

A NESTING CENSUS OF THE
UNIVERSITY OF MICHIGAN BIOLOGICAL STATION

by

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A report of an original field study conducted
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PREFACE

This study was undertaken in order to learn something of the nesting habits of the bird life found in and around the University of Michigan Biological Station located at the south end of Douglas Lake in Cheboygan county, Michigan and to determine, if possible, the relative success of the various species found in raising their young until their departure from the nest. Young purple martins were banded in an attempt to discover if these same birds will return to the same house for breeding next year. A record of the location, contents when found, and fate of each nest has been kept. In some cases nests were reported which had been occupied this year but for which the number of young was not known. In other cases adult birds were observed feeding young, but the nest was not located. Such instances are noted in the paper but are not included in the summaries.

A number of people have been most helpful to me in preparing this paper. Dr. Olin Sewall Pettingill, Jr. and Dr. Theodora Nelson have given me guidance and assistance in planning and making this study. Mr. Wayne Porter is responsible for the banding of the purple martins.

I also wish to thank the following people for assisting me

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in locating and securing the desired information concerning the nests recorded: Dwain Willard Warner, Robert Lea, Eugene Castle, Esther Wagner, Harry Wilcox, Helen Prockiw, Hazel Bradley, Hazel Deyarmond, Mildred Ostrander, Fred C. Goodell, Philip E. Smith, Frances Ramsdell, and Julian Griggs.

DESCRIPTION OF THE TERRITORY

The region selected for this study was the Biological Station of the University of Michigan which is located at the south end of South Fishtail Bay of Douglas Lake in Cheboygan county, Michigan. The exact territory included the Biological Station proper, i.e., the section housing the summer students, faculty, and laboratories; the territory extending northeast of the camp between the lake shore and the base line road to the first fire line; the territory west of camp to the first fire line; and the territory south of camp to the first road. Thus, the territory is bounded on the north by South Fishtail Bay of Douglas Lake, on the northeast by the first fire line, on the southeast by the base line road, on the south by the road crossing in back of the camp and passing directly by the fire tower and the baseball field, and on the west by the first fire line extending southwest from Manville.

Various types of vegetation are found in this region. Beginning with the south shore line of South Fishtail Bay is a long stretch of beach, void of any vegetative cover except a few species of beach grass. Throughout the camp itself the ground cover consists mainly of various grasses and clovers, poison ivy (Rhus toxicodendron), blueberries (Vaccinium canadense), wild strawberries (Fragaria virginia), mouse ear chickweed

(Cerastium vulgatum), and sandwort (Arenaria serphyllifolia).

The trees found growing in the camp proper are red oak (Quercus borealis), pin cherry (Prunus pennsylvanica), red maple (Acer rubrum), sugar maple (Acer saccharum), paper birch (Betula alba var. papyrifera), white pine (Pinus strobus), and red pine (Pinus resinosa). The maples, oaks, and birches are the most plentiful trees of the camp region.

East of camp between the lake and the base line road is a mixed growth of tall red and white pines (Pinus resinosa and P. strobus) showing a sharp line of demarcation from the comparatively barren beach strip. Beneath the upper canopy of pines are scattered aspens (Populus tremuloides and P. grandidentata), red maple (Acer rubrum), and white birch (Betula alba var. papyrifera). The forest floor is partially covered by such herbaceous plants as Vaccinium canadense, Lonicera canadensis, Diervilla lonicera, false Solomon's seal (Smilicinas), poison ivy (Rhus toxicodendron), and bracken (Pteris aquilina).

The complete section south of camp is made up largely of a young growth of such trees as the large-toothed aspen (Populus grandidentata), the quaking aspen (Populus tremuloides), red maple (Acer rubrum), sugar maple (Acer saccharum), American beech (Fagus grandifolia), American elm (Ulmus americana), basswood (Lilia americana), and Populus balsamifera. Among these young hardwoods is found an occasional red or white pine, hemlock (Tsuga canadensis), balsam (Abies balsamea), or white cedar (Thuja occidentalis). The undergrowth which is not very thick

consists mainly of such shrubs as moosewood (Acer pennsylvanicum), mountain maple (Acer spicatum), arrow-wood (Viburnum acerifolium), sumac (Rhus glabra and R. glabra var. borealis), Lonicera canadensis, and Diervilla lonicera. The forest floor is grown over with aromatic wintergreen (Gaultheria procumbens), various pyrolas such as Pyrola secunda, Pyrola americana, and Pyrola asarifolia, prince's pine (Chimaphila umbellata), and bracken (Pteris aquilina).

The entire region might be summarized by saying that the vegetation consists largely of aspen-maple association intermixed with coniferous growth growing in sandy soil.

