

Benjamin D. Swigle  
UNDERC Project 1998  
Analysis of Avian Populations at UNDERC

## Introduction

What are the chances of finding a particular species of a bird on the Notre Dame property? In what sort of habitat is each species most likely to be encountered? How has, and how will abundance of a species change over time? These questions were of significant importance to my research project completed during the 1998 summer at UNDERC.

Prior to the 1998 summer project a field list of birds occurring in the vicinity of the UNDERC property was distributed to each student participating in the summer biology program. The field list consisting of 220 species, was intended to serve as a guide to help students accumulate a current list of species present on the property. Of the 220 proposed species 80 were positively identified over a ten-week stay on the property. This number reflects a greater proportion of birds considered summer or permanent residents. However, it is not intended to represent an official or final list of summer or permanent residents truly present. Nevertheless, the efforts extended during the ten-week stay will hopefully prove beneficial to future UNDERC participants in the production of an accurate field list and information on the bird populations at UNDERC.

In addition to efforts put forth for the creation of an accurate list of species, the American Bald Eagle was observed in detail at different times of day. Known as a sea or fishing eagle, the American Bald Eagle is a large species (30-31") spanning 7ft. The Bald Eagle is mainly or entirely aquatic, feeding largely on fish. The American Bald Eagle was chosen as a subject to observe in detail because this species is abundant on the property and it could generally be found in a predictable area. The general habitat preferred by the Bald Eagle, including lakes, rivers, and marshes, also made UNDERC a prime location for the observation of this species.

Purpose:

1. Identify and compile a list of avian species present on the UNDERC property.
2. Observe the American Bald Eagle (*Haliaeetus leucocephalus*) on a prolonged basis and conclude some typical behavioral patterns.

Materials:

Binoculars

National Audubon Society Field Guide to North American Birds

Data Log Recorder

(3) Garden Song Bird Feeder for sunflower and mixed seed

(1) Garden Song Bird Feeder for thistle seed

(2) 25lb. bags of sunflower and mixed seed

(1) 5lb. bags of thistle seed

(1) Hummingbird feeder

(3) bags of hummingbird feed, 1 oz. dry weight each

Methods:

There is nothing extremely scientific about my approach to accomplish my goals as defined in the purpose section. I used a variety of straightforward means to accomplish these goals. Primarily, water craft was used to observe the Bald Eagle. This method also indirectly yielded positive identification of several other species. The use of a canoe made it possible to explore Tenderfoot Creek for further identification. On a few occasions trips were made on foot to the Presque Isle River area and Nansen Lake in hopes of identifying any of a long list of Sandpipers. A second such adventure near Emaline Lake produced improved results. Another common tactic for identification was to simply wait and allow the species to come into view. To

American Bald Eagles (*Haliaeetus leucocephalus*) are very selective regarding the construction of a nest. The three nests present on Tenderfoot Lake were very similar in their chosen location. Each nest was built near the top of a coniferous tree which was the tallest tree in each respective area. All nests were positioned approximately ten feet below the apex of each particular tree. Furthermore, nests were positioned in a location which offered a broad view of the lake. Such a location was chosen for its accessibility to food and decreased chances of predation. The nest directly south of the wet lab offered even further protection because an open meadow further improved visibility.

Once the Bald Eagle has selected a nesting site, the eagle becomes extremely territorial. On several occasions I observed one or more eagles for several hours during a single setting. Time and time again the subjects would perch for multiple hours. In one instance I observed an eagle on Tenderfoot Lake for four hours without noting a movement from its perch. Consequently the eagle was near the nest site. I attempted to coax this particular eagle into flight by tossing dead chub minnows into the water directly in front of where the eagle was situated. Although the fish floated for several minutes, the eagle could not be enticed into flight. Foraging patterns were not extensively observed but the evidence available indicated eagles generally hunt during the midmorning hours.

