REPORT

# 1968 BALD EAGLE NESTING SURVEY IN CENTRAL SASKATCHEWAN

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## INTRODUCTION

The survey reported herein was carried out by the authors under the sponsorship of the Canadian Wildlife Service, and of the Biology Museum of the University of Saskatchewan in Saskatoon.

Pages 7 to 12 will be reproduced separately for distribution to individuals interested in this work.

Included as part of this report are twelve maps on the scale 1:250,000, marked with flight routes and nest sites. (not received with report)

## RATIONALE

In its original conception, this survey was to cover the area bounded by Pinehouse Lake, the Manitoba border, the Churchill river and the south edge of the precambrian outcroppings. An examination of a map of the area shows that a complete survey, that is the flying of grid lines to attempt to find all nests in the region, would be an extremely time consuming operation. In addition, over much of the area, which is low and swampy, and contains very unproductive lakes, such a procedure would be a waste of time. Our decision was to survey the shores of major lakes and rivers in the area, and to do so along routes which were economical of our flying time, and which could be repeated in future years to determine the stability or otherwise of the eagle population in this area.

For our last flight out of La Ronge, we were faced with a choice of three possibilities. We could fill in the area left uncovered between Lac La Ronge and Pelican Lake, we could explore Pinehouse Lake, or we could strike out into new territory outside the originally defined area. Because no fuel was available at Pinehouse Lake, and because a flight there would have taken us over an area we had already examined, we decided against going there. Of the two remaining possibilities, a flight to the Foster Lakes seemed to hold the most promise for nest finding. In addition, we were assured of being able to get fuel and overnight accommodation there. The results of this flight are listed elsewhere in this report.

Throughout this survey, it was our intention to band young bald eagles at every other active nest found. Disturbance at the remaining nests was limited at the most to three or four flybys at a distance of thirty-plus yards. Our banding visits were kept as short as possible (usually 40 to 60 minutes), and when we were finished, we always moved completely out of the nest area immediately. In one case only, (nest #34), we climbed the nest tree to find that the sole nestling was too small to band.

We found flying before 9:30 A.M. and after 6:00 P.M. to be unprofitable because of light conditions.

## SUGGESTIONS AND RECOMMENDATIONS

We hope that this survey may be repeated in 1969, as we will then be able to determine two important things--the relative number of nests used two years in a row, and the effect of banding disturbance on this figure. As pointed out elsewhere in this report, we have fairly large samples to work with.

Perhaps the most useful extension of this year's work would be an aerial survey in May, before the trees are foliated. This would serve two purposes. It would enable us to determine how many territories are active early in the nesting period, and coupled with a later survey, how many nests fail in the interim, and it would allow us to locate nests which would be hidden by a canopy of leaves later in the year.

If the survey is to be repeated without much extension, it would be well to leave out most of the area covered on flight #2, and spend the time available west of Pelican and Jan Lakes or at Kipahigan or Sisipuk Lakes.

If it were possible to repeat the survey, and extend it, the following are suggested additional areas, in order of preference:

1. The area bounded by Lac La Ronge and Wappawekka Lake on the West, by Pelican, Jan and Deschambault Lakes on the East, by the Churchill River on the North and by the southern limit of Precambrian outcroppings on the South. An attempt to examine the shore of the larger lakes in this area

should be made, but it is likely not worth a very detailed survey.

2. Pinehouse Lake. So far this is "terra incognita," except for a few nest locations which have been suggested to us. It should be possible to arrange for a small gas cache to be left there previous to the flight, and for accommodation at a fishing camp.

3. An area in Manitoba, just east of what we covered this year. In particular, we were told that Sisipuk Lake would be a good place. The power line from north of Flin Flon to Sherridan should be checked entirely, as there may be in excess of twenty osprey nests along it.

4. The whole large region between Cree and Foster Lakes and the Reindeer River and Lake. There may well be pockets of quite large population density in this area. One could hope to find many more golden eagle aeries if this area was explored.

5. The very large region around Lake Athabaska and the Fond du Lac River. This holds great potential, as demonstrated in R. W. Nero's book,[1] and as shown by the large number of nests which Frank Heidelbauer has found.[3]

The fairly high populations of bald eagles which we found in several areas, particularly on Besnard Lake, (seven active and three empty nests on or near it) would provide excellent opportunities for intensive studies of the species. From our own experience, and from reading the literature, we think that the following would be good projects:

1. We felt, throughout our survey this year, a lack of information about the movements of adult eagles on their territories. Many times we could not decide whether a certain adult bird which we saw one half or three quarters of a mile from an active nest belonged with that nest. In addition, the total absence of adults from the vicinity of a nest containing young may or may not be a normal occurrence. One way of examining questions like this is by the use of radio tracking techniques. It is likely possible to live capture the adult birds on their territories, and label them with lightweight transmitters. Tracking could be automatic or manual (in the sense that readings of directions would be manually recorded).

2. We found fishing lures in two nests. Several residents of the area suggested to us that the eagles were living, at least in part, on dead or dying fish which they pick up from the water surface. Many fish escape being landed by anglers, only to die of their wounds or because they are unable to feed when hampered by a lure hooked in the mouth or throat. To estimate the importance of these angler-injured fish to the eagles, two approaches are possible. One might make direct observations of the hunting habits of the birds, or one might try to correlate population density and nesting success with angling pressure in the area. The productivity of the lake or lakes concerned would need to be taken into account, but this information is available from the DNR fisheries researchers.

The latter approach would take many years of data collection.

