

The
LOON

SPRING 1973

VOLUME 45 — NUMBER 1

The LOON Minnesota's magazine of birds and nature, is published four times each year by the **Minnesota Ornithologists' Union**, the statewide bird club. Permanent address: J. F. Bell Museum of Natural History, University of Minnesota, Minneapolis 55455. Anyone interested in birds and nature may join. Any organization with similar aims may affiliate. All MOU members receive our two quarterly publications: **The Loon** and the **MOU Newsletter**.

MEMBERSHIPS AND SUBSCRIPTIONS: Karol Gresser, 8850 Goodrich Ave., Bloomington, Minnesota 55437. To join the MOU and receive both MOU publications, send Mrs. Gresser \$4 for a regular yearly subscription. Or other classes of membership that you may choose are: Family \$5 yearly; Sustaining \$25 yearly. Life \$100. Also available from Mrs. Gresser: back issues of **The Loon** (\$1 each ppd.) and MOU checklists of Minnesota birds (20 for \$1 ppd.). Gifts, bequests, and contributions to the MOU Endowment Fund should also be sent to Mrs. Gresser.

EDITOR OF THE LOON: Robert B. Janssen, 14321 Prince Place, Hopkins, Mn. 55343. (phone 938-7464). The editor solicits articles, short notes, and black/white illustrations about birds and nature. See back cover for details. Associate Editors, Kim R. Eckert and Paul Egeland.

"The Season" section of **The Loon** publishes reports of bird sightings throughout Minnesota. We particularly desire reports from parts of the state that have been neglected or covered lightly in past reports. To become a contributor to "The Season," request the report forms from the **EDITOR OF "THE SEASON," Mrs. Janet Green, 9773 North Shore Drive, Duluth, Mn. 55804. (area 218, phone 525-5654).**

EDITOR OF THE MOU NEWSLETTER: Mrs. Marlyn Mauritz, Route 4, Box 886, Excelsior, Minn. 55331. Publishes announcements and reports about activities of the MOU and its affiliated clubs. (Club officers should keep both MOU editors informed.)

MOU OFFICERS

PRESIDENT: Bill Bryson, Route 2, Alden, Minn. 56009

FIRST VICE PRESIDENT: Jack Mauritz, Route 4, Box 886, Excelsior, Minn. 55331

SECOND VICE PRESIDENT: Pepper Fuller, 14505 McGinty Road, Wayzata, Minn. 55391.

SECRETARY: Jo Blonich, Box 96, Crosby, Minn.

TREASURER: Karol Gresser, 8850 Goodrich Ave., Bloomington, Minn. 55437 (phone 612-831-5714).

MOU COMMITTEE CHAIRMEN

RESEARCH AND RECORDS: Mrs. Janet Green, 9773 North Shore Drive, Duluth, 55804.

FIELD TRIPS: Roy Zook, 5520 Warwick Place, Minneapolis 55436. **MEMBERSHIPS:** Mrs. Josephine Blonich, 101 Birch St., Crosby 56441. **EDUCATION:** Mike Link, Sandstone 55072. **NOMINATIONS:** Mrs. George Stanley, 213 Janalyn Circle, Minneapolis 55416. **UNIVERSITY COORDINATION:** Dr. Harrison Tordoff, Bell Museum of Natural History, University of Minnesota, Minneapolis 55455. **NATIONAL AUDUBON COORDINATION:** Edw. Brigham, Route 4, Red Wing 55066. **PUBLICITY:** Kathy Heidel, Route 5, Box 108, Excelsior 55331. **CONSERVATION AND RESOLUTIONS:** Dr. Bruce Keyworth, 1926 South Lane, St. Paul. **THOMAS S. ROBERTS AWARD:** Mrs. Herbert Richardson, 5215 Thrud Ave. S. Minneapolis. **FINANCE AND ENDOWMENT:** Ross Wagner, Box 171, Mountain Lake. **HOTLINE:** Donald Bolduc, 4211 Blaisdell Ave., Minneapolis 55409. **SLIDE FILE LIBRARY:** Wally Jiracek, 5814 Portland Ave., Minneapolis 55417. **HISTORIAN:** Mrs. Harvey Putnam, 1407 Woodland, Duluth 55803.

AFFILIATED CLUBS OF THE MINNESOTA ORNITHOLOGISTS UNION

ALBERT LEA AUDUBON SOCIETY:

President: Bill Bryson
Route 2
Alden, Minnesota 56009

M. O. U. Representative: Mrs. Olive Nelson

AUDUBON SOCIETY OF FARGO-MOORHEAD

President: Mrs. Leslie Welter Jr.
Box 579
Moorhead, Minnesota 56560

M. O. U. Representative: Mrs. Wm. Wyatt
AVIFAUNAL CLUB

President: Mr. Harding Huber
2109 Squire Lane
New Brighton, Minn. 55112

M. O. U. Representative: Mr. Robert Janssen

COTTONWOOD COUNTY BIRD CLUB

President: Lester Rupp
Mountain Lake, Minn. 56159

M. O. N. Representative: Ross R. Wagner

DULUTH AUDUBON SOCIETY

President: Mr. R. H. Brownlee
2732 London Road
Duluth, Minn. 55804

M. O. U. Representative: Mrs. Harvey Putnam

GRINDSTONE LAKE AUDUBON SOCIETY

President: Beverly Sowers
Hinckley, Minn. 55037

HIAWATHA VALLEY BIRD CLUB

President: Mr. Jay Hamerick
1297 W. Wincrest
Winona, Minn. 55987

M. O. U. Representative: Dr. Donald Mahle

MINNEAPOLIS AUDUBON SOCIETY

President: Miss Theodora Melone
2601 Sunset Blvd.
Minneapolis, Minn. 55416

M. O. U. Representative: Mrs. George Stanley

MINNEAPOLIS BIRD CLUB

President: Miss Jane Spence
125 E. Broadway
Osseo, Minn. 55369

M. O. U. Representative: Mr. Walter Jiracek

MINNESOTA BIRD CLUB

President: Mr. Robert Nordgren
79 Seymour Ave. S.E.
Minneapolis, Minn. 55414

M. O. U. Representative: Dr. W. J. Breckenridge

MINNESOTA RIVER VALLEY AUDUBON CLUB

President: John Rehbein
512 Portland Place
Bloomington, Minn. 55420

M. O. U. Representative: Horace Chamberlain

ST. PAUL AUDUBON SOCIETY

President: Gary Ash
Route 1
Newport, Minn. 55055

M. O. U. Representative: Kathy Engstrom

THE PRESIDENT WRITES . . .

"Those guys put their money where their mouth is" said a rather surprised chairman of a meeting of farmers opposed to proposed Freeborn County ditch 71. He was referring to four men from Albert Lea, two of them Audubon and MOU members, who had attended the meeting and pledged \$100.00 to start a fund to help fight the ditch. As a result of the meeting, and with the help and encouragement of the "outsiders", the group organized as "Friends of the Environment". They are retaining legal council and the landowners along one and one-half miles of Deer Creek, which would be channelized by the ditch, have pledged 50 acres along the creek to the Department of Natural Resources as a wildlife area. The legal battle for Deer Creek is just beginning but the prospects of saving it as a natural waterway are good.

This is a good example of citizen involvement. When conservationists are aware of a situation soon enough, and are willing to get involved, more decisions will be made that are favorable to our way of thinking.

Dr. James Ludwig, at our December meeting, challenged us to spend a day watching the legislature for every day we spend birdwatching this spring. Carry this idea over to other units of government. Seek out those officials who are at least open-minded on environmental issues. Present our case with facts and offer to help find more information if they feel more facts are needed before making a decision. Above all, insist that where federal or state guidelines exist they are followed, not overlooked.

Our environment, our wildlife, our BIRDS, are part of our heritage. Only by vigilance and INVOLVEMENT can we save what remains!

GOOD BIRDING!

Bill Bryson

MORTALITY AMONG BIRDS, MAMMALS AND CERTAIN SNAKES ON 17 MILES OF MINNESOTA ROADS

By Alan B. Sargeant¹
and James E. Forbes²

Although many lists of birds and mammals found dead on North American roads have been published, few data are available for Minnesota. Rysgaard (1940) recorded road-killed vertebrates on 3 miles of Minnesota highway after a night of heavy rain, and Longley (1954) summarized findings of a 3-year study on highway mortality among small game furbearers in Minnesota.

For other areas, McClure (1951) summarized many early studies and presented new data for Nebraska. Steinke (1953), Zimmerman (1954), and Vermeer and Switzer (1968) present extensive lists of animals found dead on highways in Wisconsin, Michigan and Alberta, respectively. Year-round surveys were conducted by Abbott (1958), who found 328 dead birds and mammals in 1 year on an 11-mile stretch of Virginia highway, and by Channing (1958), who found 137 birds and mammals in 1 year on 22 miles of highway in Washington state.

This paper reports the incidence and species composition of birds, mammals and certain snakes found dead on 17 miles of rural roads in Anoka County, Minnesota, from July 1, 1964 through December 31, 1965. The study was conducted to determine the kinds and amount of carrion available on the roads to mammalian predators.

Study Area and Methods

The study area included 8.5 miles of County Roads 24 and 26 from Martin Lake in Linwood Township to the headquarters of the Cedar Creek Natural History Area in East Bethel, and 8.5 miles of County Roads 15, 74, 17

and 80 from 1 mile south of Fish Lake to Coon Lake Beach, both in East Bethel. Approximately 13 miles of the roads were paved, and 4 miles were sand or gravel-surfaced. Twenty-four hour traffic counts on various stretches of the roads in July 1964 averaged 288 vehicles per day (data courtesy of the Anoka County Highway Department).

The roads bordered a variety of habitats common to the area, i.e., idle fields, cropland, swamps, sedge meadows, marshes, and oak and aspen woodlots. Numerous farmsteads and other occupied residences were located along the roads. The authors traveled the roads two or more times almost every day, including weekends, and all dead birds, mammals and certain snakes (Bullsnake and Hognose) were collected and identified. In addition the sex of tree squirrels was determined. The common names of animals in this paper follow the A.O.U. Checklist (1957) for birds, Gunderson and Beer (1953) for mammals and Breckenridge (1970) for reptiles.

Results and Discussion

A total of 192 birds of at least 41 species and 108 mammals of 19 species were found on the roads (Table 1). Most were believed killed by automobiles.

Other animals were undoubtedly killed on the roads and may have been deflected out of view, or may have crawled off, been removed by scavengers or been overlooked. The greatest mortality per month occurred during July 1965, when 44 deaths (2.6/mile) were recorded, and the least during November 1965, when only one death (.06/mile) was recorded.

¹Current address: U. S. Bureau of Sport Fisheries and Wildlife, Northern Prairie Wildlife, Research Center, Jamestown, North Dakota 58401

²Current address: U. S. Bureau of Sport Fisheries and Wildlife, 11 North Pearl Street, Room 606, Albany, New York 12201

Robins were the most frequently killed birds, accounting for 23 deaths (12 percent of the total bird mortality). Only seven birds of three species were found during the 4 winter months, November 1964 through February 1965, as compared to 92 birds of at least 28 species during 4 summer months, June through September 1965. Some species that were common in the area were not killed or were killed in very low numbers. For example, no Eastern Meadowlarks and only two Red-winged Blackbirds were found, even though both were regularly seen in the fields and marshes bordering the roads. Conversely, 11 Ring-necked Pheasants were found on the roads although relatively few were seen in the area.

Three species of tree squirrels were the most frequently killed mammals, accounting for 43 deaths (40 percent of the total mammal mortality). They were killed throughout the year although mortality appeared to increase during spring. On cool days, squirrels were frequently seen basking in the sun on the warm asphalt. Twenty (63 percent) of 32 squirrels for which sex could be determined were females. No White-tailed Deer were known to have been killed during the study period, but one was killed shortly thereafter.

In addition to the birds and mammals, numerous snakes were killed, including one unidentified Hognose and three Bullsnares. Another Bullsnares was known to have been run over but crawled off the road. During cool weather snakes were frequently seen lying on the warm asphalt where they were vulnerable to moving vehicles.

We found that the carrion recovered was grossly insufficient for maintaining two captive Red Foxes. Much of the carrion was badly mutilated and of little value as feed. In addition, during summer the carrion deteriorated

rapidly from heat and fly maggots. We do not know to what extent the road-kills would have been utilized by the numerous mammalian predators in the area, but we believe the limited amount found would have contributed little to their survival.

Dunthron and Errington (1964:180), studying a roadside population of nesting birds in Wiltshire, England, concluded that "the number of a given species of bird killed by traffic within a particular area has little intrinsic value." They recovered from the roads 30 (7.5 percent) of 402 nestlings banded near the roadside. Dennis (1958) also believed that highway deaths among birds are not excessive. Although such may be the general case, it is presumptuous to assume the same is true for all animal species in all areas. An example of this might be the Bullsnares.

In this study we were impressed by the fact that the three Bullsnares were found on roads in or adjacent to the Cedar Creek Area. Several other dead Bullsnares were found on these and other roads in or adjacent to the Cedar Creek Area before and after this study was completed. Bullsnares were occasionally seen on the Cedar Creek Area but were seldom reported in the surrounding area. We recall sighting no live or road-killed Bullsnares outside of the Cedar Creek Area during the years 1963-67 when we lived in Anoka County and regularly traveled its roads. Bullsnares appear quite vulnerable to moving vehicles, and the mortality we observed may have represented an important loss to a rather isolated population. Our findings tend to support the statement by Breckenridge (1970:129) that "highway traffic will probably continue to take its toll and may prevent this snake from ever becoming common."

Table 1. Monthly totals of birds and mammals found dead on 17 miles of roads in Anoka County, Minnesota during 1964-65.