Judging from the lack of activity in the Killarney point nest over an eight-week period, it appears evident that eagles abandon nest sites and settle new locations during a lifetime. I observed two nest sites near Killarney Point. The first site was west of Killarney and the second was basically on the point itself. During approximately fifteen visits to the western site no activity was ever documented. This was an active site during the 1997 UNDERC campaign. During the instances where the eagles actively pursued prey, each subject attacked from a perched position.

increase the effectiveness of this method a number of feeders and fish guts was used

I accomplished my initial purpose, the observation of the Bald Eagle, by viewing this species during different hours of daylight. I primarily focused on eagles located on Tenderfoot Lake but eagles on Bay Lake, Big Lake, and Brown Lake also contributed to my conclusions.

Records of all sightings were logged in a notebook. If a positive identification could not be made using the field guide, an interactive CD-rom program was used for identification. To successfully use this program information regarding size, color, general body shape, and habitat was transferred from the field notes into a query found on the CD-rom program. The interactive program also included the song or call of each species. If positive identifications could not be made using personal knowledge, the field guide, and/or the CD-rom program, the species was not included in the final list. The final list represents the combined efforts of the 1998 UNDERC class with special regards to Jennifer Lemler and Dr. Alan Johnson. Attempts to photograph subjects resulted in little success due to the lack of adequate equipment.

Explanation:

The prey the eagle obtained appeared to be dead fish. On several occasions the eagles located in the bay south of the wet lab exhibited circling patterns for a few minutes but each time the subject returned to its original perch without acquiring forage. This behavior was also observed on Big Lake.

Eagles exert a great deal of energy caring for their young. On several occasions (6/9/98, 7/2/98, 7/14/98) I viewed a pair of eagles, which I presumed of different sex, near the nest site. Each time the eagles were both within 200 yards of the nest while the adolescent eagle was present. The energy investment argument is strengthened by the size of the young eagle. The immature eagle is nearly as large as the adults.

The relationship between the adult eagles and the adolescent eagle appears atypical. Even though the eaglet had reached a size similar to the adults, the adolescent did not leave the nest during my observation period. The adults and the eaglet were never together in the nest at the same time. It appeared that the adults continue to feed their young by bringing food to the nest but the eaglet is left alone to feed itself.

#### Bird Feeders:

By using bird feeders I intended to attract birds for photographing and easier identification. It was also my intention to attempt to draw some similarities between a particular habitat and the sort of species which generally occupied the particular habitat. For this reason I placed my bird feeders in three different locations. One feeder was placed near the edge of Cranberry Bog, a second was placed on Bay Lake, and a pair of feeders were placed in a deciduous forest approximately 500 yards from the shore of Bay Lake. The pair of feeders placed in the deciduous forest region were not the same type, one was for mixed seed and the other was

for thistle seed. The feeders were left in these location for a month of periodic observation. I removed the feeders and relocated them behind the residence quarters due to the lack of results in the Bay Lake region. The results were much better once the feeder had been relocated. In fact, each feeder had to be refilled three time in the single week they were present in this location. Each feeder held 200 grams of seed. The feeders which contained sunflower and mixed seed were generally preferred over the thistle seed feeder.

A hummingbird feeder was also present near the residence quarters. Ruby-throated Hummingbirds visited the feeder approximately five time during the ten-week stay. These birds were extremely timid and flew off at the sight of an movement within the cabin.

## Observation summaries of Bald Eagles

Thursday, June 4.

Looking for Bald Eagles on Brown Lake. Eagles spotted in the past during the morning and evening hours on the lake as well as Brown Creek. I motored up the creek for about 1 mile before being stopped by a beaver dam. Eagles were not spotted in this area. Back in the main lake I distributed a few fish in case an eagle may begin circling. From 10:30-2:15 no sighting of the eagle.

Tuesday, June 9.

(1:10 p.m.) Northwest bay of Tenderfoot Lake near Killarney Point contains a large white pine tree which house a large eagle nest. The tree is approximately 60 ft. tall and located very close to the edge of the water. The nest is composed of a variety of dead limbs, none of which are extremely large. The nest is located 5-10ft. below the top of the tree. No activity was observed in this area.

