	4
Double-crested Cormorant	2	7	8	24	0	0	0	0	18	4	63
Unidentified Duck	22	46	30	11	0	0	0	0	0	9	118
Unidentified Dabbler	2	3	2	0	0	0	0	0	0	0	7
Unidentified Waterbird	2	3	3	23	0	0	0	0	0	1	32
Total Migrant Waterbirds	1063	755	641	455	260	35	61	28	61	204	3563
WPBO's Count	758	603	1458	579	875	412	483	23	82	458	5731

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Figure 1 Apparent spring waterbird pathways in area of Isle Royale
Note: Some Common Loons just fly over island



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Table 3

Waterbird Species Observed migrating past Blake Point, May 2013

Canada Goose (*Branta canadensis*)
Gadwall (*Anas strepera*)
American Wigeon (*Anas Americana*)
American Black Duck (*Anas rubripes*)
Mallard (*Anas platyrhynchos*)
Blue-winged Teal (*Anas discors*)
Northern Shoveler (*Anas clypeata*)
Northern Pintail (*Anas acuta*)
Green-winged Teal (*Anas crecca*)
Ring-necked Duck (*Aythya collaris*)
Greater Scaup (*Aythya marila*)
Lesser Scaup (*Aythya affinis*)
Surf Scoter (*Melanitta perspicillata*)
White-winged Scoter (*Melanitta fusca*)
Long-tailed Duck (*Clangula hyemalis*)
Bufflehead (*Bucephala albeola*)
Common Goldeneye (*Bucephala clangula*)
Common Merganser (*Mergus merganser*)
Red-breasted Merganser (*Mergus serrator*)
Red-throated Loon (*Gavia stellata*)
Common Loon (*Gavia immer*)
Red-necked Grebe (*Podiceps grisegena*)
Horned Grebe (*Podiceps auritus*)
Double-crested Cormorant (*Phalacrocorax auritus*)

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