



Schoodic Island Nesting Bird Survey 2016



Common Eider, *Somateria mollissima*, from Little Moose Is.
Photo by E R Lehnert

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Introduction

Acadia National Park is located within the Eastern Coastal Region of the State of Maine, and encompasses approximately 143 square kilometers (55 mi²). The majority of the park is located on Mount Desert Island at the southwestern terminus of the Eastern Coastal Region. The ECR extends from Mount Desert Island in the southwest to the US-Canadian Border to the northeast, in a 32-kilometer-wide (20 mi) band along the Gulf of Maine. The moderate climate of the Eastern Coastal Region is strongly influenced by the Gulf of Maine, which, due to the steady water temperature, brings warmer winter and cooler summer temperatures relative to those found inland. The park itself lies in a transition zone between northern boreal and southern mixed deciduous forests. This combination of topography and climatic variation has contributed to the rich flora and fauna diversity of Acadia National Park. (Kelly 2004)

The 10 square kilometer (4 mi²) Schoodic District of Acadia National Park was added in 1929, and is the only section of the National Park to be located on the mainland of Maine. The peninsula functioned as a US Navy Base between 1935 and 2002, where it functioned as a radio communications base to Europe. When technological advances deemed the base obsolete, it was closed and the base, or Big Moose Island, was transferred back to the National Park Service as identified in the original agreement. An additional 12 km² was donated to the National Park in 2015, making the total area of the Schoodic District to be 22 km² (8.5 mi²). (Kelly 2004, Hartford 2015)

The Schoodic Peninsula is a formation of fine-grained pinkish granite bedrock exposed by geologic upheavals, glacial scouring, and inundation by the sea. Fractures in the granite along the shoreline result in slabs and blocks intermixed with intrusive basalt dikes. Wave action has resulted in significant erosion to the basalt, occasioning in deep, narrow chasms, sea cliffs, and rounded block-like fragments and cobbles in pocket beaches. The effect of the area's geologic history is a diverse landscape composite consisting of small wetlands and bogs, upland forest, ridges, and rugged mixed coastline features. (Kelly 2004, Hartford 2015)

The Schoodic District includes four islands in addition to the mainland area, with a combined area of 0.56 km² (140ac). Schoodic Island is the largest of the four islands in the Schoodic District at 0.27 km² (67 ac) and lies 1.2 km (0.75 mi) from the southeastern tip of the Schoodic Peninsula. The island is never accessible by foot at low tide and hosts the largest concentration of nesting Common Eiders (*Somateria mollissima*) in Maine (Madell 2015). Per the Superintendent's Compendium, the island is closed from February 15 to August 31 annually. (Madell 2015, Kelly 2004, Hartford 2015)

Purpose

Seabird nesting islands are found all along the Maine coast. At least 300 are in some form of protected status (i.e., federal or state ownership, land trust or conservation easement, or other protected status.) Several of the park's islands are known to be current islands for nesting ducks and seabirds, although annual surveys of these islands are not conducted most often because of their remoteness and then by the lack program support. Schoodic Island is one of these islands, and unlike most of the other ANP seabird nesting islands, is visible from the mainland. For at

least the last few decades it has been thought to have one of the largest nesting populations of common eiders. In addition to other seabirds (i.e., herring gulls, black-back gulls, petrels, etc.) it was known to have a good nesting group of Double-crested Cormorants (*Phalacrocorax auritus*). Several studies and monitoring programs over the decade have reported poor nesting successes for several species of seabirds common to the area. The idea to establish a tracking program for these birds for at least one ANP island, without incurring the expected costs associated with a remote seabird nesting monitoring program, was justification to suggest and attempt a pilot shore-based survey of Schoodic Island's nesting seabirds. Such reasoning prompted the park biologist to propose a Schoodic Peninsula based survey be attempted. The primary purpose being to assess the feasibility of establishing a method to track the populations of seabirds by conducting counts of birds (i.e. shoreline waters, intertidal zone, etc.). The results would answer where such an approach was possible, and if, begin to establish a population baseline that could be compared in subsequent years using similar survey techniques. The pilot effort also might answer whether the survey could provide additional information such as timing of hatches, hatch successes by species, and changes in species and gender compositions. If successful, the program would begin a means to follow the status of nesting seabirds, for at least for this island, without the more costly boat or aerial surveys or the more disruptive and harmful on-island counting surveys.

