BEAVERHILL BIRD OBSERVATORY 1985 ANNUAL REPORT

Edited by Geoff Holroyd, Canadian Wildlife Service

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The year 1985 was the Beaverhill Bird Observatory's (BBO) second year of operation, although up to five bird banders have banded birds there since at least, 1980. During the year, 49 birders participated in the Observatory's activities during 25 days of operation. In addition, 215 visitors to the Observatory received information about birds and bird banding at the station. At public meetings at the John Janzen Nature Centre in Edmonton, BBO reaffirmed its five objectives:

a) to conduct studies of migrant and resident birds and other aspects of natural history, at Beaverhill Lake, in the province of Alberta and elsewhere, and to publish the results of such studies;

b) to make the facilities of the Observatory available to amateur and professional biologists and students who are carrying out compatible observations and research work;

c) to engage in educational activities related to the work of the Observatory;

d) to promote the preservation and conservation of Canada's natural heritage with special emphasis on the Beaverhill Lake area of Alberta; and

e) to cooperate with organizations with similar objectives.

A common question at the Lake was "where is the bird observatory" since most people expect a viewing tower or building from which to observe birds. Invariably our answer was to indicate the picnic table rather than the outhouse! The construction effort this year centered on bird boxes for ducks, hawks, tree swallows and house wrens, rather than buildings for ourselves.

The bird observatory need not be a physical structure, rather it is a concept. The bird observatory is bird watchers observing and studying the avifauna and contributing to cooperative studies at Beaverhill Lake. As a place for amateur research, BBO provides an opportunity for naturalists to get together and share their sightings and stories. In time, buildings will appear to protect the observers from the elements. However, the observers will always be the Observatory.

LOCATION OF THE STATION

Beaverhill Lake is located north-east of Tofield, approximately 70 kilometres south-east of Edmonton, Alberta. The station is located at the south-east corner of the lake (53 22 N, 112 30 W; NW1 and SW12 Twp 51 Rge 18 W4M) approximately three-quarters of a mile west of Lister Lake (or A Lake). This is the same site as in 1984. The habitat is a mosaic of aspen woods, willow shrubland, sedge meadows, cattails, mud flats, and open water.

BIRD WATCHING AND BANDING ACTIVITIES - Geoff Holroyd and Rainer Ebel

Most people at the observatory participated in the "core" projects, bird monitoring by observation and bird banding. Bird observations were recorded during the 25 days of operations. On many of those days birds were counted by participants who walked a census route. The census was often the only accurate record of the number of common birds in the area. A total of 152 species were recorded during the year. The highlights during the year are presented in Table 1.

Table 1. Highlights of Birds observed at Beaverhill Lake in 1985.

Species	Number Observed	Date Observed
Black-crowned Night Heron	30	18 May
White-fronted goose	5000	27 April
Waterfowl	10000	27 April
Gyrfalcon	1	16 March
Peregrine Falcon	1	14 April
Sandhill Cranes	5000	28 April
Glaucous Gull	1	31 March
Caspian Tern	4	4 May
Arctic Tern	1	11 May
Yellow-bellied Flycatcher	1	18 August
Say's Phoebe	1	19 May
Brown Thrasher	1	26 May, 1 June
Scarlet Tanager	1	11 May
Philadelphia Vireo	1	17, 18 August
Northern Waterthrush	1	18 August

More tree swallows were banded (310) than any other species (Table 2). Most of these were young in the nest. The species most frequently caught in mist nets were least flycatchers, tree sparrows, yellow warblers, cliff swallows, and black-capped chickadees.

The yellow-bellied flycatcher was the most unusual bird banded.

The amount of time and effort spent banding birds varied each day, however, the most effective time to catch birds was from late June until September (Figure 1).

A number of birds, previously banded, were also recaptured in 1985 as indicated in Table 3.

Table 2. Species and numbers of birds banded at the Beaverhill Bird Observatory in 1985.