3. The colour banding of nestlings should be considered. Large, brightly coloured bands on the left tarsi might be sufficiently visible at a distance that they would be noticed by casual observers, especially on migration and at their wintering grounds. This technique could accelerate the acquisition of migration data for these birds, and could provide a start to the study of territory establishment by young birds.

If it is possible to live-trap adult birds, dyeing their heads and tails could lead to migration data, and to information about their movements on their summer range.

## EXPENSES

We include here an account of the expenses for the survey, as a possible assistance to the planning of similar trips in the future.

| | | | |
|---|---|---|---|
| (1) | Rental of boat and motor and purchase of gasoline for same | | $ 43.05 |
| (2) | Hiring of a guide at Jan Lake | | 4.00 |
| (3) | Aircraft rental | | 1,951.66 |
| (4) | Groceries and meals in restaurants | about | 120.00 |
| (5) | Gasoline for the car | | 36.00 |
| (6) | Miscellaneous | over | 20.00 |
| | Total | | $2,174.71 |

| | | |
|---|---|---|
| (1) | Canadian Wildlife Service contract | 1,600.00 |
| (2) | U. of S. Biology Museum grant | 500.00 |
| (3) | Out of the authors' pockets | 74.71 |
| | Total | $2,174.71 |

## BALD EAGLE OBSERVATIONS

### I. Introduction

A survey of the bald eagle population in parts of central Saskatchewan was made from July 1 to July 19, 1968. Most of the survey was conducted in a region bounded by Besnard Lake on the west, the Manitoba border on the east, the Churchill River on the north, and the southern limit of Precambrian outcropping on the south. Additional work was done at the Foster Lakes, Cree Lake, and in the Saskatchewan portion of the Cumberland Marsh. All study areas except the latter were covered with mixed coniferous and deciduous trees. In the Marsh, the stream levees bear white spruce--hardwoods forest. Throughout the area, there is trapping as well as commercial and sport fishing. Much of the study area is inaccessible by road.

### II. Methods

Most of the survey was carried out from a fixed wing, pontoon equipped aircraft. Some nests near roads were reached by canoe or motorboat. The aerial searches were flown along lake shores and rivers, in order to establish routes which may be easily retraced in future years to obtain a continuing index of the eagle population. No attempt was made to completely survey any region. There were three observers and a pilot for the first six flights and two observers and a pilot for the last four.

Productive and empty bald eagle, golden eagle and osprey nests were recorded. Birds not at productive nests were noted.

Young bald eagles were banded at every other nest except where landing of the aircraft or tree climbing was not feasible. When this was the case, young in two consecutive nests were usually banded. The remaining nests were left undisturbed except for flybys to count the number of nestlings. Only one observation was made of each nest. Climbing spurs and an adjustable safety rope and belt were used to climb the trees when necessary.

III. Terminology

Because we share with Postupalsky[2] concern over the difficulty of making unambiguous comparisons of our own results with those published by others, we define our terms closely and break our observations down into many categories.

(1) A productive nest is a nest containing young. This usage is justified because, with one exception, all nestlings were five to ten weeks old at the time of observation.

(2) An active nest is one containing very small young.

(3) Where two or more nests, perhaps one of them productive, appeared within a circle of one mile diameter, we considered that they were on one territory. This size was calculated from our observations of the minimum distance between two productive nests.

(4) Adult birds seen within one half mile of a nest were counted as being at the nest. In a few cases it appeared that adults seen more than one half mile from productive

nests belonged to those nests, and were so counted.

IV. Results and Discussion

A total of 142 bald eagle nests were observed in 129 territories. Eighty-two of these nests contained a total of 132-139 young ($\bar{X}$ = 1.6 - 1.7), and sixty-five young in 36 nests were banded. Further data are shown in Table A. We believe that fewer young were counted than were present in some nests, because of the difficulty in counting nestlings from the air. There was some doubt in the nestling count in seven of the 45 which were not climbed.

In 1967, Gerrard and Whitfield[3] banded bald eagles at 18 nests in Saskatchewan, and in 1968 each nest was revisited. The bald eagle territories we have observed to date may be divided into several categories:

(1) Nest blown down at the time the young were banded in 1967. --1

(2) Nests no longer standing in July, 1968. One had been there in early spring, according to a trapper in the area. --3

(3) Productive and young banded in 1967, and tree standing but nest empty in 1968. --4 or 5*

(4) Productive and young banded in 1967, productive and undisturbed in 1968. --3 or 4*

(5) Productive and young banded both years. --6

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*One nest was so completely hidden that we were unable to determine, from the air, if it was occupied. An adult was nearby.

(6) Unproductive in 1967 and 1968. --4

(7) Nest empty in 1967; productive and young banded this year. --3

(8) New to us in 1968 and undisturbed. --43

(9) New to us in 1968 and young banded. --27

(10) New to us in 1968 and unproductive. --38

We believe that we will have large enough samples to be able to draw conclusions about the effect of banding disturbance in one year only, if these territories are surveyed again in 1969.

## GOLDEN EAGLE OBSERVATIONS

Six productive golden eagle aeries on cliffs and one empty cliff nest which likely belonged to this species were found. Seven young were banded at four nests (2, 2, 2, and 1); the other two nests contained 2, and 1 or 2 young. The latter nest might have been that of a bald eagle; no adults were seen nearby, and our rapid flight past the cliff made positive identification of the almost fully feathered nestlings impossible. We note that these are the first reported golden eagle aeries in central Saskatchewan.

## OSPREY OBSERVATIONS

Five active nests and five adults not at nests were counted. One nest at which we banded young in 1967 was active, and the other was active on July 11 but empty on July 18, too early for young birds to have fledged. One of the active nests

was on a power line pole between Mari Lake and Sherridan, Manitoba. The rest of the line was not checked this year. However, in 1967, Dick Baker flew about twenty miles along this line and counted eleven nests, at least seven of which were occupied by osprey.