Methods

Surveys were proposed to be conducted from Little Moose Island or Blueberry Hill Overlook on clear (non-fog) days at low tide. We hoped for survey days with low winds, no fog, and generally good viewing conditions, all which lessened the chances of the surf or near ground airspace obscuring birds lingering near or on the shoreline.

Equipment we used included a Celestron Ultima 100 Angled Spotting Scope with tripod and a Maven 8x40 pair of binoculars. Knee-high rubber boots are recommended, but not required, for the crossing to Little Moose Island.

Observations were to be recorded on pocket-sized notebooks, noting wind direction and speed, temperature, and sky condition.

Results

Attempts to survey from Blueberry Hill Overlook proved unsuccessful due to the geologic features of Schoodic Island. When viewing from Blueberry Hill Overlook, it was perceived that birds would hide from the sea conditions in the many crags and crevices on the shore of the island and were not visible from Blueberry Hill. Moving the survey point to Little Moose Island allowed for a better angle of viewing to Schoodic Island, but could only be conducted during low tide due to accessibility.

Wave conditions above the 0-1 foot height range made detection of birds difficult, and eider hens would keep ducklings close to shore in such conditions. The dark coloration of the ducklings against the black rocks made them difficult to locate, and as such, surveys were best done when wave conditions were calm.

I did use a Celestron Ultima 100 Spotting Scope with tripod and Maven 8x40 binoculars. Knee-high rubber boots are recommended, but not required, for the crossing to Little Moose Island.

Due to the prevailing and poor weather conditions of fog and waves for most days during the months of June and July, four surveys were completed during the nesting season. Observations of birds on the nest or with young were sufficient to confirm nesting and successful hatching, but to establish a daily, weekly, or monthly tally of birds by species numbers could not be accurately estimated with the low number of surveys completed.

Confirmed breeding species of Schoodic Island include the Common Eider (*Somateria mollissima*) and Double-crested Cormorant (*Phalacrocorax auritus*). A nest of a Bald Eagle (*Haliaeetus leucocephalus*) is located on the southern end of the island and has been recorded as active as far back as 1975, but no eagles were observed using the nest during the period of this survey (Folger et al 1986). Due to the late nature of the surveys, it is plausible that the nest was occupied during the 2016 season and fledglings had left the nest by the time surveys had commenced. Adult and juvenile Bald Eagles were observed flying in the vicinity during the June surveys.

Other avian species recorded on the island during their breeding season but with unconfirmed status of nesting on the island include Great Black-backed Gulls (*Larus marinus*), Laughing Gull (*Leucophaeus atricilla*), Herring Gull (*L. argentatus*), Mallard (*Anas platyrhynchos*), and Black Guillemot (*Cepphus grille*).

A complete list of birds recorded during surveys and their corresponding presence codes can be found in Table 1. For Definitions of codes used see table 2.

Historical records of bird surveys on Schoodic Island have confirmed breeding populations of Common Eider and Bald Eagle. Other species present included Greater Black-backed Gull, Herring Gull, Double-crested Cormorant, and Black Guillemot. (Owen et al 1989, Folger et al 1986)

Recommendations for Future Work

Surveys utilizing the use of cameras, drones or aerial surveys, boats, or ground surveys by teams to the island itself are recommended, as weather, ocean, and atmospheric conditions did prevent precise observations in 2016 and should be expected for future land based surveys

Table 1: Species Recorded During 2016 Surveys with Breeding Codes

Species	Latin Name	Date first recorded	Code (final)
Bald Eagle	<i>Haliaeetus leucocephalus</i>	13/6/2016	UN
Common Eider	<i>Somateria mollissima</i>	13/6/2016	FL
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	13/6/2016	ON
Great Black-backed Gull	<i>Larus marinus</i>	13/6/2016	H
Herring Gull	<i>Larus argentatus</i>	13/6/2016	H
Mallard	<i>Anas platyrhynchos</i>	20/6/2016	H
Laughing Gull	<i>Leucophaeus atricilla</i>	13/6/2016	H
Black Guillemot	<i>Cepphus grille</i>	20/6/2016	H

Table 2: Breeding Codes

Code	Shorthand Definition	Definition
ON	Confirmed – Occupied Nest	Occupied nest presumed by parent entering and remaining, exchanging incubation duties, etc.
FL	Confirmed – Recently Fledged Young	Recently fledged or downy young observed while still dependent upon adults
UN	Used Nest	Nest is present, but not active.
H	Possible – In appropriate Habitat	Adult in suitable nesting habitat during its breeding season.

Works Cited

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