Species	1964					1965					Total								
	J	A	S	O	N	D	J	F	M	A		M	J	J	A	S	O	N	D
BIRDS																			
Mallard													1						1
Green-winged Teal			1																1
Ring-necked Duck		1																	1
Broad-winged Hawk															2				2
Ruffed Grouse	1					1												1	3
Ring-necked Pheasant	2	4	2				1					1					1		11
Sora		1											1	2					4
American Woodcock									1										1
Ring-billed Gull		1													1				1
Rock Dove			1										1						2
Mourning Dove		1										1	1	2					6
Black-billed Cuckoo												4							4
Common Nighthawk	1		2										2	1					6
Yellow-shafted Flicker	1							1		1		1		2					6
Red-headed Woodpecker	1				1							1							3
Eastern Kingbird	3	1										1	1						6
Tree Swallow	6	4						1				2							13
Barn Swallow		1										5	2						8
Cliff Swallow				1															1
Purple Martin											2	1							3
Blue Jay		1										2					1		4
Black-capped Chickadee																1			1
House Wren			1																1
Brown Thrasher		1								1									2
Robin	2	2	2	3					2	1	1	4	3	3					23
Veery	1		1																2
Eastern Bluebird	1												1		1				3
Tennessee Warbler															1				1
Yellowthroat											1								1
House Sparrow	3	3	2						1	1			6	2					18
Bobolink												1							1
Red-winged Blackbird										2									2
Brewer's Blackbird											1								1
Brown-headed Cowbird											1	1							2
Rose-breasted Grosbeak														1					1
American Goldfinch								1				1	2						5
Unidentified Crossbill	1																		1
Vesper Sparrow				1			5				1	1	2	4		2			11
Lark Sparrow																			1
Slate-colored Junco									1			1							2
Song Sparrow												1							1
Unidentified Sparrow	3	1	2											5					13
Unidentified Bird	2	2		1								2		1	2				8
Total Birds	28	24	15	6	0	6	1	0	2	7	6	15	35	24	18	3	1	1	192
MAMMALS																			
Common Mole		2																	2
Cottontail Rabbit		1	1	2	1							1			1	1			8
Woodchuck				1									1						2
Thirteen-lined Ground Squirrel	2	3	1	1								3	3	1	1				15
Eastern Chipmunk	1												1	1					3
Red Squirrel				1								2	2				1		6
Gray Squirrel	3	2	1		1		1	1	1	4	2	3		1	1	1			21
Fox Squirrel		2				1	1	1	1	4	1			1	2			1	16
Mississippi Valley Pocket Gopher					1	1													2
Unidentified Deer Mouse														1	1				3
Red-backed Mouse			1							1									1
Common Meadow Mouse												3							3
Muskrat	1			1															2
Raccoon				2										1					4
Short-toiled Weasel															1		1		1
Striped Skunk	1	2	1	2						1					1				8
Red Fox																1			1
Domestic Cat				1	1														2
Domestic Dog											1								1
Total Mammals	8	13	10	7	3	1	2	3	5	9	6	11	9	8	4	8	0	1	108
Total Birds and Mammals	36	37	25	13	3	7	3	3	7	16	12	26	44	32	22	11	1	2	300

Literature Cited

- American Ornithologists' Union. 1957. Check-list of North American birds. 5th Ed., Am. Ornithol. Union. 691pp.
- Abbott, J. M. 1958. Death on the highway. *Va. Wildl.* 19(6):16-17.
- Breckenridge, W. J. 1970. Reptiles and amphibians of Minnesota. 3rd Ed., University of Minnesota Press, Minneapolis. 202pp.
- Channing, C. H. 1958. Highway casualties of birds and animals for one year period. *Murrelet.* 39(4):41.
- Dennis, J. V. 1958. Death on the highway. *Aud. Mag.* 60(4):159.
- Dunthorn, A. A., and F. P. Errington. 1964. Casualties among birds along a selected road in Wiltshire. *Bird Study* 2(3):168-182.
- Gunderson, H. L., and J. R. Beer. 1953. The mammals of Minnesota. University of Minnesota Press, Minneapolis. 190pp.
- Longley, W. H. 1954. Horsepower vs. wildlife. *The Conserv. Volunteer* 17:45-48.
- McClure, H. E. 1951. An analysis of animal victims on Nebraska's highways. *J. Wildl. Manage.* 15(4):410-420.
- Rysgaard, G. N. 1940. Highway destruction of vertebrates. *The Flicker* 12(1&2):6.
- Steinke, H. 1953. The automobile as a predator of wildlife. *Wis. Conserv. Bull.* 18(7):7-10.
- Vermeer, K., and B. Switzer. 1968. Road kills of birds and mammals in southeastern Alberta. *The Blue Jay* 26(2):93-94.
- Zimmerman, D. A. 1954. Bird mortality on Michigan highways. *Jack Pine Warbler* 32(2):60-66.

THREE MINNESOTA "BIG DAYS"—A SUMMARY

By Kim R. Eckert

In May of 1970 Paul Egeland and I conducted the first "official" Big Day in Minnesota—an attempt by one party to record as many species as possible during a 24-hour day. Beginning in the vicinity of St. Cloud before dawn and heading west and south to end near Marshall around dusk, the two of us recorded 153 species. Following the same general itinerary in 1971 and 1972, we were joined by a third birder and found 166 and 153 species respectively.

Information on these 3 days has already been written up in various places in *The Loon*, especially on the 1971 Big Day, but an earlier article describing the rules and strategy connected with our first effort was lost, and nothing has been written on last year's Big Day or a comparison of the 3 years.

The rules of a Big Day are simple: 1) any number of people may participate, but they all must remain in one party

for the whole day; that is everyone must stay within sight and hearing of each other; 2) time is limited to all or part of a 24-hour day, midnight to midnight; 3) area covered is unlimited, unless a state or county or city list is desired; 4) all species seen or heard by an member of the party counts; not all the observers have to see the bird.

But more important than the rules is the strategy. In Minnesota obviously the best time for running up the highest list is at the peak of the spring migration in May. Depending on weather and specific location the best date naturally varies from year to year. Most of us are limited to a Saturday in the middle of May prearranged weeks ahead of time, but the best date for non-five-day-a-week workers should be chosen only at the last minute when accurate weather forecasts are known. The dates of our Big Days were, in order, May 16, May 15, and May 20; this year it will be on the 19th and next year on the 18th. Warb-

lers and shorebirds seem to be the key, but their migrations seldom match. In 1970 we were too early for peak warblers, in '71 we hit shorebirds perfectly (27 species!) but were again too early for warblers, and last year because of a sudden warm-up a week too soon we were too late for many migrants that went farther north. Three years' experience is not enough to generalize about, but it seems that in an average May the best dates would be the 17th-19th, with nothing before the 13th or after the 22nd having much of a chance of producing a good list.

But along with time of month goes the strategy of time of day. Dawn is the most productive time of day, especially for woodland species, with early afternoon the least productive. Therefore it is best to reserve 5 to 8 a.m. for your best woods birding spot, and to do a lot of extensive birding and traveling from about 1 to 4 p.m. Of course, the highest list can only be achieved with nocturnal species included, and before dawn hours are better than after dusk. If possible, begin at midnight and quit at dusk. If you begin at dawn and plan to find owls and the like after sunset, you'll probably find yourself so tired by 9 or 10 p.m. that you'll be lacking in motivation and perception skill. If you can't force yourself to start at midnight, begin no later than 2 or 3 a.m.; long before sunrise diurnal species begin calling so that you should plan on finishing any owling by 4 or 5 a.m. Finally, set your itinerary to travel from east to west (or from south to north). Because of the sun's movement a half hour or more of daylight is gained over going west to east. The main thing to remember is that a Big Day is primarily a race against time, and that it is necessary to plan and conserve the clock to the fullest extent.

Of course a high list can only be achieved by going to the best areas, but since Minnesota's choicest spots are usually distant from each other, careful planning of an itinerary is essential. Obviously as many habitats as possible should be covered; that is, you

need good woodlands-type areas and prairie-type areas both. But since the best wooded areas in the state are in the southeast, and the best prairies and potholes are far to the west, both geographic locations cannot be covered adequately in one day. A different plan might be to start in the woods of the Itasca State Park area and head west to the not too distant prairies of the northwest, but too many southern species would be missed. Or on a good day in May the warblers and shorebirds could peak together on Minnesota Point in Duluth, so that by carefully covering nearby bogs and Lake Superior shores the lack of southern species might be offset. Our solution was to compromise by starting in woods in central Minn. near St. Cloud which is not too far from the lakes, potholes and prairies of Frog Lake, Marsh Lake, Salt Lake, and Marshall's sewage ponds. Most of our morning birding is done in the woodlands of St. John's University which is where I went to school for four years, and the area around Marshall is where Paul Egeland lived and birded for years. And that is the key to choosing a Big Day itinerary: you must know well the areas you will be covering. Since time is at a premium, you cannot take time to use guesswork, read maps, or use trial and error. You have to know exactly where to go, the fastest way to cover it, and the quickest way to get to the next area. Of course Paul and I are not local experts at every point of our route, and we change our route a bit every year as we learn the areas better. But it is necessary that the participants be very familiar with their route during their race against time.

The route that we have laid out is as follows. Before dawn we listen for owls mostly in the woods surrounding St. John's until about 4 a.m. From there we head to a small swamp near St. Cloud that is good for American Woodcock and Common Snipe. Then it's back to St. John's where we intensively cover the woods from just before dawn until about 10:30. We do

miss some woodland species that do not occur this far north, but there are several "southern" species that we get here: Red-shouldered Hawk, Screech Owl, Red-bellied Woodpecker, Wood Thrush, Cerulean Warbler. We have never left St. John's with less than 100 species, and its far enough west that the prairies aren't that far away. We then quickly bird our way across Stearns Co. to Lake Johanna that is the only place for us to get Common Egret as well as the newly arrived Cattle Egret. We used to bird a prairie spot in southeast Douglas Co. that once gave us Marbled Godwit, Upland Plover and Grasshopper Sparrow, but this spot is out of the way and we now know where to get these species elsewhere. Next we stop at Lake Minnawaska, which is our only chance for Herring Gull, Common and Caspian Terns. Around 1 p.m. we're on our way for the Frog Lake area of Stevens Co. where we look mostly for waterfowl, especially late-migrating Buffle-

head, Common Goldeneye, and mergansers. Then we go south and head for Salt Lake, stopping to bird Marsh Lake and vicinity for more waterfowl including the White Pelican. We're at Salt Lake looking for shorebirds around 4 or 5 p.m. and then it's a long drive to the Marshall sewage ponds. All afternoon we are looking for odds and ends that happen to appear as we drive by, and this is the time fatigue first becomes a problem as fewer new species appear and the miles get longer. Our last effort is made at Marshall for shorebirds and at Paul's home nearby in Cottonwood for anything that has eluded us: Orchard Oriole nest in his yard and we once flushed up a staked-out Eastern Phoebe from under a bridge at dusk.

To conclude this article I will list some of the statistics concerning our 3 Big Days. I will not list the species we have seen, but anyone wishing this information can get it on request.

NUMBER OF SPECIES SEEN:

1970—153

1971—166 (33 seen for first time)

1972—153 (12 seen for first time)

3-year cumulative list:

198 Species (40 have been seen once, 42 have been seen twice, and 116 have been seen all 3 years)

Species not yet recorded that are to be expected: Least Bittern, Greater Scaup, Hooded and Common Mergansers, Turkey Vulture, Cooper's and Sharp-shinned Hawks, Gray Partridge,

Common Gallinule, Black-bellied Plover, Greater Yellowlegs, Short-eared Owl, Whip-poor-will, Yellow-bellied Flycatcher, Brown Creeper, Loggerhead Shrike, Golden-winged, Black-throated Blue, Pine, Connecticut and Mourning Warblers, Red Crossbill, Rufous-sided Towhee, Lark and Fox Sparrows, Slate-colored Junco, Little Blue Heron, Western Sandpiper, Pigeon Hawk, Hermit Thrush, Lark Bunting, Rusty Blackbird.

NUMBER OF SPECIES SEEN ACCORDING TO FAMILIES:

	1970	1971	1972	3 years cumulative
Loons, grebes, pelican, cormorant	5	7	6	8
Hérons, etc.	3	4	6	6
Swan, geese, ducks	16	18	16	21
Hawks, etc.	6	5	4	7
Gallinaceous birds, rails, coot	4	5	4	5
Shorebirds	20	27	17	28
Gulls, terns	7	8	5	8
Doves, cuckoos	2	2	4	4
Owls	0	4	2	4
Goatsuckers, swift, hummingbird, kingfisher	2	3	3	4
Woodpeckers	7	7	7	7
Flycatchers	6	4	8	8
Horned Lark, swallows	7	6	6	7
Jay, crow, chickadee, nuthatches	5	4	4	5
Wrens	4	3	3	4
Mimic thrushes, thrushes	7	8	8	8
Kinglet, waxwing, Starling	2	2	3	3
Vireos, warblers	23	22	20	28
House Sparrow, Bobolink, meadowlarks, blackbirds, orioles	9	9	10	11
Tanager, finches	6	7	8	9
Sparrows	12	11	9	13
	153	166	153	198

Box 253, Ashby, Minn. 56309

MINNESOTA BIRDING AREAS - T. S. ROBERTS SANCTUARY

By Don Bolduc

T. S. Roberts Sanctuary in Minneapolis consists of about forty acres. It is bordered on the west by Wm. Berry Drive, on the south by Lake Harriet, on the east by Lake Harriet Parkway, and on the north by Lakewood Cemetery. Much of the land was deeded to the park board by W. S. King in 1891.

There is a path known as Bosen Lane that goes east and west through the Sanctuary. In 1960 when I first birded here there was sand and gravel on the path. Now it is covered with wood chips. Some thought the sand and gravel provided grit for the birds, thereby attracting many species. It is my belief that the species of birds and the number of birds seen now are much less than in the first six years that I spent birding in Roberts.

Some of the trees in the area are: American Elm, Sugar Maple, Silver Maple, Northern Red Oak, Basswood, Black Cherry, Black Willow, Box Elder, Hackberry, Burr Oak, Cottonwood, White Ash, Mulberry and Tamarac.

A few of the shrubs present are:

Prickly Ash, Buckthorn, Frost Grape, Riverbank Grape, Alternate Leaf Dogwood and Pin Cherry. In addition many wildflowers and mushrooms are found when in season.

Cattail and Purple Loosestrife abound in the area that is flooded each spring. This area is usually dry by the last of July, or sooner, if it is a dry spring.

East of the fence to the road (Lake Harriet Parkway) are crabapple trees. Flycatchers and other species are numerous if the trees are not sprayed.

In the last six years or so, deer have invaded the area. As many as seven have been reported at one time. Other mammals seen were: Gray Squirrel, Red Squirrel, Eastern Chipmunk, Cottontail Rabbit and even a Red Fox was once reported.