Species	Number	Species	Number
Sanderling	1	Yellow-rumped Warbler	5
Semipalmated Sandpiper	4	Blackpoll Warbler	2
Pectoral Sandpiper	3	American Redstart	1
Yellow-bellied Flycatcher	1	Northern Waterthrush	1
Alder Flycatcher	9	Wilson's Warbler	1
Least Flycatcher	72	American Tree Sparrow	38
Tree Swallow	310	Chipping Sparrow	4
Cliff Swallow	33	Clay-colored Sparrow	13
Black-capped Chickadee	32	Savannah Sparrow	10
House Wren	19	LeConte's Sparrow	1
Gray-checked Thrush	1	Fox Sparrow	1
Swainson's Thrush	1	Lincoln's Sparrow	1
Water Pipit	2	White-throated Sparrow	1
Warbling Vireo	6	Dark-eyed Junco	3
Tennessee Warbler	2	Red-winged Blackbird	3
Orange-crowned Warbler	3	Brown-headed Cowbird	3
Yellow Warbler	33	Purple Finch	2
Magnolia Warbler	1	American Goldfinch	1
Total Species	36		
Total Individuals	624		

Table 3. Recoveries and returns of banded birds at Beaverhill Bird Observatory (BBO) in 1985.

Retrap Data				Original Data		
species band #	age & sex	retrap date (d/mo/ 1985)	recorder	date banded (d/mo/yr)	bander	location
Redhead						
896-67566	HY/F (found dead)	1/09	DW	21/08/1985	BCT	17 km. W of Rowley, Alta.
Least Flycatcher						
1630-05879	AHY/M	26/05	GRAE	3/06/1984	GLH	BBO
1700-53325	AHY/F	26/05	GRAE	unknown		
Tree Swallow						
890-53971	AHY/M	26/05	GLH	14/06/1980	EJ	N. Cooking Lake, Alta.
910-22300	ASY/F	4/05	GLH	unknown		
910-22300	ASY/F	22/06	GLH	unknown		
940-14263	AHY/F	22/06	GLH	5/05/1984	JL	BBO
980-11506	AHY/F	26/05	GLH	28/05/1984	EJ	7 mi. W. Inland, Alta.
Cliff Swallow						
910-22092	AHY/F	14/07	JL	5/07/1981	GRAE	BBO
Savannah Sparrow						
940-14260	U/M	19/05	JL	6/05/1984	GRAE	BBO
				note: age & sex in 1984 - AHY/M		
Brown-headed Cowbird						
1321-56607	F	20/05	GRAE	22/05/1983	GRAE	BBO
				note: age & sex in 1984 - AHY/F		

Abbreviations

GRAE= Rainer Ebel
GLH = Geoff Holroyd
JL = Jim Lange
BCT = Bruce Turner
DW = Dennis Wade
EJ = Edgar Jones

Age and Sex

HY =Hatching year
AHY =After hatching year
ASY =After second year
U =Age unknown
F =Female
M =Male

BEAVERHILL BIRD OBSERVATORY PROJECT REPORTS

1. Tree Swallow Biology - Geoff Holroyd

Tree swallow boxes were established at three sites at Beaverhill Lake to determine if the swallows at each site had different clutch sizes. Adult birds were also trapped to see if any were banded and where they originated.

Boxes were placed at three sites: 1. along the south shore west of the weir and east of Park Lane, called lake site; 2. at the south end of Park Lane adjacent to the pasture opposite the south end of Lister Lake, called marsh site; and 3. along the road to Tofield up to 1.5 km. from Lister Lake, called road site. Most boxes were checked four times during the breeding season and many of the adults and young were banded.

A total of 41 nests were built and held eggs in the 70 boxes that were available (Table 4). Although nests were not checked frequently enough to establish success rates, the visits that were made do indicate some possible trends in productivity in the three areas. The swallows at the Lake site were the most productive and those at the road site were the least productive both in terms of the number of eggs and number of young. There was an average of almost a 1 egg difference and a 0.5 to 1 young difference between adjacent sites.