At 1:55 p.m. an adult Bald Eagle was spotted on the east shoreline of Tenderfoot Lake. The eagle was perched on a dead coniferous tree. Eagle made no movement for 20 minutes and was not disturbed by my presence. The head of the eagle is bleach white as are the fan-shaped tail feathers. Compared to other Bald Eagles this subject is a bit smaller. Following the flight the bird landed atop a deciduous tree. When the eagle was in flight it did not rise above the tree line but perched atop the tallest tree in the bay. The body of the eagle was in line with the shore with its head facing the water. About every 5-10 seconds eagles pivoted its head in a direction opposite the water front. Some dead fish were thrown into the lake but the eagle did not leave its perch. When the fish were thrown the eagle followed the prey but was not interested. There is a nest in this bay which is near the location of the adult eagle. Nothing is moving the large nest. The eagle

has not moved for more than two hours and maintains a very erect posture.

(3:10 p.m.) Eagle has not moved. A loud pitched, cawk cawk or keek keek was heard. Call was repeated two or three times and was made by a second eagle which was not visible during the time we were observing the first eagle. No call back was made by the initial eagle atop the deciduous tree.

(3:20 p.m.) The second eagle flew out from under the forest area (middle of the tree line) near the shore. The initial eagle also made movements. For a diagramed description see the field notebook.

We left at 4:30 and an adult eagle was still present on a tall deciduous tree.

Thursday, June 11.

The nest near Killarney Point had no activity from 6:30-7:05. No sign of any subjects or activity inside the nest

Thursday, June 12.

(12:03 p.m.) Arrived along east shore of Tenderfoot Lake. No adults present but the adolescent eagle was in the nest. The immature is much darker than the adults. Bleach-white head is not present. The eaglet is about the same size as the adults. The eaglet is alone in the nest and periodically bobs its head out of the nest. Only the head portion of the eaglet is visible. No communication can be heard.

(12:15 p.m.) About 300 yards from the nest, an adult eagle is perched atop a tall coniferous tree. It may be the same tree the eagle was perched in when we left on Tuesday at 4:30. Each appears to be scanning the water front in search of food or protection of the nest. The adult is in a position to do both. The adult eagle as well as the eaglet in the nest remained stationary for several minutes. The boat was parked and we began to examine the shoreline and other area

surrounding the nest and the site around the eagle's favorite perching tree. A very large meadow surrounds the region directly behind where the eagle normally perches. The meadow offers another natural barrier for the eagle to easily scan for predators or food.

(12:40) We returned to the water but the eagle had taken off. The eaglet was still in the nest with its head barely visible. The adult was not present anywhere along the east shoreline.

(12:55) The eaglet was out of the nest and standing along the edge of it. The eaglet has a stationary position without much head movement. The rain was rather severe today.

Tuesday, June 16.

(9:46 a.m.) When I arrived at the nest area eaglet was present inside the nest. The most noticeable feature of the young eagle is its bright yellow beak. Periodically immature props its head out of the nest about four times a minute. The adults were not present near the nest nor where they present along the east shore, all the way south to the Ontonagon River outlet.

(10:28 a.m.) Eaglet still present in the nest. Common Merganser was also present; see notes in the field notebook.

Thursday, June 25.

(7:13 p.m.) Adult Bald Eagle spotted on a dead tree which house my bird feeder on Bay Lake. The eagle is perched on the tallest branch. The eagle is very vocal presumably in response to a second bird (Belted Kingfisher) which keeps circling the tree the adult is located in. At 7:17 the eagle relieved itself and flew to the south. The eagle was very disturbed by my presence. I could not get closer than 150 yards.

Tuesday, June 30.

(7:08 a.m.) The site south of the wet lab contained an adolescent eagle once again in the nest. No sign of adult eagles. It does not matter how close I get to the nest, the eaglet does not move nor

make any call. Adult eagles were not spotted. A Tree Swallow and Mallards were present.

(9:03 a.m.) No activity was observed during a stay near the nest at Killarney Point.

Thursday, July 2.

(9:03 a.m.)