Since 1960, I have personally seen the following species (143) of birds in the T. S. Roberts Sanctuary area: (It shall be understood that species such as Turkey Vulture, terns, etc., were seen flying directly overhead).

Great Blue Heron, Green Heron,

Common Egret, Black-crowned Night Heron, Yellow-crowned Night Heron, Snow Goose, Blue Goose, Mallard, Blue-winged Teal, Wood Duck, Turkey Vulture, Goshawk, Sharp-shinned Hawk, Red-tailed Hawk, Broad-winged Hawk, Osprey, Sparrow Hawk, Ring-necked Pheasant.

Virginia Rail, Sora, American Woodcock, Solitary Sandpiper, Herring Gull, Ring-billed Gull, Franklin's Gull, Forrester's Tern, Black Tern, Mourning Dove, Yellow-billed Cuckoo, Black-billed Cuckoo, Screech Owl, Great Horned Owl, Great Gray Owl, Long-eared Owl, Saw-whet Owl, Whip-poor-Will, Common Nighthawk, Chimney Swift, Ruby-throated Hummingbird, Belted Kingfisher, Yellow-shafted Flicker, Pileated Woodpecker, Red-headed Woodpecker, Hairy Woodpecker, Downy Woodpecker.

Eastern Kingbird, Great Crested Flycatcher, Eastern Phoebe, Yellow-bellied Flycatcher, Traill's Flycatcher, Least Flycatcher, Eastern Wood Pewee, Olive-sided Flycatcher, Tree Swallow, Barn Swallow, Purple Martin, Blue Jay, Common Crow, Black-capped Chickadee, White-breasted Nuthatch, Red-breasted Nuthatch, Brown Creeper, House Wren, Winter Wren, Long-billed Marsh Wren, Short-billed Marsh Wren, Catbird, Brown Thrasher, Robin, Wood Thrush, Hermit Thrush.

Swainson's Thrush, Gray-cheeked Thrush, Veery, Blue-gray Gnatcatcher, Golden-crowned Kinglet, Ruby-crown-

ed Kinglet, Cedar Waxwing, Starling, Yellow-throated Vireo, Solitary Vireo, Red-eyed Vireo, Philadelphia Vireo, Warbling Vireo, Black and White Warbler, Golden-winged Warbler, Tennessee Warbler, Orange-crowned Warbler, Nashville Warbler.

Parula Warbler, Yellow Warbler, Magnolia Warbler, Cape May Warbler, Black-throated Blue Warbler, Myrtle Warbler, Black-throated Green Warbler, Blackburnian Warbler, Chestnut-sided Warbler, Bay-breasted Warbler, Blackpoll Warbler, Palm Warbler, Ovenbird, Northern Waterthrush, Louisiana Waterthrush, Connecticut Warbler, Mourning Warbler, Yellowthroat, Wilson's Warbler, Canada Warbler, American Redstart, House Sparrow, Red-winged Blackbird, Baltimore Oriole, Rusty Blackbird, Common Grackle, Brown-headed Cowbird, Scarlet Tanager.

Cardinal, Rose-breasted Grosbeak, Indigo Bunting, Evening Grosbeak, Purple Finch, Pine Siskin, American Goldfinch, Rufous-sided Towhee, LeConte's Sparrow, Slate-colored Junco, Oregon Junco, Tree Sparrow, Chipping Sparrow, Clay-colored Sparrow, Field Sparrow, Harris' Sparrow, White-crowned Sparrow, White-throated Sparrow, Fox Sparrow, Lincoln's Sparrow, Swamp Sparrow, Song Sparrow, Worm-eating Warbler, Kentucky Warbler, MacGillivray's Warbler.

**4211 Blaisdell Avenue South,
Minneapolis**

THE 1972 FALL SEASON – Aug. 1 to Nov. 30

By Kim R. Eckert

In light of the overwhelming response to the new style in last spring's report (1 for and 1 against), I have decided to continue the format in this report. Pressures of time (the deadline for this was a month ago; RJ is a very lenient editor), and the hope that people will read rather than skim these seasonal reports, have again for-

ced me to adapt this new style. How permanent a change it will be probably depends on how permanent I am as your compiler. We still could use some help; JG (she's already overworked) and myself are now the only ones compiling the 4 seasonal reports. My official weather data source did not come through in time, so I'll have to skip over the weather summary. The

only information I have come in from Fargo-Moorhead (fide EA), some of which is worth repeating. Aug. and Nov. there were a bit warmer than normal, but Sept. and Oct. were quite cool. Temperatures in Sept. were 2° below the norm, while Oct. was 4° colder and was said to have been their coldest October in 20 years. Snow in October was heavier than usual with almost 4" falling, but in November things were much drier with less than 2" of snowfall.

A total of 282 species were recorded, 2 more than last fall and therefore probably a record high total. The reason for a high count such as this is not necessarily that there were a lot of birds around, but mostly because there were several rarer species observed that boosted the total. Since only the highlights are discussed in this report, there is no need to summarize them here. But two things are worth mentioning here. First, be sure to read about the unprecedented invasions of Goshawk, Black-billed Magpie, Clark's Nutcracker, and Boreal Chickadee. Second, note the extreme rarity of several of the species reported: Arctic Loon, Black Brant, Black Rail, Pomarine and Long-tailed Jaegers, Black-headed Grosbeak, and Gray-crowned Rosy Finch.

Every season has those species which are presumably "regular" in status, but are missed altogether. This fall there were 18 species listed on JG's seasonal observation report form that were missing, some of these with better reason for being absent than others. Those species missing were: Yellow-crowned Night Heron (probably leaves in July), Greater Prairie Chicken (hopefully this was just a matter of no one looking for them?), Knot and Hudsonian Godwit (both regular in spring but very rare fall migrants), Burrowing Owl (could migrate in July, but more likely this species is no longer regular in the state), Whip-poor-will (may migrate earlier but since there are few summer records, it should be very hard to get in fall when it is not

singing), Mockingbird (?—this species is usually seen most often in fall), Blue-gray Gnatcatcher, Bell's Vireo, Cerulean Warbler, Louisiana Waterthrush (all are uncommon summer residents that often leave the state unnoticed after breeding), Yellow-breasted Chat, Lark Bunting, Baird's Sparrow (all could migrate out in July, but more likely they simply do not occur regularly any more), Henslow's Sparrow and Chestnut-collared Longspur (both are uncommon local breeders in the state that are often gone by August).

Loons: A peak of 1000 Common Loons was estimated on Mille Lacs L. on 10-23 (TS). Red-throated Loons are regular migrants on L. Superior and one was at Duluth on 9-16 (T. Bloom). But several were also found inland on Mille Lacs L.: one on 10-22 and 11-16, and no less than 7 on 11-9 (TS). An adult Arctic Loon in summer plumage was present at Duluth from 9-17 to 9-24, for the second state record. The bird was seen (and misidentified) by many observers (see Note of Interest in Winter 1972 Loon).

Grebes: A late Red-necked Grebe was at Duluth on 11-19 (JG, KE), as was a Horned Grebe on 11-21 (MMC). There were 5 Eared Grebe reports: 9-4 in Lyon Co. (RJ), 9-24 at Duluth (JG), 9-27 in Marshall Co. (AR), 10-18 in Hennepin Co. (ES), and on 10-24 in Becker Co. (fide EA). Western Grebes were widespread, with over 100 noted in Kandiyohi Co. on 8-19 (BH).

Pelican and cormorant: White Pelicans were found in good numbers on 3 occasions: 1800 were in Cottonwood Co. on 9-24, 2000 in Jackson Co. on 9-28, and 3000 were present there on 8-24 (LF). Two young pelicans were seen in Lac Qui Parle Co. on 8-1 (BH), and indications are now that the pelican breeds every year in the state (see Note of Interest in Winter 1972 Loon). A late Double-crested Cormorant was in Lac Qui Parle Co. on 11-11 (OE).

Hérons: Little Blue Herons were seen into September at L. Johanna. Pope Co. where they nested last summer: no less than 5 adults and 30 young were there on 8-5, and on 9-2 1 adult and 3 young were still present (BH). One adult and 2 young were also present in Kandiyohi Co. on 8-19, 9-2, 9-9, and may have been migrants from L. Johanna (BH). Two adult birds were also seen on and near the Pelican L. rookery in Grant Co. on 8-5 and 8-13, but it is not known if these nested here or were merely migrants (KE). Cattle Egrets again nested at L. Johanna last summer, and were confirmed nesting for the first time at Pelican L. Ten adults and 20 young were at L. Johanna on 8-5, and on 8-19 5 adults and 3 young were seen (BH). Birds at Pelican L. remained much later, the last being seen on 10-10. An average of 5 to 8 birds were present daily until then, with peaks of 12 on 8-13, 21 on 8-25, 40 on 8-28, and 15 on 9-23 and 10-1 (KE). Eleven Cattle Egrets were also found on 8-25 at Salt L., Lac Qui Parle Co. (JS). Several herons were late in leaving the state: Common Egret on 10-29 in Swift Co. (FN), Black-crowned Night Herons on 11-4 in Grant Co. (KE) and on 11-15 in Hennepin Co. (ES), and American Bittern on 11-6 in Murray Co. (AD). Least Bitterns were found much more readily than usual with 7 reports from 8-6 to 9-21 in Hennepin, Nicollet, Sherburne and Kandiyohi Cos.

Swans and geese: Whistling Swans peaked well at 3 locations: 1000 were in Hubbard Co. on 11-3 (HRH) and at Duluth on 11-11 (M. Kohlbray); at Weaver in Wabasha Co. 2000 were estimated on 11-12, 2800 on 11-18, 2000 on 11-26 and 1500 on 11-28 (FL, AFR, FKS). Four displaced Trumpeter Swans wandered to Brooklyn Park, Hennepin Co. on 8-27

(BH). The highest Canada Goose peak in recent years was estimated in Lac Qui Parle Co. on 11-12 with 36,000 as the total (OE). What was identified as a **Black Brant** was at Agassiz NWR, Marshall Co., no date given. Complete details are not yet available on what would be the second state record, but the following brief description came in: "breast and feet were black with the belly dark, the white collar was absent" (AR). Thirty-five White-fronted Geese were in Lac Qui Parle Co. on 10-1 (OE) and onewas in Lyon Co. on 10-9 (HK). A late peak of 1000 Snow Geese was at Duluth on 11-12 (JG).

Ducks: The following peaks were recorded at Agassiz NWR, Marshall Co.: 41,520 Mallards, 440 Black Ducks, 19,140 Gadwall, 4050 Pintail, 4010 Green-winged Teal, 6390 Blue-winged Teal, 19,980 American Widgeon, 1130 Shoveler, 640 Wood Duck, 4150 Redhead, 530 Bufflehead. Peaks were also noted at other locations: 30,000 Mallards in Cottonwood Co. on 10-26 (fide LR); 1000 Ring-necked Ducks on 10-28 in Wabasha Co. (RR); 2500 Canvasback in Wabasha Co. on 10-28 (RR). Greater Scaup were only identified 4 times: 9-17 in Duluth (KE), 10-8 in Hennepin Co. (OJ), 11-4 in St. Louis Co. (fide VB), 11-12 Scott Co. (ES). The usual Oldsquaw were seen on L. Superior, but birds were also seen inland in Big Stone Co. on 10-1 (D. Peterson), in Mille Lacs Co. from 11-3 to 11-6 (TS), and in Crow Wing Co. from 11-16 to 11-24 (TS). A Harlequin Duck was found in Duluth on 11-2 JB). All 3 scoters were recorded in good numbers, and all 3 were noted inland. White-winged Scoters were on L. Superior from 10-21 to 11-25 with 21 individuals noted, but they were also in Marshall Co. on 10-31 when 10 were counted (AR), and in Mille Lacs Co. on 11-18 (DB, KG). Surf Scoters were seen from 10-11 to 11-19 on L. Superior with 12 counted, and 1 was in Mille Lacs Co. on 10-31 and 11-18 (TS, KG), and 1 in Lac Qui Parle Co. on 10-17 (JS). Eleven Common Scoters were found on L. Superior from 11-2 to 11-25, while 1 imm. was shot in Houston Co. on 10-25 (fide FL), and 2 were in Mille Lacs Co. from 10-31 to 11-16 (TS). Finally, an albino Ruddy Duck was found in Marshall Co. on 10-12 (AR).

HAWKS: The following seasonal totals of hawks were recorded at Duluth: 270 Turkey Vultures, 5100 Goshawks, 6300 Sharp-shinned Hawks, 86 Cooper's Hawks, 3400 Red-tailed Hawks, 26,900 Broad-winged Hawks (with 11,403 on 9-17), 147 Rough-legged Hawks, 35 Golden Eagles, 28 Bald Eagles, 370 Marsh Hawks, 81 Osprey, 11 Peregrine Falcons, 13 Pileon Hawks, and 480 Sparrow Hawks. A total of 40,350 was recorded at Duluth, the third highest ever. One of the real highlights of the season had to be the Goshawk migration. A count of over 5100 at Duluth is even more impressive with the knowledge that the previous season high was only 231 and that the average annual total over the past several years is only about 10! The one-day peak was 984 on 10-14. Goshawks were also found frequently in other parts of the state (as well as all over the Midwest): Clay, Itasca, Lake, Isanti, Wadena ("massive invasion"), Sherburne, Grant, Crow Wing, Hennepin, Nicollet, Marshall, and Cook Cos. Two Krider's Red-tails were identified: 9-17 in Big Stone Co. (D. Peterson), and 9-23 in Grant Co. (KE). A very late Broad-winged Hawk with no details was reported on 11-27 in Wabasha Co. (WDM). Swainson's Hawks were seen on 8-9 in Olmsted Co. (D. Tessen), 8-15 in Lac Qui Parle Co. (B. Zink), 8-27 in Chippewa Co. (WKE), and on 9-6 in Clay Co. (fide EA). An early Rough-legged Hawk was in Carver Co. on 9-15 (MM). The Golden Eagle migration at Duluth was also unprecedented. The 35 recorded there compared with an average of about 2 per season, with the previous high in recent years at only 7. There were also 7 other reports from Lake (1a), Wabash (1i), Cook (1), Marshall (8), St. Louis (2), and Lac Qui Parle (1) Cos. Besides the 28 birds at Duluth, the following Bald Eagles were reported: Hennepin (2a, 2 unknown), Cass (3), Sherburne (2a, 1i), Marshall (2), Crow Wing (6a, 8i), Dakota (1), Carver (1i), Mille Lacs (2a), Aitkin (5a, 25i), Big Stone (1i), Norman (1i), Wabasha (4), Lake of the Woods (1a), Becker (5i), Carlton (1), Houston (9), St. Louis (3), Morrison (1), Itasca (1i), and Pine (1i) Cos. Outside of Duluth, Ospreys were reported from Grant, Crow Wing, Wabasha (3), Big Stone, Koochiching, Cook (4), Morrison,

Hennepin (2), St. Louis, Ramsey and Nicollet Cos.. A possible dark phase **Gyrfalcon** was seen at Black Dog L., Dakota Co. on 11-4 (RR), complete details will follow. Peregrine Falcons appeared in very encouraging numbers. Besides the 11 at Du-10-7 (AR), 9-17 in Chisago Co. (SC), 10-29 in 10-15 in Aitkin Cos. (TS). Pigeon Hawks were Hennepin Co. (OJ), 9-2 and 11-26 in Crow Wing and 10-15 in Aitkin Cos. (TS). Pigeon Hawks were recorded on 8-26 and 9-27 in Marshall Co. (AR), 8-29 in Stearns Co. (MC), 10-29 in Lac Qui Parle Co. (FN), 9-2 in Aitkin and 9-7 in Crow Wing Cos. (TS), as well as at Duluth.