## ACKNOWLEDGEMENTS

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## REFERENCES

1. Nero, R. W. 1963. Birds of the Lake Athabaska Region. Sask. Nat. Hist. Soc.

2. Postupalsky, Sergej. 1968. Bald Eagle and Osprey Nesting Studies - Recommended Methods and Terminology. Unpublished.

3. Gerrard, J. M., and D. W. A. Whitfield. 1967. Bald Eagle Banding in Northern Saskatchewan (1967). Blue Jay, 25: 177.

TABLE A

| | | | |
|---|---|---|---|
| (1) | Productive territories | (a) 1 nestling | 31 |
| | | (b) 2 nestlings | 38 |
| | | (c) 3 nestlings | 6 |
| | | (d) 1 or 2 nestlings | 7 |
| | | Total | 82 |
| | Territories containing one supernumerary nest | | 4 |
| | Territories containing two supernumerary nests | | 1 |
| (2) | Unproductive territories | (a) no adults present | 32 |
| | | (b) 1 adult present | 8 |
| | | (c) 2 adults present | 6 |
| | | (d) 1 or 2 adults present | 1 |
| | | Total | 47 |
| | Territories containing two nests | | 7 |
| (3) | Adults not at nests | singles | 57 |
| | | pairs 2 x 10 = | 20 |
| | | Total | 77 |
| (4) | Immatures | singles | 32 |
| | | pairs 2 x 4 = | 8 |
| | | Total | 40 |

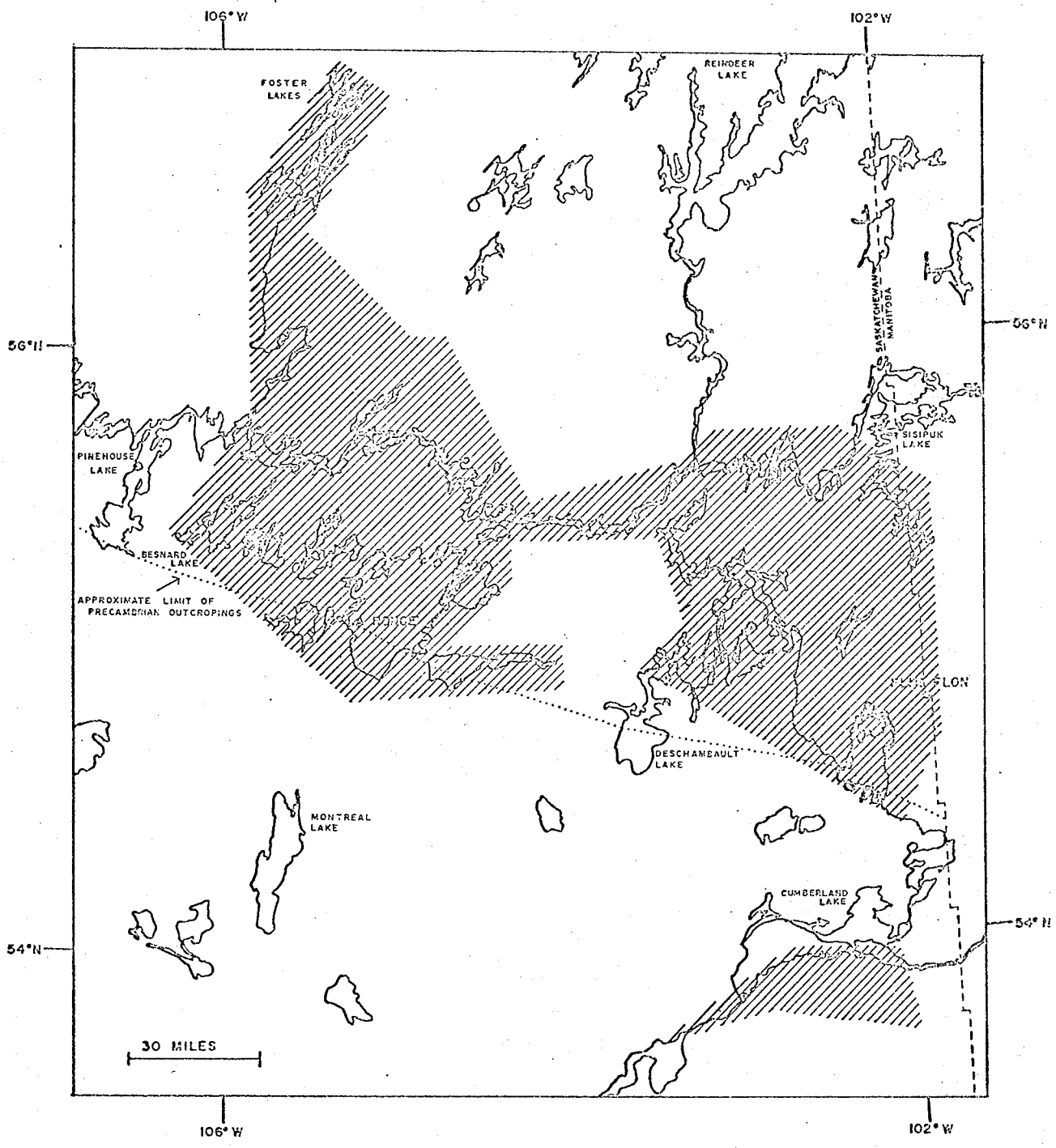


Figure 1. The shaded areas are approximately those covered during the aerial survey.