DESCRIPTIONS OF NESTS FOUND

The nests of the following birds were found within or very near the prescribed region:

Scolopacidae--Spotted Sandpiper

Cuculidae--Black-billed Cuckoo

Caprimulgidae--Whip-poor-will

Trochilidae--Ruby-throated Hummingbird

Tyrannidae--Kingbird

Crested Flycatcher

Phoebe

Least Flycatcher

Hirundinidae--Purple Martins

Tree Swallow

Corvidae--Blue Jay
Mimidae--Brown Thrasher
Turdidae--Robin
Bombycillidae--Cedar Waxwing
Vireonidae--Red-eyed Vireo
Compothlypidae--Redstart
Icteridae--Baltimore Oriole
Thraupidae--Scarlet Tanager
Fringillidae--Eastern Goldfinch
Chipping Sparrow

Other birds which were seen and heard frequently in the territory and which very probably had nests in the region but were not located are:

Caprimulgidae--Nighthawk
Picidae--Flicker
Tyrannidae--Wood Pewee
Paridae--Black-capped Chickadee
Compothlypidae--Ovenbird
Fringillidae--Purple Finch

I. Spotted Sandpiper Nest

A. Location and Description--a fairly deep depression lined with grasses and beneath a small shrub on the beach in front of the Health Service.

B. Content and Fate

3 eggs--3 hatched--3 young left nest

II. Black-billed Cuckoo

- A. Location and Description--a loosely made platform of twigs in the central crotch of a small beech tree and about 3 feet from the ground.
- B. Contents and Fate
2 young and 1 egg when found--3 hatched--3 left nest

III. Whip-poor-will

- A. Location and Description--no nest construction whatever. The eggs were placed on the leaves in a slight hollow in a rather open woodland of aspen with a bracken ground cover.
- B. Contents and Fate
2 eggs--2 hatched--2 young left nest 2 days after hatching

IV. Ruby-throated Humming bird

- A. Location and Description--2 nests--1 in a maple tree 12 feet up--the other in a birch tree 17 feet up--both toward the end of a horizontal branch. Both nests were dainty cup-shaped nests of various soft vegetable fibers, plant down, and lichen held together with spider and caterpillar webs and saddled on the limb.
- B. Contents and Fate
2 eggs in each nest--4 hatched--3 young left nest

V. Kingbird

- A. Location and Description--4 nests found in red maple, birch, and oak trees. The nests were of fine twigs lined with what appeared to be cotton from an old mattress, a few horsehairs, and fine rootlets. In one nest about 6 feet of string was used and in another, a piece of cord.

All the nests were in an open tree usually on a roadway or other open place. The lowest one was 7 feet up and the highest, 16 feet from the ground. The location in the tree varied from one placed against the trunk to one placed on a horizontal branch about 5 feet from the trunk.

B. Contents and Fate

11 eggs in 3 nests--8 hatched--8 left nest

3 young from fourth nest

VI. Crested Flycatcher

A. Location and Description--in a bird box 7 feet up on pole--of leaves, grasses, bark, and a cast-off snake skin.

B. Contents and Fate

4 young hatched--4 young left nest

VII. Least Flycatcher

A. Location and Description--All 6 of the nests found were located in a deep central crotch of a small hardwood tree or on a horizontal limb with limbs growing up around them. The nests were neat, compact, cup-like structures of grasses, birch bark, and other bark fibers held together by cocoon fibers and spider webs and lined with fine grasses, plant down, and an occasional feather. The lowest nest found was about 7 feet from the ground and the highest 15 feet.

B. Contents and Fate

3 eggs in 1 nest--3 hatched--3 young left nest

10 young matured from 3 other nests

VIII. Phoebe

- A. Location and Description--nest of grasses and mud located at the peak of the roof of the aquarium directly under the eaves.
- B. Contents and Fate--unknown

IX. Purple Martins

- A. Location and Description--30 nests located in two 16-room martin houses on lake shore. The rooms were carpeted with a few twigs, pine needles, and feathers.
- B. Contents and Fate
Number of eggs unknown--17 unhatched eggs found
43 young banded--8 young escaped before banding
- C. Banding Record

1. From west house--13 banded on July 26, 1940
39-267665 to 39-267675 inclusive
40-254612 and 40-254613
2. From east house--30 banded on July 25, 1940
40-254601 to 40-254611 inclusive
40-254631 to 40-254650 inclusive

X. Tree Swallow

- A. Location and Description--3 nests found in bird houses, 2 on posts, 1 on a tree, the height varying from 4 feet to 7 feet. A mat of pine needles containing a few feathers was placed in the bottom of the box.
- B. Contents and Fate--unknown

XI. Blue Jay

Why the dates?

A. Location and Description--a bulky nest of twigs lined with rootlets--11½ feet up in a compound crotch of a beech tree in a rather dense thicket away from human habitation.