Gallinaceous birds: Spruce Grouse were found in Beltrami Co., no date given (WHL), on 8-10 at Ely, St. Louis Co. (BDC), and on 10-23 at Big Fork, Itasca Co. (A. Bolduc). Sharp-tailed Grouse were noted in Aitkin Co. on 9-7 and 10-15 with 30 birds counted (TS), 11-4 in St. Louis Co. (E. Pearson), and again in St. Louis on 11-15 (MMC, JG). Gray Partridge were reported from Wabasha (6), Murray (20), Clay (7), Lac Qui Parle (8), Marshall (12), and Dakota (5) Cos.

Crane, rails, gallinule, coot: A peak of 4000 Sandhill Cranes was in Norman Co. on 10-1 (fide EA). Cranes were also present in Wadena, Hennepin, Marshall, Wilkin and Sherburne Cos. from 8-8 to 11-2. A **King Rail** was found on the late date of 10-21 at Swan L., Nicollet Co. (GN). Virginia Rails were found on 8-12 in Wright Co. (ES), on 8-14 Crow Wing Co. (TS), on 10-1 and 10-2 in Hennepin Co. (RR, KG, DB). A peak of 45 Soras was in Sherburne Co. on 9-4 (SR). The very elusive **Black Rail** was at Girard Park, Bloomington, Hennepin Co. on 10-1 (KG); see Note of Interest in Winter 1972. **Loon.** Common Gallinules were in Hennepin Co. from 8-1 to 9-13 (VL, KG), 15 were in Houston Co. on 8-19 (FL), and on 10-5 in Wabasha Co. (WDM). A peak of 15,030 American Coot was counted in Marshall Co. on 9-27 (AR).

Shorebirds: Piping Plovers were in Duluth from 8-12 to 8-26 (JG, FL, RR), and one was in Lyon Co. on 8-5 (HK). Several species of shorebirds lingered into November: Killdeer on 11-28 in Cottonwood Co. (LR), American Golden Plover on 11-4 in Becker Co. (KE), Ruddy Turnstone on 11-11 in Cook Co. (JG, FKS), Greater Yellowlegs on 11-1 in Hennepin Co. (VL) and on 11-12 in Lyon Co. (HK), Lesser Yellowlegs on 11-5 in Grant Co. (KE), and Pectoral Sandpiper on 11-5 in Grant Co. (KE) and on 11-18 in Lyon Co. (HK). A **Whimbrel** was found at Taconite Harbor, Cook Co. on 9-22 (H. Wing); this species is an uncommon migrant on L. Superior in spring, but in fall it is almost unknown here. The only Upland Plover were in Clay Co. on 8-5 (KE) and in Lac Qui Parle Co. on 8-15 (B. Zink). White-rumped Sandpipers were noted 4 times: 8-6 in Cottonwood Co. (LF), 8-7 in Clay Co. (fide EA), 8-26 in Hennepin Co. (OJ), 9-10 Lyon Co. (HK). Long-billed Dowitchers were identified in Duluth, Lyon, Hennepin, Clay, Pope and Grant Cos., the latest in Grant Co. on 11-5 (KE). Short-billed Dowitchers were in Duluth, Lyon, Grant, Clay, Wilkin and Douglas Cos., from 8-17 to 10-18. Stilt Sandpipers are uncommon in Duluth, but on 8-19 22 were found (MMC); a late individual was in Grant Co. on 10-14 (KE). Western Sandpipers are now recognized as regular migrants in the state, and three were noted this fall: 8-17 in Duluth (MMC), 8-26 in Duluth (8-26), and on 9-19 in Mille Lacs Co. (MI). Buff-breasted Sandpipers were at Duluth on 8-10 (MMC) and in Lyon Co. on 8-25 and 9-2 (HK). The only Marbled Godwit was in Lyon Co. on 8-19 (HK); this species usually departs in August and is seldom seen in fall. Two American Avocets were reported from Grant Co. on 8-22 (fide KE), and one was late in Lyon Co. on 10-7 (HK). A Wilson's Phalarope was also late in Clay Co. on 10-8 (EJ).

Jaegers: Any jaeger observation in Minn. is unusual, but this fall all 3 species were reported! The state's first verified **Pomarine Jaeger** was photographed in Duluth on 8-15 by MMC (see photograph and Note of Interest in Fall 1972 Loon). An adult Parasitic Jaeger was also in Duluth on 8-9 (KE), and an unconfirmed report came in from Sam Robbins of Wisconsin that a **Long-tailed Jaeger** was at Rush L. in Ottertail Co. (4 mi. of Fergus Falls) in late August. This species is accidental in Minn. having been reported only 3 times previously.

Gulls and terns: Glaucous Gulls were in Cook Co. from 11-19 to 11-26 (DB, RJ, KG) and at Duluth on 11-13 and 11-19 (JG, KE). An estimated peak of 10,000 Franklin's Gulls was in Grant Co. on 9-4 (KE). A late Common Tern was in Mille Lacs Co. on 10-6 (RR), and a Black Tern was also late on 10-1 in Cottonwood Co. (LF).

Cuckoos: Yellow-billed Cuckoos were much more common than usual, being reported from 8-9 to 9-10 in Houston, Dakota, Wabasha, Sibley, Cottonwood, Hennepin, Wright and Clay Cos. Two Black-billed Cuckoos were late in leaving the state: on 9-24 in Sherburne Co (SR) and on 9-28 in Nicollet Co. (GN).

Owls: The 3 common resident owl species in Minn. occurred in varying abundance. Screech Owls were only noted in Benton, Lyon, Sherburne, and Hennepin Cos., and Barred Owls were almost as uncommon, being noted from Wadena, Wabasha, Ramsey, Sherburne, Crow Wing, Pope, Duluth and Wright Cos. But the Great Horned Owl seems to be on the increase. Two falls ago only 4 counties reported them, last fall they occurred in 17 counties, and this year no less than 20 counties reported them throughout the period. What was termed a "massive influx" was in Wadena Co. from 11-23 to 11-25 (R. Oehlenschlaeger), 20 were banded at Duluth from 11-11 to 11-18 (D. Evans), and in Morrison Co. on 11-1 the rare Arctic subspecies was found (EC). Snowy Owls also turned up quite frequently throughout the state: from 10-17 to 11-28 in Duluth, Cook, Aitkin, Marshall, Sherburne, Lac Qui Parle, and Ramsey Cos. The rare **Hawk Owl** was found in 3 locations: 10-28 at Mt. Iron, St. Louis Co. (fide VB); 11-1 at Onamia, Mille Lacs Co. (MI); and on 11-7 in Itasca Co. (fide JB). A **Great Gray Owl** was at Cotton, St. Louis Co. in October (D. Dewitt), and another was collected (why?) in Wadena Co. on 11-23 (R. Oehlenschlaeger). Ten Long-eared Owls were banded at Duluth from 9-10 to 10-21 (D. Evans), and birds were also found in Kanabec Co. on 10-8 (DB), in Grant Co. on 11-26 (KE), and in Nicollet Co. on 11-30 (GN). Short-eared Owls were recorded from 8-6 to 11-1 in St. Louis, Duluth, Wright, Sherburne and Marshall Cos. The rare **Boreal Owl** was extremely early on 11-9 at Sandstone, Pine Co. (B. Tordoff). Saw-whet Owls occurred at 4 locations: 5 were banded at Duluth from 10-4 to 10-8 (D. Evans), and another was seen there on 10-17 (MMC); 1 at Boyd, Lac Qui Parle Co. on 10-13 (OE); on 11-8 in Crow Wing Co. (TS); and at Ortonville, Big Stone Co. on 11-24 (D. Peterson).

Nighthawk and swift: A peak of 1000 Common Nighthawks was at Duluth on 8-13 (JG) and another group of 300 was in Rice Co. on 10-2 (G. Rysgaard). A late Chimney Swift was observed on 9-30 in Hennepin Co. (PF).

Woodpeckers: A Yellow-bellied Sapsucker was late in leaving Duluth and remained from 11-16 to 12-1 (K. Sundquist). Black-backed 3-toed Woodpeckers were noted 3 times in Duluth on 10-17 (D. Scheer), on 10-28 (K. Sundquist) and on 11-9 (MMC). They were also seen in Wadena Co. on 11-17 (R. Oehlenschlaeger), on 10-22 in Itasca Co. (A. Bolduc), and on 11-2 in Washington Co. (fide EC). One **Northern Three-toed Woodpecker** was at Hibbing, St. Louis Co. on 11-15 (H. Micensky).

Flycatchers: A late Eastern Kingbird was in Cook Co. on 10-14 (fide JG). Western Kingbirds were seen in Lac Qui Parle, Cottonwood, and Anoka Cos. from 8-11 to 8-19 where they are expected, but birds in Cook Co. on 9-1 (JJ) and in Lake Co. on 9-2 (MMC) were unusual. A late Eastern Phoebe was in Sherburne Co. on 10-28 (SR).

Swallows: Late Tree Swallows were seen in Wright Co. on 10-22 (ES) and in Nicollet Co. on 10-23 (GN), while a peak of 1000 was recorded on 10-1 in Washington Co. (EC). A late Bank Swallow was in Lyon Co. on 10-8 (HK), and a late Barn Swallow was in Pope Co. on 10-29 (RJ).

Corvids: A peak of 250 Blue Jays was counted in Duluth on 8-28 (MMC). The invasion of **Black-billed Magpies** this season was unprecedented, to say the least. Over 230 individual were recorded from 8-27 into December throughout the state. In the north where magpies are regular in small numbers in fall and winter, the following totals occurred: Cook (15), Lake (3), St. Louis (34) Aitkin (4), Crow Wing (2), Beltrami (1), Clearwater (5), Marshall (48), Becker (4), Clay (2), and Grant (1)

Cos. In addition, on 10-21 on a day's drive through Beltrami, Clearwater, Pennington, Red Lake, and Polk Cos. over 100 magpies were seen along roadsides (P. Anderson); Magpies reached the southern half of the state at 7 locations: no date, Cannon Falls, Goodhue Co. (1) (fide C. Johnson); 10-22 to 11-8 Big Stone Co. (7) (D. Peterson); 1 in Lac Qui Parle Co. on 10-28 (JS); 1 in LeSeuer Co. on 10-29 (H. Chamberlain); 2 in Carver Co. on 10-30 (fide KH); 1 in Cottonwood Co. on 11-7 (LF); and 1 on 11-23 at Sherburne NWR, Sherburne Co. (SR). A Common Raven was a bit south of its normal range in Wadena Co. on 8-25 (R. Oehlenschlaeger), and a peak of 800 Common Crows was in Sherburne Co. on 10-16 (SR). **Clark's Nutcrackers** also staged an impressive invasion. There are only a handful of previous records for the state, but this fall 6 birds turned up, with more appearing later in winter: 1 on 11-7 at Squaw L., Itasca Co. (fide JB); one at St. John's University, Stearns Co. from 11-8 to 11-11 (N. Ford); another 2 birds were in Cook Co., one on 11-24 and 11-25 (Mrs. L. Scherer), and the other at Grand Marais in Nov. (L. Conway); many observers saw the bird at Christmas L., Hennepin Co. from 11-22 on; and finally in Nov. one was at Tracy, Lyon Co. (fide HK).

Boreal Chickadee, titmouse, Carolina Wren: The fourth species to invade the state this fall was the **Boreal Chickadee**. Birds began showing up south of the northern coniferous forests in September and were almost widespread by December. Two were in Cook Co. on 11-18; 9 birds were observed in Duluth from 9-7 to 10-26; "many" were collected in Wadena Co. from 11-1 to 11-26; 6 were in Crow Wing Co. from 10-1 on; individuals were in Grant Co. on 11-24 and in Morrison Co. on 10-21. Birds from the southern half of the state were: 4 from 11-1 to 11-20 at St. Joseph, Stearns Co. (MC, N. Ford); in Hennepin Co. at least 2 from 11-22 to 11-28 (DB, RR, EJ); 1 in St. Paul, Ramsey Co. on 9-30, 11-28 and 11-30 (JB, P. Fitzpatrick); 2 in Washington Co. on 9-30 in White Bear Lake (J. Olyphant) and on 11-15 in Forest Lake (WHL). Two Tufted Titmoues were found dead on 9-28 at Virginia, St. Louis Co. (fide VB); the only other reports were from Hennepin Co. from 10-28 to 11-23. **Carolina Wrens** were at 2 locations in Hennepin Co.: most of Nov. at Minnetonka (B. Rydell), and on 10-22 and 11-7 in Minneapolis (fide RJ).

Thrasher and thrushes: A late Brown Thrasher was in Hennepin Co. on 11-18 (ES), and another was in Ramsey Co. from 11-18 to 11-23 (JJ). Six **Varied Thrush** were reported from Clearwater Co.: 1 in Bagley on 11-25 and 5 in Gonvick on 11-28 (R. Davids). Wood Thrush were reported only from Hennepin Co. on 9-6 and 9-11 (VL) and from Cottonwood Co. on 10-31 (LF).