## MAP SYMBOLS

| | |
|---|---|
| □ | productive bald eagle nest |
| ▣ | empty bald eagle nest |
| O | active osprey nest |
| ◉ | empty osprey nest |
| X | productive golden eagle nest |
| ▽ | productive bald eagle or osprey nest |
| ▼ | empty bald eagle or osprey nest |
| ⊠ | bald eagle or golden eagle nest |
| △ | bald eagle nest which may or may not have been in use |
| A | adult bald eagle not at a nest |
| I | immature bald eagle |
| P | adult osprey, not at a nest |
| GE | golden eagle flying not near a nest |
| * | reported active 1968, not seen by us |

## TABLE ABBREVIATIONS, SYMBOLS AND NOTES

* nestlings banded in 1968

### Maps

| | |
|---|---|
| AL | Amisk Lake |
| CL | Cormorant Lake |
| CrL | Cree Lake |
| FL | Foster Lake |
| GL | Green Lake |
| GR | Geikie River |
| IALC | Ile-a-la-Crosse |
| LLR | Lac La Ronge |
| PH | Pasquia Hills |
| PN | Pelican Narrows |
| PA | Prince Albert |
| W | Wappawekka |

### Tree Species

| | |
|---|---|
| AP | aspen poplar |
| BP | balsam poplar |
| BS | black spruce |
| WS | white spruce |
| WB | white birch |
| T | tammarack |
| JP | jackpine |
| L | live |
| D | dead |

### Visibility

| | |
|---|---|
| P | poor |
| F | fair |
| G | good |
| E | excellent |

Climbing difficulty is graded from 1 (very easy), to 5 (dangerous).

The nest locations are given by ten minute quadrants as used for banding schedules.

All nest heights and distances from the water are estimates.

An entry "Banded 67" indicates that the nest was empty in 1967.

Nest areas are minimums.

TABLE B, THE FLIGHTS

| Colour Code | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] * |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Flight Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Date | July 3 | 3 | 4 | 6 | 8 | 9 | 11 | 12 | 13&14 | 19 | 11&12 |
| Duration (hours and minutes) | 3:10 | 3:00 | 5:40 | 1:50 | 4:00 | 5:25 | 3:25 | 4:55 | 6:20 | 1:40 | |
| Distance Flown (Miles) | 245 | 240 | 405 | 120 | 240 | 375 | 220 | 340 | 445 | 155 | |
| Nest Numbers | 6-14 | 15-20 | 21-35 | 41-47 | 48-65 | 66-71<br>73-80 | 82-91 | 92-106<br>108,109 | 112-131 | 132-137 | 138-147 |
| BALD EAGLES | | | | | | | | | | | |
| 1) Productive territories | 6 | 1 | 13 | 4 or 5 | 13 | 7 | 6 | 9 | 10 | 3 | 4 |
| 2) Total number of young | 9 | 1 | 19-20 | ≥7 | 22-24 | 13 | 12-13 | 13 | 15-16 | 3 | 8 |
| 3) Empty territories | 3 | 5 | 1 | 2 or 3 | 4 | 4 | 4 | 7 | 6 | 3 | 4 |
| 4) Young banded/no. of nests | 5/3 | 1/1 | 9/5 | 4/2 | 11/6 | 10/4 | 5/2 | 7/5 | 8/5 | 0 | 0 |
| 5) Adults not at nests | 4 | 3 | 14 | 1 | 12 | 11 | 7 | 9 | 7 | 0 | 3 |
| 6) Adults at empty nests | | | 1 | | 2 | | | 4 | | | |
| 7) Immatures | 1 | 1 | 11 | 0 | 6 | 10 | 1 | 4 | 3 | 1 | 2 |
| GOLDEN EAGLES | | | | | | | | | | | |
| 1) Productive nests | | | | | | 1 | | 1 | 3 | | |
| 2) Total number of young | | | | | | 2 | | 2 | 5 | | |
| 3) Young banded/no. of nests | | | | | | 2/1 | | 2/1 | 3/2 | | |
| 4) Adults not at nests | | | | | | | | 1 | 1 | | |
| OSPREY | | | | | | | | | | | |
| 1) Active territories | 1 | | | | | 2 | | | | | 1 |
| 2) Empty territories | | | | | 1 | | | | 1 | | |
| 3) Total number of young | ≥1 | | | | | 3-4 | | | | | 1-2 |
| 4) Adults not at nests | | 1 | | 1 | | 1 | | | | | |
| BALD OR GOLDEN EAGLES | | | | | | | | | | | |
| 1) Productive nests | | | | | | | | | 1 | | |
| 2) Empty nests | | | | | | | | 1 | | | |
| BALD EAGLE OR OSPREY | | | | | | | | | | | |
| 1) Productive nests | | | 1 | | | | | | | | |
| 2) Empty nests | | | | | 1 | | | | | | |
| Productive Bald Eagle territories per hour of flying | 1.9 | 0.3 | 2.3 | 2.1-2.6 | 3.3 | 1.3 | 1.8 | 1.8 | 1.6 | 1.8 | |

* This flight was a DNR fire patrol. Davis was invited as an observer, and some time was spent looking for nests.