These results can be compared to the clutch size of tree swallows at three habitats at Long Point, where Dr. David Hussell and others have conducted many studies. Their clutch size varied from 5.2 to 6.5 eggs per nest. The largest average clutch at Long Point is only equal to the marsh site at Beaverhill.

In mid-summer a graduate student, Peter Dunn, decided that tree swallows would be a useful species for his research and hopefully he can attempt to determine why tree swallows at Beaverhill Lake are so productive.

Table 4. Number of boxes available and occupied by tree swallows at the three sites at Beaverhill Lake in 1985.

Site	Boxes Available	Swallow Nests	Percent Occupancy	Ave. Eggs	Ave. Young
Lake	26	18	69	7.4	6.4
Marsh	31	17	55	6.5	5.3
Road	13	6	46	5.3	4.8

2. House Wren Nesting Biology - Geoff Holroyd and Mike Quinn

House wrens occur infrequently in the aspen forest around Beaverhill Lake. The young forest and small tree size likely limits the availability of tree cavities and, consequently, the number of wrens. The objective of this project is to test two hypothesis: 1. to determine if the number of wrens will increase if artificial nest boxes are provided and; 2. to see if the wrens will nest at a higher density in the willow habitat than in the aspen forest where food may be less abundant.

In early May, 17 "bluebird" boxes were placed in the willow habitat to the south-west of the weir at the south end of the lake, and 12 boxes were put on aspen trees to the south west of the willow stand. All boxes were in rows 30 meters apart.

House wren eggs were laid in four boxes and nests were constructed in fifteen of the 29 boxes (Table 5). House wrens appeared to prefer boxes in willows but sample sizes were too small to demonstrate a significant difference (hypothesis 2). In 1984 no house wrens nested in this area and only one nested near by. Thus the addition of boxes increased nesting density (hypothesis 1).

The three boxes in the willows appeared to be dominated by only two males. Efforts in 1986 will concentrate on studying the tendency of male wrens to have two or more boxes and females.

We thank all the people who helped build boxes in Rainer Ebel's garage in the spring, who put boxes up, and who helped check the boxes; in particular Michael Holroyd and Jonathan Reid who survived numerous mosquitoes to check the boxes in early July.

Table 5. Occupancy of nest boxes west of weir at Beaverhill Lake in 1985.

Habitat	Boxes Available	House Wren Nests	House Wren Nests With Eggs	Tree Swallow Nests
Aspen	17	12	3	4
Willow	12	3	1	0

3. Duck and Raptor Nest Boxes - Karl Grantmyre

In February, 1985, 44 nest boxes and 5 artificial raptor perches were constructed by members and friends of the Beaverhill Bird Observatory (BBO). The boxes were put up during the month of March at various locations at the south end of Beaverhill Lake. There was a period of grace in which the birds were allowed to nest and the boxes were checked for activity on the long weekend of May 21.

Of the 11 kestrel boxes, six had signs of nesting (55%), two were house wrens without eggs, and four were tree swallows (two with 6 egg clutches and two without eggs). Of the 15 bufflehead duck boxes, 12 (80%) showed nesting activity. Eight nests were tree swallows with six having eggs. The other two nests contained starling eggs. Of the seven owl boxes, five had nests. Three were starlings, two were tree swallows all with eggs and one was a wasp nest. Goldeneye boxes totalled 15 with three boxes (20%) showing nesting activity. All of these being tree swallows with eggs.

I would like to thank George Cheeseman, Frank and Linda Dobos, Jim Favagini, Ian and Irene Flewwelling, Eva and Roseanna Grantmyre, Geoff and Michael Holroyd, Rae Keashley, Don Large, Wayne Nelson, and Harold Pankraty who took part in the nest box work bee. A special thanks to Rainer Ebel and Suzanne Ebel who hosted the work bee, Tom Branch who donated materials, Edgar Jones for suggesting the project, and Bucks for Wildlife Program for funding.

4. CORMORANT AND PELICAN SURVEYS BY THE PROVINCIAL MUSEUM

P.H.R. Stephney - Provincial Museum of Alberta

Banding of double-crested cormorant and the white pelican on Beaverhill Lake has been undertaken since 1980. All efforts have focused on the

small rock island located along the east shore near the central portion of the lake.