Pipits, Bohemian Waxwing, shrikes: Water Pipits were reported from 9-12 to 10-22 in Duluth (3), Wilkin (6), Mille Lacs (at least 8), Pope (1) and Hennepin (1) Cos. A Sprague's Pipit was at Felton, Clay Co. on the late date of 10-9 (EJ). Bohemian Waxwings were recorded in good numbers from 11-7 to 11-30: Cook (20), Crow Wing (50), Cass (115), Beltrami (150), Mille Lacs and Yellow Medicine Cos. There were no less than 22 Northern Shrike reports from 10-9 on, but Loggerhead Shrikes were only found in Duluth and Clay Co.: from 10-15 to 10-18 in Duluth (JG, MMC) and in Clay Co. on 8-5 (KE), 8-20 (fide EA), and 10-31 (LCF).

Warblers: Several species turned up in southern Minn. earlier than usual: Tennessee on 8-6 in Washington Co. (WHL), Blackpoll and Pine in Wright Co. on 8-4 (ES), and Palm on 8-2 in Wabasha Co. (WDM). Many more species lingered later than usual: Black and White on 10-6 in Cottonwood Co. (LF), Orange-crowned on 10-21 in Hennepin Co. (PF, KE), Nashville on 10-27 in Hennepin Co. (WKE), Parula from 10-27 to 11-8 in Cottonwood Co. (LF), Cape May on 10-20 in Crow Wing Co. (TS) and in Duluth on 10-8 (JG), Myrtle in Cook Co. on 11-11 and 11-13 (JG, JP), Palm on 10-23 in Cass Co. (HRH) and in Cook Co. on 11-9 (JP) Ovenbird on 10-19 in Duluth (E. Seelig), and Canada on 11-8 in Hennepin Co. (fide FN). The only Prothonotary Warbler was in Anoka Co. on 8-22 (SC). A Brewster's hybrid was identified on 9-5 in Hennepin Co. (WKE), and the only Blue-winged Warbler was in Lyon Co. on 9-10 (HK); this species is seldom reported away from south-

east Minn. Black-throated Blue Warblers were seen 4 times: In Duluth on 8-9 (KE), on 9-23 and 9-30 in Clay Co. (LCF), on 9-24 in Duluth (RR), and 2 were in Blue Earth Co. on 10-5 (GN). The only Connecticut Warblers were in Hennepin Co. on 8-14 (WKE) and in Wright Co. on 9-9 (ES).

Icterids: The only report of a Bobolink was from Dakota Co. on 8-1 (BH). A late Western Meadowlark was in Lyon Co. on 12-3 (HK). The only Orchard Oriole was in Mille Lacs Co. on 8-10 (MI), and a late Baltimore Oriole was in Ramsey Co. on 10-28 (fide EC).

Finches: Cardinals seem to be spreading northward the past couple years, and this fall there were 3 reports from the north: 8-16 at Gonvick, Clearwater Co. (R. Davids), 11-2 at L. Alice, Hubbard Co. (D. Warner), 11-25 at Onamia, Mille Lacs Co. (MI). A **Black-headed Grosbeak** was reported at St. Paul, Ramsey Co. on 8-4 with the following details: "definite orangish underparts and the bill was large and conical . . . black wings with white patches" (BH). Dickcissels were in Cottonwood Co. on 8-6 (LF), in Clay Co. on 8-7 (LCF), and in Lyon Co. on 8-25 (HK). A possible **Gray-crowned Rosy Finch** was said to have been at a feeder on 10-28 only in Grand Rapids, Itasca Co. The bird was identified as a female of the gray-headed race (?) and would be the fourth state record (G. Helmin). Common Redpolls were not as common this fall and winter, but Hoarics appeared at 4 locations: 11-11 in Hennepin Co. (OJ), 11-12 in Lake Co. (FKS) and in Wadena Co. (R. Oehlenschlager), and on 11-19 in Crow Wing Co. (TS). Red Crossbills were common and widespread throughout the state. Birds were found in no less than 19 counties as far south and west as Nobles, Cottonwood, and Big Stone Cos. Two observers even noted them sitting on utility wires! White-winged Crossbills were not as common; the only reports were: 8-30 in Grant Co. (KE), 9-5 and 11-16 in Duluth (MMC), 10-20 in St. Louis Co. (JG), and 10-23 in Washington Co. (WHL). There were 6 Rufous-sided Towhee reports from 8-16 to 10-14 in Anoka, Duluth, Hennepin, Crow Wing, and Olmsted Cos.

Sparrows: Grasshopper Sparrows were seen in Clay and Mahanomen Cos. on 8-5 (KE) and in Cook Co. on 10-5 to 10-7 (JP). Le Sonté's Sparrows were noted in 5 counties from 8-5 to 9-10: Duluth, Becker, Mahanomen, Lyon and Cottonwood Cos., and there were 2 Sharp-tailed Sparrows in Nicollet Co. on 9-28 (GN) and Clay Co. on 10-9 (EJ). A late Vesper Sparrow on 10-31 was in Murray Co. (AD), and the only Lark Sparrow was seen in Duluth on 8-12 (MMC). Oregon Juncos were identified in Duluth, Hennepin, Clay and Nobles Cos. from 10-10 to 11-15. Five counties reported Field Sparrows, including 2 reports from Duluth on 9-17 (SC) and 10-5 (D. Scheer). A peak of 100 Harris' Sparrows was in Swift Co. on 10-29 (FN). A late White-

crowned Sparrow was seen in Ramsey Co. on 11-14 to 11-18 (JJ) and another was in Sherburne Co. on 11-19 (SR). A White-throated Sparrow was also late in Itasca Co. on 11-23 and 11-24 (MS), as were Fox Sparrows in Morrison Co. on 11-4 and in Hennepin Co. on 11-7 (RJ, PF). **Longspurs:** A peak of 1000 Lapland Longspurs was in northwest Grant Co. on 10-28, and among them were 2 **Smith's Longspurs** (KE). This is the second consecutive fall that they have been recorded in this area. 75-80 Chesnut-collared Longspurs were recorded in the area near Felton, Clay Co. on 8-4 (RJ).

CONTRIBUTORS:

Agassiz NWR staff, AR
Elizabeth G. Anderson, EA
Vera F. Barrows, VB
James A. Baumhofer, JB
Don Bolduc, DB
Betty and Doug Campbell, BDC
E. Campbell, EC
Steve Carlson, SC
Marjorie M. Carr, MMC
Mable Coyne, MC
Mrs. Arnold DeKam, AD
Whitney and Karen Eastman, WKE
Kim R. Eckert, KE
Mrs. O. L. Eckhardt, OE
Laurence and Carol Falk, LCF
Mrs. L. A. Feil, LF
Pepper Fuller, PF
Janet C. Green, JG
Karol Gresser, KG
Harold R. Hanson, HRH
Helen Hatlelid, HH
Bruce A. Hitman, BH
Charles L. Horn, Jr., CH
M. Ivanovs, MI
Robert B. Janssen, RJ
Mrs. E. W. Joul, EJ
Joan Johnson, JJ
Oscar L. Johnson, OJ
Henry C. Kyllingstad, HK
Mrs. William H. Lender, VL
F. Z. Leshler, FL
William H. Longley, WHL
Wynn and Don Mahle, WDM
D. R. Meyer, DM
Mary H. Muehlhausen, MM
Gerald Neimi, GN
Fran Nubel, FN
Jean Peterson, JP
Alden F. Risser, AFR
Richard P. Ruhme, RR
Lester Rupp, LR
L. S. Ryan, LSR
Terry Savaloja, TS
John Schladweiler, JS
Madeline Schuller, MS
Sherburne NWR staff, SR
Evelyn T. Stanley, ES
Forest and Kirsten Strand, FKS

BALD EAGLE-OSPREY STATUS REPORT, 1972

By John E. Mathisen

This report summarizes the 1972 Bald Eagle and Osprey nesting surveys and other pertinent data relative to populations within the Chippewa National Forest. Nesting surveys were accomplished with an airplane and consisted of two separate flights for both eagles and Ospreys. The first flight, during the early incubation period, indicated if nests were occupied. The second flight during the latter part of the nesting period, showed the number of young in previously occupied nests. Eagle flights were made in mid-

April and mid-July. The Osprey surveys were flown in late May and early August with the cooperation of the Bureau of Sport Fisheries and Wildlife, Refuge Division.

BALD EAGLE New Nests and Nest Losses

Ten eagle nests were added to the inventory since the 1971 report. Eleven had either blown down or were considered permanently abandoned. This brings the total number of nests to 142. Since it is not uncommon for eagle pairs to maintain two or more nests within their breeding territory,

the total population figure is something less than the number of nest sites. By careful examination of nest occupancy data and proximity of nests to one another the breeding population of eagles on the Chippewa is calculated to be 110 pairs.

Nesting Success

We observed 137 nests representing 107 of the breeding territories in 1972. Only 68% of the territories were occupied this year. Of these about 55% were successful in raising young birds. This is less than in 1971, but still is close to average for the past

10 years. Average brood size was 1.6, which is about average for the past ten years. A total of 70 young eagles were recorded in July. Table 1 compares nesting data for each year from 1963 to 1972.

Eagle Banding and Research

Thirty-four nestling eagles were banded this year, bringing the total number of banded eagles to 109. Studies continued in cooperation with University of Minnesota and Western Illinois University. Color marking was accomplished on 12 individuals, and four young eagles were radio-tagged.

TABLE 1
COMPARISON OF BALD EAGLE NESTING DATA, 1963 - 1972

Year	Known Nests	Observed Nests	Active No.	Nests %	Successful No.	Nests %	Average Brood Size at Fledging	Young/Active Nest
1963	48	31	20	64	6	30	1.7	0.50
1964	55	46	30	65	12	40	1.2	0.50
1965	76	58	39	67	22	56	1.3	0.74
1966	107	70	52	74	19	61	1.5	0.90
1967	135	67	49	73	21	55	1.4	0.79
1968	142	105	52	49	33	63	1.5	0.96
1969	139	117	60	51	29	48	1.5	0.73
1970	141 (106)	125 (93)	65	52 (70)	35	54	1.8	0.95
1971	143 (107)	130 (99)	65	50 (66)	40	61	1.5	0.94
1972	142 (110)	137 (107)	73	54 (68)	40	55	1.6	0.96

Numbers in () are territories

OSPREY

Twenty-five Osprey nests were found since last year. Eleven had blown down, bringing the total number of known Osprey nests to 104. There are undoubtedly many nest replacements that we are not finding due to their isolated locations and poor ob-

servability. A major aerial search is needed to relocate nests and up-date our inventory.

57% of the Osprey were successful in raising young in 1972, the highest ever recorded on the Chippewa. The results of the Osprey survey are shown in Table 2.

TABLE 2
RESULTS OF OSPREY SURVEY, 1968 - 1972

Year	Known Nests	Observed Nests	Active No.	Nests %	Successful No.	Nests %	No. of Young	Average Size	Young/Active Nest
1968	73	56	40	71	13	32	19	1.5	0.47
1969	89	69	49	71	23	47	50	1.7	1.02
1970	99	71	52	77	28	54	48	1.7	0.92
1971	90	74	49	66	22	45	39	1.8	0.80
1972	104	80	59	73	34	57	60	1.7	1.02

Chippewa, National Forest, Cass Lake, Minnesota

THE BIRDER AND ECOLOGICAL NICHE

By Donald S. Heintzelman

Few birders think of themselves as ecologists, yet most gradually develop an awareness of some basic ecological principles. For example, the importance of learning the habitat requirements for various species is an obvious necessity if one is to locate particular species of birds effectively. Obviously, one would not search for a nesting Olive-sided Flycatcher on the marshes of New Jersey's Brigantine National Wildlife Refuge. But an excursion to the state's salt meadows would be appropriate to see nesting Laughing Gulls. Of course, most birders with a reasonable amount of field experience know the habitat requirements of common species. But what about ecological niche requirements? Within a given habitat, two species can live together only if they occupy different ecological niches. This, stated formally, is the principle of competitive exclusion. That is, two species living together do not carry out **exactly** the same activities in exactly the same habitat or direct competition would result, and one would be eliminated from that particular niche or habitat.

How, then, can a knowledge of niche requirements aid a birder in deriving more enjoyment from his hobby? One way is by allowing him to understand better the workings of food chains and food webs. Let's consider some examples, using first the foraging ranges of wood warblers (Parulidae). Not all warblers seek food in the same locations within their required breeding habitats. Some search for food close to the ground, others at medium heights and still others at the top of tall vegetation. In other words, the ecological niches of the various species are distributed in layers, or stratified, according to the various heights which vegetation attains. Examples of warblers with foraging ranges confined to the lower vegetative strata are: Canada, Kentucky, Prairie and Worm-eating. Species with medium foraging

ranges include Black-and-White, Black-throated Blue, Golden-winged, Blue-winged and Magnolia. Some high foraging species are Blackburnian and Cerulean. However, not all warblers are rigidly restricted to specific strata in conducting their foraging activities. Chestnut-sided and Hooded Warblers, for example, range from low to medium levels; but Nashville and Yellow Warblers move from medium to low ranges. And the Black-throated Green Warbler ranges from medium to high levels in its food gathering efforts. The Cape May Warbler sometimes ranges from high to medium levels.

Other factors which also permit utilization of different ecological niches are differences in a species anatomy or morphology. Among herons and egrets, for example, the Great Blue Heron is able to exploit food sources in deep water because of its long legs. Common Egrets would seek food in shallower water, and Black-crowned Night Herons would confine their feeding efforts to the shallowest water of all. Hence, in these examples, the physical size of the various species determines more or less where each can feed.

Similarly, on the Serengeti Plain in Tanzania as many as six species of vultures may feed upon a carcass. Although there seems to be chaos rather than organization as the birds attempt to feed, each species occupies a somewhat different ecological niche in terms of its food requirements and related physical adaptations for food gathering. For example, the largest species — Lappet-faced Vultures and White-headed Vultures—break open the skin of a dead animal and feed upon skin, sinew and flesh adhering to bones. In contrast, Ruppells Griffon Vultures and White-backed Vultures have unusually long necks which enable them to reach inside a carcass to eat soft internal organs. Additional anatomical adaptations further aid them in exploiting this niche. Finally,

Hooded and Egyptian Vultures are smaller birds with slender beaks. They feed upon scraps of flesh clinging to bones or scattered on the ground near a carcass after the larger vultures and other scavengers have eaten. Additionally, some individual Egyptian Vultures have learned to use stones as tools by lifting them in their beaks and flinging them at Ostrich eggs. After the shell is broken, the vulture eats the contents of the egg, thus exploiting still another food source not normally vulnerable to other birds. (This extraordinary stone throwing behavior of some Egyptian Vultures is an example of true tool use by an animal other than man.)