TABLE C, THE NESTS

| No. | Date | No. young | Banded 67 | Banded 68 | No. Ads | Nest age | Location | Map | Climb. diff. | Tree Sp. | Nest Hgt. (ft) | Dist. from water (yds) | Location in tree | Visibility air | Visibility water | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | July 1 | 2 | 1 | * | 1 | 2 | 534-1051 | PA | 1 | LWS | 45 | 10 | 15'from top | P | P | |
| 2 | 1 | 2 | | | 2 | | 542-1040 | W | | AP | 30 | 0 | 4/5 way up | | E | likely new in 67 |
| 3 | 2 | 2 | 2 | * | 1 | 3 | 544-1025 | AL | 2-3 | DWS | 34 | 7 | top | | F | |
| 4 | 2 | 0 | 2 | | 0 | 3 | 544-1025 | AL | 2-3 | DAP | 30 | 2 | top | G | G | |
| 5 | 2 | 1 or 2 | | | 2 | | 544-1024 | AL | 4-5 | LB | 52 | 7 | 20'from top | | E | best seen from west |
| 6 | 3 | 0 | E | | 1 | 2 | 551-1020 | PN | | LWS | | | | G | | |
| 7 | 3 | 0 | E | | 0 | 2 | 551-1020 | PN | | AP | | | | P | | |
| 8 | 3 | 1 | | * | 2 | | 552-1020 | PN | 2 | LAP | 30 | 3 | 6'from top | G | E | |
| 9 | 3 | 1 | | | 0 | | 553-1020 | PN | | DAP | | 2-3 | top | E | | |
| 10 | 3 | 2 | 1 | * | 1 | 2 | 552-1021 | PN | 2 | LAP | 46 | 20 | 20'from top | F-G | | |
| 11 | 3 | 1 | | | 1 | | 545-1022 | AL | | AP | | | | G | | |
| 12 | 3 | 2 | | * | 2 | | 551-1022 | PN | 3 | LJP | 54 | 175 | 16'from top | P | | |
| 13 | 3 | 0 | 1 | | 0 | 2 | 551-1023 | PN | | LJP | 40 | 15 | near top | E | G | |
| 14 | 3 | 1 or 2 | | | 1 | | 550-1021 | PN | | AP | | 400 | | F | | |
| 15 | 3 | 0 | | | 0 | 4 | 543-1015 | CL | | | | | | P-F | | |
| 16 | 3 | 1 | E | * | 2 | 2 | 543-1020 | AL | 1 | LAP | 40 | 15-20 | near top | G | G | |
| 17 | 3 | 0 | | | 0 | 2 | 542-1020 | AL | | LWS | | | | G | | |
| 18 | 3 | 0 | E | | 2 | 3 | 542-1022 | AL | 1 | LWS | | 10-20 | top | G | F | |
| 19 | 3 | 0 | | | 0 | | 543-1021 | AL | | LB | | 30 | canopied | F | | |
| 20 | 3 | 0 | 2 | | 0 | 2 | 543-1021 | AL | 2-3 | LAP | 48 | 35 | canopied | G | G | |
| 21 | 4 | 2 | | | 1 | | 553-1024 | PN | | AP | | 13 | 5/6 way up | G | | |
| 22 | 4 | 2 | | * | 2 | | 553-1025 | PN | 2-3 | AP | 40 | 25 | | P-F | | |
| 23 | 4 | 1 | | | 0 | | 553-1025 | PN | | DAP | | | | | | |
| 24 | 4 | 2 | | * | 2 | | 553-1030 | PN | 3 | JP | 50 | 125 | near top | G | P | |
| 25 | 4 | 1 or 2 | | | 1 | | 553-1030 | PN | | AP | | 10 | | | | |
| 26a | 4 | 0 | | | 1 | | 553-1030 | PN | | | | | | E | | on side of hill.- two nests about 3/4 mile apart |
| b | | 0 | | | | | | | | | | | | F-G | | |
| 27 | 4 | 1 | | | 1 | | 553-1031 | PN | | DAP | | 900 | | G | | |
| 28 | 4 | 2 | | * | 1 | | 552-1032 | PN | 1 | LWS | 50 | 10 | 18'from top | G | G | |
| 29 | 4 | 2 | | * | 2 | | 552-1032 | PN | 1 | WS | 60 | 55 | top | | F | |
| 30 | 4 | 2 | | | 2 | | 551-1032 | PN | | AP | | | | E | | |
| 31 | 4 | 1+egg | | * | | | 551-1031 | PN | 1-2 | DAP | | 20 | 4/5 way up | E | E | |
| 33 | 4 | 1 | | | 1 | | 552-1030 | PN | | DAP | | 80 | top | | P-F | |
| 34 | 4 | 1 | | | 1 | | 551-1025 | PN | 1-2 | LWS | 48 | 70 | top | E | G | |
| 35 | 4 | 1 | | | 1 | | 550-1024 | PN | | DAP | | 400 | | P | | |
| 36 | 5 | 1 | 1 | * | 1 | 2 | 545-1020 | AL | 2-3 | LAP | 42 | 70 | near top | | P | |
| 37 | 5 | 2 | | | 2 | | 545-1024 | AL | | DJP | | 125 | 12'from top | G | G | on hillside |
| 39a | 5 | 0 | | | 2 | | 545-1025 | AL | | LWS | 65 | 55 | | | G | |
| b | | 0 | | | | 1 | | | | | | | | | F-G | best seen from north |
| 41 | 6 | 0 | 1 | | 0 | 2 | 550-1030 | PN | 2 | DAP | 55 | 20-30 | | G | G | |

Table C, Cont'd.