B. Contents and Fate

4 eggs--3 hatched--3 young taken from nest

XII. Brown Thrasher

Why no date?

A. Location and Description--nest of leaves, grasses, twigs, and rootlets in grape vines on Vertebrate Laboratory.

B. Contents and Fate

Estimated 4 young left nest--?

XIII. Robin

A. Location and Description

15 nests known to be inhabited this year--9 empty ones
3 nests in oak trees, 2 in maples, 9 in birches, 1 in cherry, 8 on top of posts, logs, or wooden frames of garage, laboratory, and trellises.

All the nests found were made of coarse grasses and small plant stems cemented together with mud and lined with fine grasses. The lowest nest was 2 feet from the ground; the highest one, about 25 feet.

B. Contents and Fate

11 eggs in 3 nests--6 hatched and matured

23 young matured from 11 other nests

1 nest with 1 young and 2 eggs --young hatched on Aug. 15, '40

XIV. Cedar Waxwing

A. Location and Description--13 nests observed--7 in maple trees, 2 in birch trees, 3 in oak trees, and 1 in a white pine--all were near open roadway or other open place. The nests were all made of sticks, small rootlets, grass, and string. The waxwings were observed getting material from the diving board mat and from abandoned oriole nests. The nests averaged 12 to 13 feet from the ground--the lowest being 8 feet up and the highest being 25 feet up. The location varied from the central branching part of the tree to 10 feet out on a horizontal branch.

B. Contents and Fate

35 eggs in 9 nests plus 2 cowbird eggs

24 eggs hatched--15 young left nests

XV. Red-Eyed Vireo

A. Location and Description--Of 8 nests, 6 were in small maple trees and 2 in small oak trees. The nests were all graceful pendulous nests of cedar and birch bark held together with spider cocoons and beautifully draped with white birch bark. All of the nests were well out toward the end of the limbs to which they were attached and varied from 6 to 15 feet in height.

B. 11 vireo eggs--8 eggs hatched--4 young left nests

9 cowbird eggs--5 eggs hatched--3 young left nest

XVI. Redstart

A. Location and Description--in Manville between cabins 20 and 22--placement in tree not known

B. Contents and Fate

Number of eggs unknown--4 young left nest

XVII. Baltimore Oriole

A. Location and Description--Of the 7 nests observed, 6 were in aspen trees and 1 in a birch tree. The height from the ground varied from 20 to 35 feet. All of the nests were well up toward the tops of the trees hanging rather perilously from the small branches. The nests were made of grasses, string, colored thread, horse hair, plant stems and lined with plant down. The nest is a skillfully woven pendulous nest which is larger at the bottom than at the top and is deeper than it is wide.

B. Contents and Fate

Number of eggs unknown--10 young from 4 of the nests

XVIII. Scarlet Tanager

A. Location and Description--The nest was a flimsily built one of sticks lined with fine rootlets placed 16 feet up in an oak tree, 17 feet $3\frac{1}{2}$ inches from the trunk. The nest was on a horizontal limb near the end at a fork of the limbs. The sky could be seen through the nest when observed from below.

B. Contents and Fate

2 scarlet tanager eggs--1 hatched--1 young left nest

1 cowbird egg--did not hatch

XIX. Goldfinch

A. Location and Description--2 nests both in maple trees-- both close to end of horizontal branches, one about 14 feet from the ground, the other one about 17 feet up. The nest is a well-constructed nest, cup-shaped, of grasses, bark fibers and lined with plant down.

B. Contents and Fate

12 eggs--4 broken--6 hatched--6 young still in nests

XX. Chipping Sparrow

A. Location and Description--3 nests, two of them 4 feet up in maple and white pine trees; the third about 30 feet up in the top of a white birch tree. The nest is a light-weight nest of grasses lined with plant fibers and horse hair. The nest in the pine tree was set on top of the branch, but the one in the birch tree was in a crotch.

B. Contents and Fate

Number of eggs unknown--8 young from 2 nests

SUMMARY OF ALL NESTS

Number of families represented-----	15
Number of species represented-----	20
Total number of nests inhabited this year-----	102
Number of nests containing eggs when found-----	35
Number of eggs in those 35 nests-----	109
Number of eggs hatching in same 35 nests-----	70
Number of unhatched eggs in same 35 nests-----	39
Number of young not surviving-----	12
Number of young to leave the 35 nests-----	50
Number of young still in nest 8/12/40-----	8
Number of nests from which young matured-----	82
Number of young leaving those 82 nests-----	165
Total number of nests containing young-----	85
Total number of young in same 85 nests-----	173
% of eggs hatching-----	64.2
% of eggs not hatching-----	35.8
% of young not surviving-----	17.1
% of young maturing-----	71.4
% of young still in nest-----	11.4
% of eggs which developed into successful fledglings--	45.9