The woodpeckers (Picidae) of North America have evolved into two branches, each leading to increased specialization. The unspecialized flickers (Colaptes) form the base from which the two woodpecker branches are derived. On one side, the Pileated Woodpecker remains relatively primitive and more or less resorts to behavior and ecological niche affinities similar to flickers. But at the apex of this branch appears the rigidly specialized Ivory-billed Woodpecker whose niche requirements are so specific that the species has become nearly extinct due to loss of most of its required habitat (alternative habitats do not meet its niche requirements).

The other branch of the woodpeckers' evolutionary tree contains species such as the Hairy Woodpecker, whose niche centers upon tree trunks and large limbs, and the nearly identical but proportionally smaller Downy Woodpecker, which occupies a niche on smaller branches and twigs. The Yellow-bellied Sapsucker has a specialized tongue with a brush-like tip, thus enabling it to feed effectively on sap oozing from holes it drills in trees. Finally, at the time of the evolutionary branch, one finds the peculiar three-toed woodpeckers (Picoides). Of course, not all these woodpecker species occupy the same habitats. Some species are distributionally separated.

The fruit-eating behavior of tan-

agers in Trinidad's mountainous Northern Range offers additional examples of niche exploitation and its role in governing bird distribution within a given habitat. Of the island's three attractive *Tangara* species, the Speckled Tanager is mainly a forest dwelling bird. While remaining in a perched position, it picks fruit and eats it whole. The Bay-headed Tanager also eats fruit, but it pecks pieces and sometimes while airborne in manakin-fashion, takes fruit. Finally, the Turquoise Tanager often occurs in flocks. This species also perches to pick fruit and seems prone to pick pieces out of large fruits. Turquoise Tanagers also mandibulate fruit in an apparent effort to reduce its size or eliminate seeds before swallowing it. Mistletoe fruit forms a larger proportion of this tanager's diet than in other species.

These examples deal only with a few aspects of the complex subject of niche requirements of birds. Many important additional factors also can be involved in determining a bird's niche requirements. Nonetheless, even cursory observations of niche requirements offer curious birders an opportunity to derive added pleasure from their hobby. Why merely look at a bird when you can attempt to understand its ecological role? Of course, there are many instances when general birding activities will not enable you to gain insights into the fascinating world of ecological niche. But frequently cursory observations are adequate to hint at an animal's niche requirements. So sharpen your observational skills, and ask yourself probing questions regarding the activities of the birds you see. You may discover something new to science as well as enhance the rewards from your birding activities.

REFERENCES

- Allen, G. M.
1962 *Birds and their Attributes*. Dover Publications, Inc., New York, N. Y.
- Griscom, L. and A. Sprunt, Jr.
1957 *The Warblers of America*. Devin-Adair Co., New York, N. Y.
- Lack, D.

1971 Ecological Isolation in Birds.
Harvard University Press,
Cambridge, Mass.
Snow, B.K. and D. W. Snow

1971 The Feeding Ecology of Tan-
agers and Honeycreepers in
Trinidad. *Auk*, 88: 291-322.
New Jersey State Museum, 205 W.
State Street, Trenton, New Jersey.

notes of interest

HAWK OWL OBSERVATION IN AITKIN COUNTY—During the first week-end of Dec. 1972, Mrs. Carl Orjala who lives 9 miles north of Aitkin in Aitkin County, saw a strange bird flying around her home. She later identified the bird as a Hawk Owl. She saw the bird during the rest of December and into January, when she told Mr. Lloyd Paynter of Aitkin about it. Mr. Paynter called Jo Blanich and me about it and I went looking for it several times during the next week but failed to find it. On January 31, 1972, I saw the Hawk Owl near the junction of highways 210 & 169, which is about 1 mile southeast of the Orjala home. The next day, Steve and Jo Blanich saw the bird trying to roost in a spruce tree in a yard near this junction. The Hawk Owl stayed in this general area until March 4, 1973. It was not seen again until March 9, 1973, when I saw it about 2 miles southeast of the junction. It was last seen on March 13, 1973, in this area. On March 3, 1973, Bob Zink, from Minneapolis, and I found what we thought to be the roost tree of the Hawk Owl. It was a small spruce tree in the middle of a grove of small spruce and pine trees. Under the tree we found about 20 pellets which were found to contain the remains of 30 meadow mice, 1 red-backed vole and 1 star nosed mole. The only sound which I ever heard the Hawk Owl make was on March 9, 1973. It was a soft whistle like the call of a Great Crested Flycatcher. **Terry Savaloja, Box 244, Deerwood, Minn. 56444.**

WINTERING WHITE-THROATS — On Jan. 18, 1973, as I walked by the Northern States Power Plaza on the Nicollet Mall in Minneapolis I heard the unmistakable call of a White-throated Sparrow. I decided that this invitation to postpone my next appointment had to be heeded. I soon located a rather dingy White-throated Sparrow singing from the limb of a small tree in the Plaza's ornamental border. On January 24 I used the noon hour to "bird watch" the N.S.P. Plaza. This time I located not one but a **flock of six** White-throated Sparrows including at least one singing bird. A brief return trip on January 26 turned up only one White-throat that was keeping close company with a male House Sparrow. The evidence seems to establish that Nicollet Avenue now has a flock of wintering White-throated Sparrows. I add that this is not surprising. The recent landscaping projects in downtown Minneapolis using small evergreens, ground-cover plants, shrubs, and trees have proved attractive to White-throated Sparrows during their migrations. This species does not enter this type of urban environment as a confused straggler as do so many other birds. From my observations of the White-throat in these situations, it appears quite able to compete and hold its own with the House Sparrow. It is attracted by popcorn (unbattered), so if you wish to find the White-throated Sparrow in downtown Minneapolis, equip yourself accordingly. **Charles L. Horn, Jr., 5100 Juanita Avenue, Edina, Minnesota 55424.**

Editor's Note: On February 2, 1973, I observed at least three of these birds in the same general area.

FOURTH MINNESOTA OBSERVATION IN 80 YEARS—Very often on my return from doing chores I'd ask my wife, "What kind of bird is that on the feeder?" Many times it was a new bird (to us) like the crossbills, Red-breasted Nuthatch, Hairy Woodpecker, etc. We have been lucky to entice a large number of different species to our feeders. After two years of extensive studying the question became, "What new bird could we possibly see?" The year of 1972 our search and study extended to the warblers and sparrows: we have identified several in both families. Having seen and identified almost every bird for our area other than those of the warblers and sparrows, we set our goal at seeing the Cardinal. The early morning of October 28, 1972 surpassed seeing the Cardinal; on the ground beneath our weather-vane feeder was a new bird far from its territory of the northwestern United States—a female Gray-crowned Rosy Finch (gray-headed race). She was fortunately finding whole sunflower seeds which had been strewn from the feeder by other birds. Binoculars and bird book passed hands rapidly in an endeavor to enjoy and identify this lovely bird before it would fly away. The Rosy Finch stayed with us the whole day which was cold and windy. The female has a subdued pink color on the tail underparts and a pink tinge on the wings. The basic color of the Rosy Finch is brown, its feathers having a scale-like formation. The gray color of the head extends far down on the throat and nape; a **very striking** gray set off by the black forehead and chin. The beauty of this bird cannot be appreciated in writing and we feel very fortunate in seeing this rarely seen bird in Minnesota. **Gary A. & Grace E. Helmin, Route 3, Box 176, Grand Rapids, Minnesota 55744.**

CLARKE'S NUTCRACKER AT CHRISTMAS LAKE — On Nov. 20, 1972, a neighbor called me about a large gray bird with a black and white tail which had just landed on her feeder. I was at a loss to identify it by that description, but the next day a Clarke's Nutcracker appeared on my feeder. Since then he has gone up and down the Ridge Road at Christmas Lake visiting all the feeders. As many as 12 families have reported seeing him (or her?) since then, two of them from across the lake. For the first two weeks many people from the Twin Cities and from other parts of the state came to see the bird, especially during the M.O.U. weekend meeting December 2nd and 3rd. The few who had also seen a nutcracker in the St. Cloud area felt sure this was a different one with somewhat lighter gray coloration. The bird seemed very tame. It is, of course a "camp follower" in the Western mountains, where it belongs, and will eat bread, meat scraps, suet, etc. Now it also eats safflower seed which it picks out unerringly and speedily from a mixture of safflower and sunflower seeds. As far as I could see, he never took a sunflower seed. They were the large ones, however. He might have eaten the small or cracked varieties. My next door neighbors, the Thisses, reported seeing him attacking and pecking at a small rodent (possibly a shrew) and wounding it. Another reported seeing the nutcracker chasing a small bird, picking it up in his beak and flying off with it! He was here for the Christmas Count, even sitting on the eaves of the house for a time. Then he disappeared for several days and I found later that he had been feeding at a feeder on the more protected place in the south-facing slope during the bitter cold weather in the beginning of January. During the second week of January he was seen perching in the same tree as a Great-horned Owl. There was also a Northern Shrike in the vicinity and I was fearful that they had chased him away. But he reappeared at my feeder on January 17th and was here off and on until about January 25th. Others have seen him since several times. As of this writing, February 2nd, the nutcracker is still here at the Brown's feeder. What fun it would be

if we could know where he goes when he leaves us! **Rachael Tryon, Box 114, Route 4, Excelsior, Minnesota 55331.**

Editor's Note: The nutcracker was present all during February and March and was last seen on April 8, 1973.

CATTLE EGRETS AND LITTLE BLUE HERONS IN GRANT CO. HERONRY

After Bruce Hitman discovered Little Blue Herons, Cattle and Snowy Egrets nesting for the first time in Minnesota at Lake Johanna, Pope Co. during the summer of 1971, he mentioned that there was an unconfirmed report of Cattle Egrets nesting at the heronry at Pelican Lake near Ashby, Grant Co. the year before. So when I moved to Ashby in August, 1971 I was on the lookout for Cattle Egrets in the vicinity. None were seen that year, but since I had not made a thorough search (e.g. I never made it out to the nesting island), and since any egrets could have left before I arrived in late August, the possibility still remained that Cattle Egrets used the Pelican Lake rookery. So when spring 1972 arrived, I was determined to definitely establish the absence or presence of egrets in the area. Conflicting and vague reports by local residents of whether or not Cattle Egrets existed in the area in the past were inconclusive, and there was no substantiation of the report of birds nesting here in 1970, as Hitman mentioned. Unfortunately it was a cold spring, and I never got a chance to visit the island in May. I saw only one Cattle Egret in the vicinity, on May 25 about 5 miles NW of the heronry. But this was inconclusive since I saw birds at several other locations in western Minnesota that spring that were far from any known heronry. Because of the cold weather it was possible that if Cattle Egrets nested here they may not arrive until June. So as spring 1972 ended, I still knew nothing for sure, and probably never would until I explored the island. In June and July I was on an extended birding trip out of state, and did not return to Ashby until late July. Sure enough, as I drove past Pelican Lake and approached Ashby for the first time in weeks, there were 6 Cattle Egrets feeding conspicuously in a nearby field. As I continued to see birds at this same location almost daily during the next several weeks, I was fairly sure that the birds were nesting at the heronry. Then on August 5, Bob Janssen, Ray Glassel and Paul Egeland spotted an adult Little Blue Heron in the same area as they were nearing Ashby to pick me up for a bird trip. We immediately returned to the area and saw another Little Blue, a bird that they identified as a second bird since its plumage differed slightly from the first one. Obviously we realized that not only Cattle Egrets but also Little Blue Herons could be nesting on the island. Finally on August 13 I arranged to get a boat and visited the heronry for the first (and until now the only) time. The island is fairly large, about a half mile long and about a third as wide. The terrain is very uneven and the vegetation quite thick, so that covering the island on foot was difficult. I was on the island about an hour and was able to cover only part of the island, and therefore saw only a part of the nesting Double-crested Cormorants, Common Egrets, Great Blue Herons and Black-crowned Night Herons. But after a short time I located a dozen Cattle Egrets roosting in trees, 10 adults and 2 young, finally verifying this species nesting here, the second nesting record for the state (or if these birds were here in 1970, the first?). I found no young Little Blues, but I did locate the 2 adults roosting and flying around the island, so it seems likely that the Little Blue Heron also nests here, which would again only be the second state nesting record. In 1973 I certainly intend to visit the island more frequently and to bird it more intensely to more firmly establish these 2 species as nesters. I saw no Little Blues after August 13, but continued to see Cattle Egrets almost daily until October 10 feeding in the same pasture. Usually there were 5 to 8 birds

present, but on August 28 there was a peak of 40. It is not yet known when these birds arrive in spring, but in fall they seem to leave considerably later than the egrets at Lake Johanna, October 10 being the second latest date on record. **Kim R. Eckert, Box 253, Ashby, Minnesota 56309.**

AN ALBINO BANK SWALLOW — On July 21, 1972 I was observing a colony of Bank Swallows in an alluvial bank along the Mississippi River. It was near the end of the nesting season and there were only about two active nests in the colony of about two hundred pairs. A number of adult swallows along with their recently-airborne young were in busy flight above us when one flight wheeled directly overhead there appeared in its midst one swallow which was completely and perfectly white! I cannot say it was a hatching-year individual but it did fly well, keeping up with the graceful and intricate flight of the entire flock. Several times, when it passed directly overhead, it could be seen perfectly, both with binoculars and with the naked eye. I could not detect even a vestige of ordinary chromatism, neither the wingtips nor the breastband typical of this species; when he flew between me and the sun there appeared the dark silhouette of his body, showing translucently through his white plumage. The observations were made at a distance of about 35-40 feet in bright sunlight against a flawless blue sky and were testified by my co-worker, James Myers, a senior at Macalester College. **R. S. Christman, Macalester College Biology Field Station, St. Paul, Minnesota 55105**