| No. | Date | No. Young | Banded 67 | Banded 68 | No. Ads | Nest age | Location | Map | Climb. diff. | Tree Sp. | Nest Hgt (ft) | Dist. from water (yds) | Location in tree | Visibility air | Visibility water | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 42 | July 6 | ? | 2 | | 1 | 2? | 550-1030 | PN | | LAP | | 100-200 | canopied | P | P | unable to tell if occupied |
| 43a | 6 | 2 | E | * | 1 | 2 | 550-1030 | PN | 2-3 | LAP | 60 | 40 | near top | F-G | | |
| b | | 0 | E | | | 2 | | | | DAP | | | | | | |
| 44 | 6 | 2 | | | 1 | | 545-1030 | AL | | AP | | | | G | | |
| 45 | 6 | 1 | | | 2 | | 545-1031 | AL | | LWS | | 15 | 15'from top | G | | |
| 46 | 6 | 0 | | | 0 | | 550-1031 | AL | | LAP | | 50 | | E | | |
| 47 | 6 | 2 | 2 | * | 2 | 2 | 550-1030 | PN | 2 | LAP | 46 | 440 | near top | F-G | P | canopied, low area ¼ mile from shore |
| 49a | 8 | 2 | | | 2 | | 551-1052 | LLR | | LAP | | 50 | 15'from top | F-G | | |
| b | | 0 | | | | | | | | | | | | G | | |
| 50 | 8 | 3 | | * | 2 | 1 | 551-1054 | LLR | 2 | LAP | 55 | 65 | 11'from top | F-G | | |
| 51 | 8 | 2 | | | 1 | | 551-1054 | LLR | | LAP | | | | G | | |
| 52 | 8 | 1 | | | 1 | | 552-1054 | LLR | | DAP | | 30 | 15'from top | | | |
| 53 | 8 | 2 | | * | 2 | 2 | 552-1054 | LLR | 2-3 | LAP | 70 | 150 | 15'from top | F-G | | best seen from north |
| 54 | 8 | 0 | | | | | 552-1054 | LLR | | DP | | | | G | | along a creek |
| 55 | 8 | 1 | | * | 2 | | 552-1054 | LLR | 1 | LJP | 45 | 3 | top | G | E | |
| 56 | 8 | 0 | | | | | 552-1060 | IALC | | LAP | | 25 | | | | |
| 57 | 8 | 0 | | | 2 | | 552-1060 | IALC | | DAP | | 20 | | G | | |
| 58 | 8 | 2 | | | 1 | | 552-1060 | IALC | | LAP | | 50 | near top | P-F | | canopied |
| 59 | 8 | 1 | | * | 2 | 2 | 552-1060 | IALC | 2 | LWS | 72 | 20 | 15'from top | G | | |
| 60 | 8 | 1 or 2 | | | 0 | 2 | 551-1060 | IALC | | LAP | | 30 | | P | | need to fly low |
| 61 | 8 | 2 | | | 1 | | 552-1061 | IALC | | JP | | 50 | | G | | |
| 62 | 8 | 1 | | * | 1 | | 552-1060 | IALC | 5 | DAP | 40 | 50 | 15'from top | F | | |
| 63 | 8 | 1 or 2 | | | 1 | | 553-1055 | LLR | | LAP | | 660 | | G | | on hill |
| 64 | 8 | 3 | | * | 1 | | 553-1055 | LLR | 2 | LJP | 40 | 8 | 10'from top | G | | |
| 65 | 8 | 0 | | | 0 | 2 | 552-1060 | LLR | | LWS | | 7 | 15'from top | G | | |
| 66 | 9 | 3 | | * | 2 | | 550-1050 | LLR | 2-3 | LAP | 45 | 80 | 15'from top | F | F | |
| 67 | 9 | 0 | | | 0 | | 550-1044 | LLR | | LJP | | 5 | | G-E | | |
| 68 | 9 | 0 | | | 0 | | 552-1035 | PN | | LAP | | 30 | | G | | |
| 70 | 9 | 1 | | | 2 | | 552-1033 | PN | | DAP | | 20 | | G | | |
| 71 | 9 | 2 | | * | 2 | | 553-1032 | PN | 2 | LWS | 64 | 150 | 13'from top | F | | |
| 73 | 9 | 1 | | | 2 | | 553-1032 | PN | | LAP | | 20 | 10'from top | | | |
| 74 | 9 | 3 | | * | 1 | | 553-1042 | LLR | 2-3 | LWS | 63 | 20 | top | G-E | P | |
| 77 | 9 | 1 | | | 1 | | 552-1045 | LLR | | LAP | | 50 | 10'from top | G | | |
| 78 | 9 | 0 | | | 0 | 2 | 551-1045 | LLR | | LAP | | 20 | 15'from top | G | | |
| 79 | 9 | 2 | | * | 1 | 2 | 551-1050 | LLR | 1-2 | LWS | 48 | 20 | 10'from top | E | P | |
| 80 | 9 | 0 | | | 0 | 2 | 551-1051 | LLR | | LWS | | 15 | 20'from top | G | G | |
| 81a | 10 | 0 | | | | 2 | 553-1044 | LLR | | LWS | 55 | 30 | top | | P | |
| b | | | | | | | | | | AP | | | | | | chopped down in '68 |
| 81.1 | 10 | 0 | | | 1or2 | 2 | 552-1045 | LLR | 2 | JP | 48 | 20 | | | G | |
| 82 | 11 | 1 or 2 | | | 0 | | 551-1050 | LLR | | LAP | | 35 | 3/4-7/8 tree height | G | | canopied |

Table C, Cont'd.