Adult Bald Eagle was perched atop a tree near the southern point of bay on Tenderfoot Lake; see notes for a diagram. A second eagle was also present much closer to the nest. No communication could be heard. Adult on the point makes little movement other than shifting its head every 15 seconds.

(9:15 a.m.) Eagle closest to the nest (left of the dead tree) swooped at the water surface near the outer edge of the reeds. The eagle did not appear to grasp anything in its talons. The eagle did not appear to be looking directly at the water surface prior to flight. Following the attempt adult flew near the nest. This was the first active feeding behavior I have seen.

(10:25) The location of the attack eagle was lost but Bald Eagle was still present near the point. This eagle appears to keep an eye on the nest by rotating its head 180 degrees in the direction of the nest every 30-45 seconds. Adult shrieks every three minutes but no return call can be heard. No signs of the foraging eagle.

Saturday, July 11.

(5:30) Bald Eagle spotted on Bay Lake. The eagle is situated atop the same tree as my feeder some 40 yards off the ground. The eagle is in a prime location to scan the lake. This is the second sighting of an eagle on Bay Lake. Presence of the eagle could explain why little or no food has been eaten out of my feeder at this location. I was at a distance of about 250 yards from the eagle

Monday, July 13.

Positive Field Identification of Birds Occurring in the Vicinity of the UNDERC Property

Common Name Scientific Name  
Ducks, Geese, Swans Anseriformes

1	Wood Duck	<i>Aix sponsa</i>
2	Blue-winged teal	<i>Anas discors</i>
3	Mallard	<i>Anas platyrhynchos</i>
4	Gadwall	<i>Anas strepera</i>
5	Ring-necked duck	<i>Aythya collaris</i>
6	Canada Goose *	<i>Branta canadensis</i>
7	Hooded Merganser	<i>Mergus cucullatus</i>
8	Common Merganser	<i>Mergus merganser</i>
9	Trumpetor Swan \$	

\* Lake Superior  
\$ Reintroduced  
# Minoqua

Swifts, Hummingbirds Apodiformes

9	Ruby-throated Hummingbird	<i>Archilochus colubris</i>
---	---------------------------	-----------------------------

Nightjars Caprimulgiformes

10	Whip-poor-will	<i>Caprimulgus</i>
----	----------------	--------------------

Gulls, Snipe, Plovers Charadriiformes

11	Killdeer	<i>Charadrius vociferus</i>
12	Black Tern #	<i>Chlidonias nigra</i>
13	Caspian Tern	<i>Hydroprogne caspia</i>
14	Herring Gull *	<i>Larus argentatus</i>
15	Ring-billed Gull *	<i>Larus delawarensis</i>
16	American Woodcock	<i>Scolopax minor</i>

Hérons, Bitterns Ciconiiformes

17	Great Blue Heron	<i>Ardea herodias</i>
18	American Bittern	<i>Botaurus lentiginosus</i>

Pigeons, Doves Columbiformes

19	Mourning Dove	<i>Zenaida macroura</i>
----	---------------	-------------------------

Kingfishers Coraciiformes

20	Belted Kingfisher	<i>Megaceryle alcyon</i>
----	-------------------	--------------------------

Cuckoos Cuculiformes

21	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>
----	---------------------	----------------------------------

Hawks, Eagles, Osprey Falconiformes

22	Red-tailed Hawk	<i>Buteo jamaicensis</i>
23	Red-shouldered Hawk	<i>Buteo lineatus</i>
24	Broad-winged Hawk	<i>Buteo platypterus</i>
25	Northern Harrier	<i>Circus cyaneus</i>
26	Bald Eagle	<i>Haliaeetus leucocephalus</i>
27	Osprey	<i>Pandion haliaetus</i>