SHRIKE BEHAVIOR — Last fall, a Northern Shrike flew into our back yard, which was filled with Pine Siskins, Fox Sparrows, juncos, and finches. The shrike landed on a siskin, paused for a moment, then flew off with it. The next day, the shrike failed on the first two attempts at birds, but on the third try, picked up a junco without landing, and flew into the woods. On the third day, two Blue Jays were scolding the shrike in a poplar tree. The smaller birds were "frozen" all around the yard. One hapless junco was a couple of branches below the shrike. It was the only bird that moved, and as it flew up off its perch, the shrike flew at the same time, and picked the junco out of the air. The Blue Jays followed the shrike, and all three birds disappeared into the woods. About five minutes later, one Blue Jay was back in the yard with a dead junco, carrying it to a fallen log, and tearing the feathers off, much as a shrike does. We didn't know whether the Blue Jay had made its own kill, which we've never seen happen, or if it had stolen the bird from the shrike. We soon learned the answer, as the shrike flew in again, a few inches above the Blue Jay, making noises that reminded us of a hawk and a Blue Jay at the same time. I would not have recognized it as a shrike, had I not seen the bird. It was very loud and shrill. The two birds fought viciously for quite a few minutes, using talons and beaks. They were extremely aggressive, and though they came near to one another several times, I don't think they actually touched. I watched from a distance of twenty feet, and much to my surprise, the Blue Jay drove the shrike off, and proceeded to devour the junco. Later, that same day, the shrike came back and picked at the feathers, but nothing was left. After the migrating birds had gone for the winter, the shrike fed on shrews. We saw four shrew kills, and the bird took four to five minutes to kill each one. One of the larger shrews took ten minutes. The shrike seemed to have great respect for these little mammals. **Marjorie M. Carr, 1834 Vermilion Road, Duluth, Minnesota 55803.**

BALD EAGLE MIGRATION ALONG THE UPPER MISSISSIPPI RIVER IN MINNESOTA — I observed large migratory flights of Bald Eagles on 2 dates in November 1972. Observations were made during the entire daylight period

on both dates from Route 61 in Wabasha and Winona Counties, Minnesota. Eagles passed low, gliding south over bluff ridges along the Minnesota side of the Mississippi River, with many passing beneath the ridge. Some eagles were undoubtedly missed because those migrating along the extreme west side of the bluff were not visible from my vantage points. The first flight was noted on November 13 while I was positioned about one mile south of Homer, Winona County. The first eagle was seen at 0845 and eagles passed at a rate of approximately 17 per hour until 1330 when the frequency decreased appreciably through sundown. Wind was from the east at 17 mph in the morning, but changed to a northeasterly direction near midday. The sky was heavily overcast, visibility was about 4 miles with occasional brief snow flurries, barometric pressure was 30.23, humidity 73 percent and the temperature ranged from 28 degrees F to 31 degrees F during the daylight. Table 1 lists the Bald Eagles and other species passing the Minnesota bluffs on November 13. From my position about one mile south of Weaver, Wabasha County, I noted a second flight on November 21. No eagles were seen prior to 0930 or after 1545 with most eagles passing during late morning. Heavy overcast with low cloud cover, light fog and intermittent snow flurries all hampered visibility and many eagles were probably missed due to these con-

Table 1. Bald Eagles migrating south along the upper Mississippi River in Minnesota, 1972.

Species	Dates		Totals
	November 13	November 21	
Bald Eagle:			
adult	61	30	91
nonadult	30	8	38
unknown	9	9	18
Golden Eagle	2	-	2
Red-tailed Hawk	8	1	9
Goshawk	3	-	3
Common Crow	55	-	55
Ring-billed Gull	19	-	19
Totals	187	48	235

ditions. Wind was from the north at 12 mph, humidity 79 percent and the temperature ranged from 18 degrees F to 24 degrees F during the day. Eagles seen on this date are listed in Table 1. I was present at the Wabasha County location from November 15 to December 4. Except for November 21, I made 4 to 10 adult eagle sightings daily during this time. These eagles were most frequently seen singularly feeding or resting and showed no directional flights. I suspect they were winter residents counted more than once during the same day or migrants temporarily stopped a few days to feed or wait favorable weather for migration. Of the eagles aged, adults constituted 67 percent on November 13 and 79 percent on November 21, suggesting older birds linger later than young ones. Dunstan (pers. comm.) states that Bald Eagle fledglings leave the parental home range in northern Minnesota from about Sept. 8 to Oct. 14 and wander about, but adults often stay in the home range until after lakes freeze in late November or early December. The other species given in Table 1 followed the same flight paths as the eagles. Unfortunately I could not visit the Wisconsin side of the river to see if similar eagle flights were taking place there also. These observations may aid in learning more about Bald Eagle migratory habits along the upper Mississippi River. **Jan G. Reese, St. Michaels, Maryland 21663.**

POSSIBLE BLACK BRANT — On October 31, 1972 I observed a Black Brant with a group of approximately 60 Whistling Swans. The first observation was from ¼ mile away using a B & L 15-60 power spotting scope. My first impression was the bird was a dark Blue Goose, but the bird was too small and dark. I was able to get within 150-200 yards of the bird. The breast and feet were black with the belly dark. The white collar was absent (an immature?). I made no notes on dimension other than size. There was a male Mallard close enough for comparison and they both looked the same size. The swans were loafing on a ditch spoil in Agassiz pool. The brant was walking around on the spoil (the spoil lacked vegetation) and appeared to be feeding. The following day (November 1) I looked in the same area but neither the swans or the brant were there. I did not see the bird again. **Thad L. Fuller, Agassiz National Wildlife Refuge, Middle River, Minnesota 56737.**

CAROLINA WREN SEEN IN ST. PAUL — On July 25, 1972, I noted a Carolina Wren near my home in St. Paul. The bird was first noticed by its song, which consisted of somewhat ventriloquial and difficult to describe, loud, ringing phrases, repeated very rapidly. The very moment the song was heard, I knew the identity of the bird, for I had heard Carolina Wrens in Iowa during the spring of 1972. This species' song is so distinctive that, once heard, it will never be forgotten. The singer soon came into view. It was in a dense hedge of honeysuckle and barberry. Only about 18-20 feet from the bird, I observed it with 7x50 binoculars. Sky conditions were partly cloudy, and the time was about 4:00 P.M. The bird appeared to be a large wren, with an outstanding white eye line extending onto the nape, reddish-brown or rufous back and tail, and tan or buff-colored underparts. On the next day, July 26, 1972, the bird was again heard singing loudly at about 6:15 A.M. It has not been seen or heard since. Roberts (1932, volume 2, p. 97), lists a nesting record for 1927 in the "outskirts of St. Paul." Since then, this species has been recorded sporadically here, mostly during the fall and winter months. This, to my knowledge, is the first observation for the Highland area of St. Paul. **James A. Baumhofer, 1884 Berkeley Ave., St. Paul, Minnesota 55105.**

RED-WINGED BLACK AND WHITE BIRD — Last Thanksgiving Day morning November 23, 1972, my son Brad and I went out for a couple hours of birding in the Hennepen County Elm Creek Park Reserve. While counting a small flock of blackbirds we were very surprised to find a partially albino male Red-winged Blackbird. Its head was nearly all white with a yellow buff area around the base of the bill. Many flecks of white were observed on the back while the bird was at rest in a small tree. Some of the secondaries were also white. We observed the bird make several short flights. While in flight large areas of white were noted on the wings and tail. The red epaulets and the yellow margins were of normal color. A second sighting of what I am very certain was the same bird was made April 1, 1973. This sighting was also made in the Elm Creek Park area. **Oscar L. Johnson, 7733 Florida Circle, Brooklyn Park, Minnesota 55445.**

RECOVERY OF A BANDED ROSE-BREASTED GROSBEEK — A Rose-breasted Grosbeak male banded in St. Yon Valley, St. Mary's College, Winona, on June 16, 1971 was recovered by Amealia Elias in Guatamala, March 20, 1972. Miss Elias reported the bird was in good health and released. Although she lives in Guatamala City, she netted the bird at Choatalum. This is the first recovery we have had reported after four summers and one winter of banding in the Valley except for one American Goldfinch last winter killed by a

cat in Goodview, Minnesota. So far this winter we have recovered three Slat-colored Juncos banded in November 1971. **Brother Theodore Voelker, F.S.C., St. Mary's College, Winona, Minnesota.**

FEMALE BARROW'S GOLDENEYE IN MINNEAPOLIS — During the winter of 1972-73, a female Barrow's Goldeneye was twice seen during the course of a behavior study of Common Goldeneyes wintering on the Mississippi River. The bird was watched for a total of about four hours as it swam about in a large raft of Common Goldeneyes located north of the Broadway Avenue Bridge in Minneapolis. Observations were made at a distance of 50-90 yards with the aid of a 20x spotting scope. A review of Barrow's Goldeneye reports in **The Loon** indicates that positive identification of Barrow's females has been rare. The bird was first noticed on January 21, 1973, after it flew into the raft site with other Common Goldeneyes. Its head feathers were noticeably darker than those of nearby Common females. The forehead rose abruptly then leveled out in a flattened crest. The body and breast was colored a brown-grey; no white could be seen on the wing feathers. The most striking feature of this bird was an all-yellow bill, which contrasts with the Common females in which only the bill tip turns yellow. Johnsgard reports the yellow bill to be characteristic of the western population of Barrow's Goldeneyes. Identification of this bird was confirmed a month later on February 21 when it performed a courtship display. On this occasion, the female briefly followed a Common male which swam past in front of her. The bird then made alternate, side-to-side pointing movements with its head, towards nearby birds. This particular inciting display is not performed by the female Common Goldeneye. Except for this short period of display, the bird never participated in courtship activities of the Common Goldeneyes. The bird acted aggressively towards adult males which approached too close. **Rodney D. Saylor, 405 Ent. Fish & Wildlife, University of Minnesota, St. Paul, Mn. 55101**

VARIED THRUSHES IN MILLE LACS COUNTY — On February 15, 1973, at a photo club meeting in Aitkin, Minnesota, Mrs. Harriet Sinell from Isle, Minnesota told Jo Blanich and me about a Varied Thrush at Wahkon in Mille Lacs County. On February 17, 1973, Steve & Jo Blanich and I went to the Art Berg farm at Wahkon to see the thrush. When we arrived there, we found that there was not one, but two Varied Thrushes. One thrush had an incomplete breast band and the other thrush had a complete breast band. One bird had arrived at the Berg's farm in early November 1972 and the other bird had arrived in late December 1972. Both birds stayed until March 21, 1973. **Terry Savaloja, Box 244, Deerwood, Minn. 56444.**

GYRFALCON IN AITKIN COUNTY — On January 28, 1973, we were returning from the MOU winter meeting at Grand Marais on Hwy. 169 several miles east of McGregor, Minnesota, in Aitkin County, when we saw a white phase Gyrfalcon flying toward the highway in front of the car. When it came close to the highway and the car, it flew up and over the front of the car. The Gyrfalcon was almost pure white with a long square tail and long pointed wings. It flew across a small field and through a small grove of trees and out of sight. We continued to look for it for about a half hour but did not see it again. The time was about 4:30 P.M.; the sky was clear. Besides myself, others who saw the Gyrfalcon were Steve & Jo Blanich and Mark Carlson. **Terry Savaloja, Box 244, Deerwood, Minn. 56444.**

GRAY-HEADED JUNCO RECORD — Our winter feeding stations became even more interesting than usual with the appearance of an unusual junco. We recorded it as an Oregon Junco on our fall report for 1972. In further checking on juncos in Field Guide to North American Birds and Field Guide to Western Birds we discovered our mistake. The bird was a rare-Gray-headed Junco. The sides, head and breast were ash-gray and the back was bright rufous. The bill was all yellow of the Northern race. The bird feed close to the house so we had a very good look at it. It fed on screenings, we get at the elevator, with Slate-colored Juncos and other birds. The bird came in November and was here every day until February 24, 1973. **Mrs. Oscar Eckhardt, Boyd, Minnesota 56218.**

Editors Note: The above record represents the third record for the state for the Gray-headed Junco. Also this is the first winter record for the species. The other two records are for the fall from the northeast (**Loon** 41:10 and 42:29).

LATE ROSE-BREASTED GROSBEAK — Sometime late in November 1972 Mr. R. B. Maxwell, 508 Glenview Court, Winona, Minnesota noted a female or young Rose-breasted Grosbeak at her feeder. The bird remained throughout December and was seen by Ray Glassel, Paul Egeland and myself on December 31, 1972 at Mrs. Maxwell's feeder. The bird was last seen on January 4, 1973 by Mrs. Maxwell. That night the temperature dropped to a -25° in Winona and the bird was never seen again. **Robert B. Janssen, 14321 Prince Place, Hopkins, Minnesota 55343.**

REQUEST FOR COWBIRD DATA

I would like to obtain some assistance from MOU members. I'm interested in collecting some data on bird species which hatch and feed young Brown-headed Cowbirds.

The information I need is as follows:

Date of observation

Location of Observation (At least county)

Species feeding the cowbird

Number of cowbirds being fed

Were any of the young of the feeding species present?

Please send this information to:

Robert E. Holtz
Assistant Professor, Biology
Concordia College
275 N. Syndicate Street
St. Paul, Minnesota 55104

THE TRAGIC LIVES OF TOM, DICK, HARRY, AND CYNTHIA

(A Study in Pecking Orders)

Because some parents had cleaned the barn and taken down a swallow's nest with four young swallows in it, and because their little girl was in my summer school class, four little wayfaring Barn Swallows made their way to Northwoods Audubon Center and the Naturalist's maternal touch.

Netting insects for four yellow mouths was a big chore, so I worked them into a hamburger diet, supplemented by insects. I did this, despite the problem of some future cattleman blaming one of my swallows for flying off with one of his cows.

From the beginning I knew it would be a challenge for the swallows to survive. I carried them everywhere with me so that I could give them constant attention. They were approximately three days from hatching when I received them.

They were dubbed Tom, Dick, Harry, and Cynthia by their godmother, Judy Gentz, and they were given a place in our family, even accompanying us, and the Gentzes, on a camping trip to Albert Lea.

Tom had asserted himself immediately as the one with the biggest mouth, the longest neck, and the loudest "peep." He was always the initiator of the "I want to eat" call. At times they would all call in unison, but never would Dick, Harry, or Cynthia call first. After Tom was satisfied Dick would call next and Cynthia, the runt of the litter, would wait until everyone else was fed, usually feeding every third time, and rejecting efforts to force feed her. It was not unusual for the other three to step on Cynthia in an effort to get closer to the food.