| No. | Date | No. Young | Banded 67 | Banded 68 | No. Ads. | Nest age | Location | Map | Climb. diff. | Tree Sp. | Nest Hgt. (ft.) | Dist. from water (yds) | Location in tree | Visibility air | Visibility water | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 83 | July11 | 2 | | * | 1 | 1 | 551-1043 | LLR | 2 | LAP | 32 | 10 | 10'from top | F-G | E | best seen from NW |
| 84 | 11 | 2 | | | 2 | | 551-1043 | LLR | | AP | | 30 | | F-G | | |
| 85 | 11 | 3 | | * | 1 | | 550-1044 | LLR | 2 | LAP | 35 | 10 | 3/4 way up | P-F | P | canopied |
| 86 | 11 | 0 | | | 0 | | 550-1044 | LLR | | WS | | | top | E | | |
| 87 | 11 | 2 | | | 1 | | 545-1043 | W | | LWS | | 0 | 4/5 way up | G | | |
| 88 | 11 | 0 | | | 0 | | 545-1042 | W | | WS | | | 4/5 way up | G | | |
| 89 | 11 | 0 | | | 1 | 2 | 545-1042 | W | | LWS | | | top | G | | |
| 90 | 11 | 0 | | | 0 | | 545-1042 | W | | LWS | | | | F | | nest falling down |
| 91 | 11 | 2 | | | 1 | | 545-1044 | W | | DSorJP | | 1 mile | | p | | |
| 92 | 12 | 1 | E | * | 1 | 2 | 551-1052 | LLR | 1 | LWS | 50 | 5 | top | G | F | |
| 93a | 12 | 1 | | * | 2 | 1 | 552-1052 | LLR | 5 | DAP | 52 | 15 | 15' from top | E | G | |
| b | | 0 | 1 | | | 2 | | | 1 | LWS | 50 | 70 | top | G-E | F | |
| 94 | 12 | 1 | | | 1 | | 552-1051 | LLR | | LAP | | 17 | 20'from top | F | | canopied |
| 96a | 12 | 0 | | | 1 | | 553-1052 | LLR | | DAP | | 80 | | F-G | | |
| b | | 0 | | | | | | | | DAP | | 15 | | | | |
| 97a | 12 | 2 | | * | 2 | | 553-1052 | LLR | 2 | LAP | 49 | 13 | 7'from top | G | G | |
| b | | 0 | | | | | | | | LAP | | 30 | | P | P | heavily canopied |
| c | | 0 | | | | | | | | LAP | | | | G | G | |
| 98 | 12 | 2 | | | 1 | | 553-1053 | LLR | | AP | | | | G | | |
| 99 | 12 | 2 | | * | 2 | | 553-1053 | LLR | 1 | AP | 39 | 90 | near top | G | | |
| 100 | 12 | 1 | | | 2 | | 553-1053 | LLR | | LAP | | 160 | | G | | canopied |
| 101 | 12 | 0 | | | 1 | | 553-1053 | LLR | | LAP | | 5 | near top | F-P | | |
| 102 | 12 | 0 | | | 0 | | 553-1054 | LLR | | LAP | | 100 | | G | | |
| 103 | 12 | 1+egg | | * | 2 | | 553-1055 | LLR | 2 | JP | 46 | 20 | top | G | F-G | |
| 104 | 12 | 0 | | | 0 | 2 | 554-1055 | LLR | | AP | | 100 | | P | | canopied |
| 105 | 12 | 0 | | | 0 | | 554-1054 | LLR | | AP | | 50 | | F | | canopied |
| 106 | 12 | 0 | | | 0 | | 554-1054 | LLR | | WS | | | top | G | | |
| 107 | 14 | 1 | | * | 1 | | 553-1052 | LLR | 2 | JP | | 20 | 4/5 way up | F-G | | |
| 108a | 12 | 0 | | | 2 | | 553-1052 | LLR | | WS | | | top | | | |
| b | | 0 | | | | | | | | LAP | | | | | | canopied |
| 109 | 12 | 2 | 2 | | 1 | 2 | 553-1050 | LLR | 5 | DAP | 45 | 250 | near top | E | F-P | |
| 112 | 14 | 1 or 2 | | | 0 | | 554-1053 | LLR | | DAP | | 200 | | G | | |
| 113a | 14 | 0 | | | 0 | | 555-1054 | LLR | | LAP | | 900 | | F-G | | canopied, in a creek valley |
| b | | 0 | | | | | | | | | | | | | | |
| 114 | 14 | 0 | | | 0 | | 560-1053 | FL | | LAP | | | | G | | canopied, high up on peninsula |
| 115 | 14 | 2 | | * | 1 | 2 | 560-1054 | FL | 2 | LP | 43 | 90 | 3/4 way up | F | P | |
| 117 | 14 | 1 | | | 1 | 2 | 562-1052 | FL | | Cliff nest | | 0 | | E | | |
| 119 | 14 | 0 | | | 0 | 3 | 563-1051 | FL | | | | | | G | | falling apart |
| 120 | 14 | 1 | | * | 2 | | 564-1052 | FL | 3-4 | LAP | 37 | 20 | near top | E | | |
| 121 | 14 | 0 | | | 0 | | 565-1050 | FL | | LAP | | 200 | | G | | |
| 122 | 15 | 2 | | | 1 | | 564-1052 | FL | | WS | | 0 | top | E | | |

Table C, Cont'd.