Grouse Galliformes

28	Ruffed Grouse	Bonasa umbellus
29	Sharp-tailed Grouse	Tympanuchus phasianellus

Loons

Gaviformes

30	Common Loon	Gavia immer
----	-------------	-------------

Song Birds

Passeriformes

31	Cedar Waxwing	Bombycilla cedrorum
32	American Crow	Corvus brachyrhynchos
33	Common Raven	Corvus corax
34	Blue Jay	Cyanocitta cristata
35	Grasshopper Sparrow	Ammodramus savannarum
36	Northern Cardinal	Cardinalis cardinalis
37	Swamp Sparrow	Melospiza georgiana
38	Song Sparrow	Melospiza melodia
39	Indigo Bunting	Passerina cyanea
40	Rose-breasted Grosbeak	Pheucticus ludovicianus
41	Scarlet Tanager	Piranga olivacea
42	Chipping Sparrow	Spizella passerina
43	White-throated Sparrow	Zonotrichia albicollis
44	American Goldfinch	Carduelis tristis
45	Purple Finch	Carpodacus purpureus
46	White-winged Crossbill	Loxia leucoptera
47	Barn Swallow	Hirundo rustica
48	Purple Martin	Progne subis
49	Bank Swallow	Riparia riparia
50	Tree Swallow	Tachycineta bicolor
51	Red-winged Blackbird	Agelaius phoeniceus
52	Northern Oriole	Icterus galbula
53	Brown headed Cowbird	Molothrus ater
54	Common Grackle	Quiscalus quiscula
55	Black-capped Chickadee	Parus atricapillus
56	Chestnut-sided Warbler	Dendroica pensylvanica
57	Common Yellowthroat	Geothlypis trichas
58	Northern Parula	Parula americana
59	Northern Waterthrush	Seiurus noveboracensis
60	American Redstart	Setophaga ruticilla
61	Gold-winged Warbler	Vermivora chrysotera
62	Tennessee Warbler	Vermivora peregrina
63	Red-breasted Nuthatch	Sitta canadensis
64	White-breasted Nuthatch	Sitta carolinensis
65	Winter wren	Troglodytes troglodytes
66	Hermit Thrush	Catharus guttatus
67	Eastern Bluebird	Sialia sialis
68	American Robin	Turdus migratorius
69	Yellow-bellied Flycatcher	Empidonax flaviventris
70	Great Crested Flycatcher	Myiarchus crinitus
71	Eastern Phoebe	Sayornis phoebe
72	Eastern Kingbird	Tyrannus tyrannus

73	Warbling Vireo	Vireo gilvus
----	----------------	--------------

Woodpeckers

Piciformes

74	Northern Flicker	Colaptes auratus
75	Red-headed Woodpecker	Melanerpes erythrocephalus
76	Black-backed Woodpecker	Picoides arcticus
77	Downy Woodpecker	Picoides pubescens
78	Hairy Woodpecker	Picoides villosus
79	Yellow-bellied Sapsucker	Sphyrapicus varius

Strigiformes

Owls

80	Barred Owl	Strix varia
----	------------	-------------

## Conclusion

Although the abundance of each species of bird present at UNDERC varies to some extent during the year, a significant number of species were identified. Populations of migrants change dramatically as individuals pass through the property on their seasonal movement. Such an explanation could account for the absence of the identification of several species of Sandpipers, Warblers, and Wrens. The data for identification of species considered permanent or summer residents is much better. Forty-nine percent of the summer residents and 63% of the permanent residents were positively identified. These accounts are a reflection of birds included in a list which was compiled prior to the summer program. Hopefully the pioneering efforts of the 1998 UNDERC ornithologists will lead to the creation of a more accurate list. Information regarding species abundance and distribution on the property may also become available with future repetitions.

The observation of Bald Eagles became an excellent choice because of the predictable presence of this species at various sites. The size of the Bald Eagle's nest along with its grandeur and grace in flight also played an important part in the selection of this species. Several conclusions regarding the immature eaglet, the adults and nesting habits were drawn from the observation of the eagles on a variety of lakes.

In addition to the creation of a field list and observation of the eagles, several other aspects of ornithology were learned during the independent study of birds on the property. Bird respiration and the nesting behaviors of Brown-headed Cowbirds were just a few of these aspects. My independent research project provided knowledge of a facet of biology which had not previously been introduced. The knowledge and experience gained at UNDERC will have a large impact on my future career plans. For this, and countless other reasons, I am extremely grateful.