At best the island can be described as marginal breeding habitat for the two species in question. Not only are the breeding occurrences of the two species erratic, the number of pairs of the two species is low overall, and there is a general declining use by the cormorants. Egg productivity for the two species on the Beaverhill island is comparable with that of other colonies of the same species in north central Alberta. Fledging production, however, is dramatically lower. It is common for the majority of pelican nestlings to disappear over the months of June and July and the same happens to many nestling cormorants. Also, the nestlings of both species as a rule are noticeably lighter in body weight than those of other colonies. The poor condition of the nestlings seems to follow the general water quality deterioration that occurs in the lake over the summer months. The regurgitated food items of the young of both species typically are a slimy sort of fluid with small portions of fish remains, probably stickleback and minnow, only occasionally are the remains of perch detected. This is in direct contrast to the situation observed on other colonies where nestlings of both species consistently regurgitate large amounts of whole or partly digested fish, commonly perch, whitefish, or suckers and to a lesser extent pike, ling and stickleback.

The results of our banding efforts are as follows:

Double-crested Cormorant

Year	1980	1981	1982*	1983	1984	1985
No. of nests	44	40	?	34	24	42
No. of young banded	63	16	-	26	41	23

White Pelican

Year	1980	1981	1982*	1983	1984	1985
No. of nests	38	10	?	0	84	33
No. of young banded	10	25	-	0	43	16

* The island was not visited as observations from the shore indicated extensive weed cover on the island and no birds of either species were detected.

5. Nest Record Cards - Geoff Holroyd

The purpose of these cards is to document the nesting status of birds at Beaverhill Lake and deposit the information in the Prairie Nest Record Scheme. Sixteen species were recorded nesting and 57 cards were completed and sent to the Manitoba Museum of Man and Nature:

Mallard	1	House Wren	6
Blue-winged Teal	1	Marsh Wren	1
Redhead	1	Yellow Warbler	1
Cooper's Hawk	1	Clay-colored Sparrow	2
Sora	1	Red-winged Blackbird	2
American Coot	4	Yellow-headed Blackbird	1
Tree Swallow	32	Brown-headed Cowbird	1
Black-capped Chickadee	1	American Goldfinch	1

ACKNOWLEDGMENTS

The BBO is indebted to all the people who helped with the projects and who visited the observatory and shared their observations. Here is a list of all those names which were recorded in the daily log book. Our thanks to all of them and our apologies for any spelling errors and omissions.

Participants for 6 or more days: Elisabeth Beaubien; Rainer Ebel; Geoff and Michael Holroyd; and Jim Lange. Participants for 1 to 5 days: Kathy Blake; Majellaine Boisclair; Marlene and Paul Brudru; Carol, Crista, Lu, and Shelly Carbyn; Lewis and Roberta Cocks; Jim and Katherine Cochrane; Doug Collister; Frank Dolar; David, Derek and Susanna Donald; Peter Dunn; Matthew Ebel; Jim Faragini; Curtis Fairclough; Cam and Joy Finlay; Carl and Eva Grantmyre; Peggy Holroyd; Roger Jones; Tony Keith; Eric, Linda, and Peter Kershaw; Alison Kusyk; John Lunn; Chel MacDonald; Pat Nolan; Jack Park; Don Patty; Paul Peterson; Jonathan Reid; Margaret Skeel; Steven Sosnicki; Lisa and Phil Tomaszewski; Mike Quinn; and Dennis Wade.

In addition, visitors to the Observatory included: 30 international exchange teachers on 27 April, 30 NAIT students led by Don Patty also on 27 April, 32 participants in a bird identification course from the John Janzen Nature Center (JJNC) led by Rainer Ebel on 4 May, 30 volunteers from JJNC on 5 May, 60 visitors on 20 May and a group of University students lead by Peter Dunn.

Figure 1. Birds caught per mist net / hour in 1985 at Beaverhill Lake