| No. | Date | No. young | Banded 67 | Banded 68 | No. Ads | Nest age | Location | Map | Climb. diff. | Tree Sp. | Nest Hgt. (ft) | Dist. from water (yds) | Location in tree | Visibility air | Visibility water | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 123 | July 15 | 1+egg | | * | 2 | | 564-1052 | FL | 1 | LJP | 22 | 7 | 2/3 way up | G | G | |
| 124 | 15 | 2 | | | 1 | | 563-1053 | FL | | | | | | E | | |
| 126 | 15 | 0 | | | 1 | 2 | 561-1051 | FL | | JP | | 0 | | E | | |
| 127 | 15 | 3 | | * | 2 | | 554-1050 | LLR | 1 | LWS | 64 | 70 | top | G | G | |
| 129 | 15 | 0 | | | 1 | 2 | 555-1043 | LLR | | DAP | | 80 | 4/5 way up | P-F | | |
| 131 | 15 | 2 | | | 0 | | 552-1045 | LLR | | LSorJP | | 10 | | G | | north end of island |
| 132a | 19 | 1 | 1 | | 1 | 2 | 534-1020 | PH | | DAP | 45 | 130 | 25'from top | G | | |
| b | | 0 | E | | | 2 | | | | | | | | G | | |
| 133a | 19 | 0 | E | | 0 | 2 | 535-1021 | PH | | AP | | | | G | | |
| b | | 0 | E | | | 2 | | | | LAP | | | | G | | |
| 134 | 19 | 0 | | | 0 | | 535-1021 | PH | | AP | | | | G | | |
| 135 | 19 | 1 | 1 | | 1 | 2 | 535-1022 | PH | | AP | 40 | 100 | 15'from top | G | | |
| 136 | 19 | 0 | | | 0 | | | PH | | | | | | P-F | | along a creek - north of #135 |
| 137 | 19 | 1 | | | 1 | | 534-1031 | PH | | DWS | | 1 mile | top | E | | |
| 138 | 11 | 0 | | | 0 | | 562-1045 | FL | | LJP | | | | E | | |
| 139 | 11 | 0 | | | 0 | | 563-1050 | FL | | DJP | | 10 | near top | E | | |
| 140 | 11 | 2 | | | 1 | | 564-1050 | FL | | JP | | 20 | 15'from top | F | | |
| 142 | 11 | 2 | | | 2 | | 575-1044 | GR | | JP | | 880 | | G | F | rocky hilltop |
| 143 | 11 | 0 | | | 2 | | 574-1055 | GR | | JP | 35 | 15 | 20'from top | | | |
| 144 | 11 | 2 | | | | | 574-1061 | CrL | | | | | | | | |
| 145 | 12 | 0 | | | 2 | 3 | 573-1062 | CrL | | JP | | | | E | | |
| 146 | 12 | 2 | | | 1 | 4 | 573-1061 | CrL | | | | | | E | | |
| 147 | 27 | 0 | | | 1 | | 542-1072 | GL | | DAP | | 50 | | G | | dilapidated nest |

Table C, Cont'd.

| No. | Date | No. young | Banded 67 | Banded 68 | No. Ads | Nest age | Location | Map | Climb. diff. | Tree SP. | Nest Hgt. (ft) | Dist. from water (yds) | Location in tree or cliff | Visibility air | Visibility water | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **GOLDEN EAGLES** | | | | | | | | | | | | | | | | |
| 72 | July 9 | 2 | | * | 0 | | 553-1030 | PN | 1 | Cliff | nest | 25 | 12'from top | P | P | cliff faces NE |
| 76 | 9 | 2 | | * | 1 | 7 | 554-1043 | LLR | 3 | Cliff | 50 | 10 | 20'from top | P | G | cliff faces E-must descend by rope |
| 116 | 14 | 1 | | * | 1 | | 561-1054 | FL | 1 | Cliff | | 80 | | G | | Cliff faces E-nest under overhang |
| 118 | 14 | 2 | | | 1 | | 563-1052 | FL | | Cliff | | | | F | | Cliff faces SSE |
| 125 | 15 | 2 | | * | 0 | | 562-1051 | FL | 3 | Cliff | 50 | 90 | 20'from top | F-G | | Cliff faces WSW |
| **GOLDEN OR BALD EAGLES** | | | | | | | | | | | | | | | | |
| 95 | 12 | 0 | | | 0 | | 553-1052 | LLR | | Cliff | | 0 | | G | | faces west |
| 128 | 15 | 1 or 2 | | | 0 | | 554-1045 | LLR | | Cliff | | | | F-G | | no landing spot nearby-faces W |
| **OSPREY** | | | | | | | | | | | | | | | | |
| 5.1 | 2 | | | | 1 | 2 | 545-1015 | CL | | Power pole | | | top | | | in use July, 1967 |
| 40.1 | 5 | 1+ | 2 | | 2 | | 545-1024 | AL | 5 | DWS | 36 | | top | | | see from road-easily visible |
| 68 | 9 | 2 | | | 1 | | 551-1043 | LLR | | Tower | 70 | 660 | top | E | | |
| 76.1 | 9 | 1+ | | | | | 553-1044 | LLR | | Tower | | | top | E | | |
| 130 | 15 | 0 | | | 0 | | 554-1043 | LLR | | Tower | | | top | E | | |
| 131.1 | 19 | 0 | 1 | | 0 | 3 | 534-1055 | PA | 5 | DWS | 45 | | top | G | E | likely was in use July 12-ads present |
| 141a | 11 | 2+ | | | 2 | 32 | 564-1052 | FL | 5 | DT | | | top | F-G | E | too dangerous to climb |
| b | 0 | | | | | | | | | | | | | | | |
| **BALD EAGLE OR OSPREY** | | | | | | | | | | | | | | | | |
| 32 | 4 | 2 | | | 0 | | 552-1030 | PN | | DAP | | 30 | top | E | | |
| 38 | 5 | 0 | | | 0 | | 545-1025 | AL | 1 | LWS | 60 | 15 | top | G | G | |
| 48 | 8 | 0 | | | 0 | | 550-1052 | LLR | | S | | 880 | top | | | |
| 75 | 9 | 0 | | | 0 | | 552-1043 | LLR | | WS | | 440 | top | | | |