Cynthia died on the third day and was buried in Helmer Myre State Park. She was never destined to survive. Immediately after her demise, Harry assumed the submissive position, moving to the rear and allowing Tom and Dick to feed, while going hungry himself.

Harry died on the fourth day and was fed to my Great Horned Owl, Wart, - returned to nature. Tom and Dick were both on the healthy side, beginning to feather, and actually competing for food. Tom evidently reigned supreme, for even though I alternated between feeding Tom first and then feeding Dick first, by the sixth day Dick was skipping meals and submitting to Tom's dominance.

On the seventh day Dick was fed to Wart - he had died during the night. Tom seemed passive on the seventh day, and soon regained his appetite. His strength was sufficient to support himself on my finger.

He needed to be handled, to be stroked and talked to, and encouraged to move him from lethargy. Perhaps there is a need for companionship as well as dominance in a nest. I tried playing a recording of Barn Swallows to encourage him, but stroking and talking seemed to be the key.

Tom, Dick, Harry, and Cynthia may have been exceptions, but to me they were proof that the pecking order exists in nestlings as well as adults.

by Mike Link
Director-Naturalist
Northwoods Audubon Center
Sandstone, Minnesota

PURPOSE OF THE MOU

The Minnesota Ornithologists Union is an organization of both professionals and amateurs interested in birds. We foster the study of birds, we aim to create and increase public interest in birds and promote the preservation of birdlife and its natural habitat.

We carry out these aims through the publishing of a magazine, **The Loon**; sponsoring and encouraging the preservation of natural areas; conducting field trips; and holding seminars where research reports, unusual observations and conservation discussions are presented. We are supported by dues from individual members and affiliated clubs and by special gifts. The MOU officers wish to point out to those interested in bird conservation that any or all phases of the MOU program could be expanded significantly with gifts, memorials or bequests willed to the organization.



SUGGESTIONS TO AUTHORS

The editors of **The Loon** need articles, shorter "Notes of Interest" and black/white photos. Photos should be preferably 5x7 in size. Manuscripts should be typewritten, double-spaced and on one side of the sheet with generous margins. Notes of interest should be generally less than two typewritten pages double-spaced. If reprints are desired the author should so specify indicating number

required. A price quotation on reprints will be sent upon receipt of information.

Club information and announcements of general interest should be sent to the Newsletter editor. See inside front cover. Bird-sighting reports for "The Season" should be sent promptly at the end of February, May, August and November to Mrs. Janet Green. See inside front cover.

TABLE OF CONTENTS

HAWK-OWL

Photo by Lloyd Paynter (see page 19) Front Cover

THE PRESIDENT WRITES 3

MORTALITY AMONG BIRDS, MAMMALS AND CERTAIN SNAKES ON 17 MILES OF MINNESOTA ROADS
by Alan B. Sargeant and James E. Forbes 4

THREE MINNESOTA "BIG DAYS" - A SUMMARY
by Kim R. Eckert 7

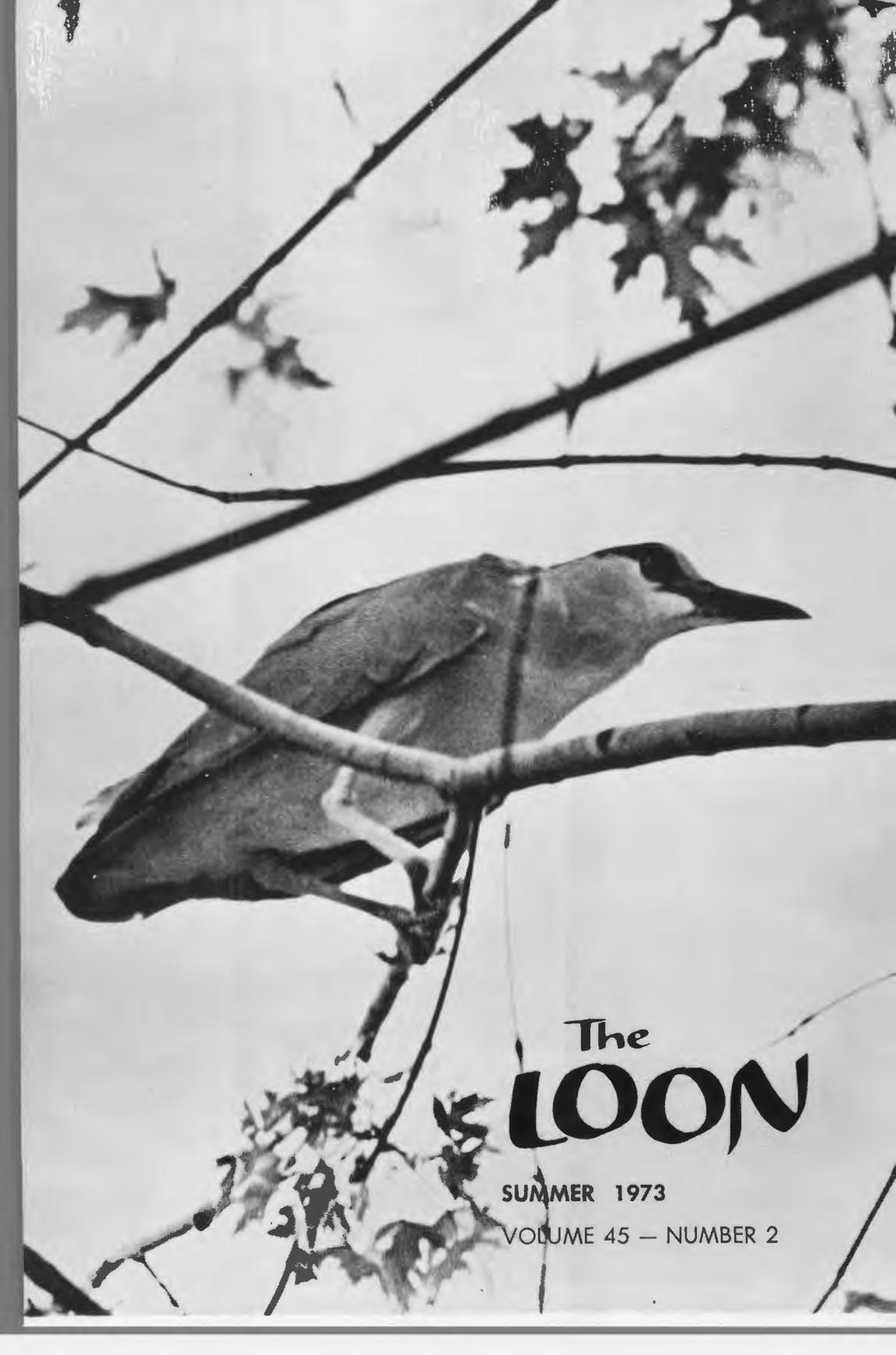
MINNESOTA BIRDING AREAS - T. S. ROBERTS SANCTUARY
by Donald R. Bolduc 10

THE 1972 FALL SEASON - Aug. 1 to Nov. 30
by Kim R. Eckert 11

BALD EAGLE - OSPREY STATUS REPORT, 1972
by John E. Mathisen 15

THE BIRDER AND ECOLOGICAL NICHE
by Donald S. Heintzelman 17

NOTES OF INTEREST 19



The
LOON

SUMMER 1973

VOLUME 45 — NUMBER 2

The LOON Minnesota's magazine of birds and nature, is published four times each year by the **Minnesota Ornithologists' Union**, the statewide bird club. Permanent address: J. F. Bell Museum of Natural History, University of Minnesota, Minneapolis 55455. Anyone interested in birds and nature may join. Any organization with similar aims may affiliate. All MOU members receive our two quarterly publications: **The Loon** and the **MOU Newsletter**.

MEMBERSHIPS AND SUBSCRIPTIONS: Karol Gresser, 8850 Goodrich Ave., Bloomington, Minnesota 55437. To join the MOU and receive both MOU publications, send Mrs. Gresser \$4 for a regular yearly subscription. Or other classes of membership that you may choose are: Family \$5 yearly; Sustaining \$25 yearly. Life \$100. Also available from Mrs. Gresser: back issues of **The Loon** (\$1 each ppd.) and MOU checklists of Minnesota birds (20 for \$1 ppd.). Gifts, bequests, and contributions to the MOU Endowment Fund should also be sent to Mrs. Gresser.

EDITOR OF THE LOON: Robert B. Janssen, 14321 Prince Place, Hopkins, Mn. 55343. (phone 938-7464). The editor solicits articles, short notes, and black/white illustrations about birds and nature. See back cover for details. Associate Editors, Kim R. Eckert and Paul Egeland.

"The Season" section of **The Loon** publishes reports of bird sightings throughout Minnesota. We particularly desire reports from parts of the state that have been neglected or covered lightly in past reports. To become a contributor to "The Season," request the report forms from the **EDITOR OF "THE SEASON," Mrs. Janet Green, 9773 North Shore Drive, Duluth, Mn. 55804.** (area 218, phone 525-5654).

EDITOR OF THE MOU NEWSLETTER: Mrs. Marlyn Mauritz, Route 4, Box 886, Excelsior, Minn. 55331. Publishes announcements and reports about activities of the MOU and its affiliated clubs. (Club officers should keep both MOU editors informed.)

MOU OFFICERS

PRESIDENT: Bill Bryson, Route 2, Alden, Minn. 56009

FIRST VICE PRESIDENT: Jack Mauritz, Route 4, Box 886, Excelsior, Minn. 55331

SECOND VICE PRESIDENT: Pepper Fuller, 14505 McGinty Road, Wayzata, Minn. 55391.

SECRETARY: Jo Blanich, Box 96, Crosby, Minn.

TREASURER: Karol Gresser, 8850 Goodrich Ave., Bloomington, Minn. 55437 (phone 612-831-5714).

MOU COMMITTEE CHAIRMEN

RESEARCH AND RECORDS: Mrs. Janet Green, 9773 North Shore Drive, Duluth, 55804.

FIELD TRIPS: Roy Zook, 5520 Warwick Place, Minneapolis 55436.

MEMBERSHIPS: Mrs. Josephine Blanich, 101 Birch St., Crosby 56441.

EDUCATION: Mike Link, Sandstone 55072.

NOMINATIONS: Mrs. George Stanley, 213 Janalyn Circle, Minneapolis 55416.

UNIVERSITY COORDINATION: Dr. Harrison Tordoff, Bell Museum of Natural History, University of Minnesota, Minneapolis 55455.

NATIONAL AUDUBON COORDINATION: Edw. Brigham, Route 4, Red Wing 55066.

PUBLICITY: Kathy Heidel, Route 5, Box 108, Excelsior 55331.

CONSERVATION AND RESOLUTIONS: Dr. Bruce Keyworth, 1926 South Lane, St. Paul.

THOMAS S. ROBERTS AWARD: Mrs. Herbert Richardson, 5215 Thrid Ave. S. Minneapolis.

FINANCE AND ENDOWMENT: Ross Wagner, Box 171, Mountain Lake.

HOTLINE: Donald Bolduc, 4211 Blaisdell Ave., Minneapolis 55409.

SLIDE FILE LIBRARY: Wally Jiracek, 5814 Portland Ave., Minneapolis 55417.

HISTORIAN: Mrs. Harvey Putnam, 1407 Woodland, Duluth 55803.

AFFILIATED CLUBS OF THE MINNESOTA ORNITHOLOGISTS UNION

ALBERT LEA AUDUBON SOCIETY:

President: Bill Bryson
Route 2
Alden, Minnesota 56009

M. O. U. Representative: Mrs. Olive Nelson

AUDUBON SOCIETY OF FARGO-MOORHEAD

President: Mrs. Leslie Welter Jr.
Box 579
Moorhead, Minnesota 56560

M. O. U. Representative: Mrs. Wm. Wyatt
AVIFAUNAL CLUB

President: Mr. Harding Huber
2109 Squire Lane
New Brighton, Minn. 55112

M. O. U. Representative: Mr. Robert Janssen

COTTONWOOD COUNTY BIRD CLUB

President: Lester Rupp
Mountain Lake, Minn. 56159

M. O. N. Representative: Ross R. Wagner

DULUTH AUDUBON SOCIETY

President: Mrs. Janet C. Green
9773 N. Shore Dr.
Duluth, Minn. 55804

M. O. U. Representative: Mrs. Marjorie M. Carr

GRINDSTONE LAKE AUDUBON SOCIETY

President: Michael Sommer
100 Third Ave. N.E.
Pine City, Minn. 55063

HIAWATHA VALLEY BIRD CLUB

President: Mr. Jay Hamernick
1297 W. Wincrest
Winona, Minn. 55987

M. O. U. Representative: Dr. Donald Mahle

MINNEAPOLIS AUDUBON SOCIETY

President: Miss Theodora Melone
2601 Sunset Blvd.
Minneapolis, Minn. 55416

M. O. U. Representative: Mrs. George Stanley

MINNEAPOLIS BIRD CLUB

President: Miss Jane Spence
125 E. Broadway
Osseo, Minn. 55369

M. O. U. Representative: Mr. Walter Jiracek

MINNESOTA BIRD CLUB

President: Mr. Manley Olson
1974 W. Summer St.
St. Paul, Minn. 55417

M. O. U. Representative: Dr. W. J. Breckenridge

MINNESOTA RIVER VALLEY AUDUBON CLUB

President: John Rehbein
512 Portland Place
Bloomington, Minn. 55420

M. O. U. Representative: Horace Chamberlain

ST. PAUL AUDUBON SOCIETY

President: Gary Ash
Route 1
Newport, Minn. 55055

M. O. U. Representative: Kathy Engstrom

THE PRESIDENT WRITES...

Two big orange school buses pulled over to the edge of the country road and sixty-five eighth-graders and five instructors piled out. After a brief session on what they might see they followed their resource host-for-the-day down a farm field-road to a pond and marsh area between the corn and soybean fields and a hay meadow. For the next couple of hours they watched broods of ducklings in the ponds, wondered at the numbers of swallows and Yellow-headed Blackbirds, and were introduced to marsh wrens, rails, a pair of American Bitterns, and many of the other birds of the marsh. Their attention turned to the myriad of aquatic life present in the clear shallow water. This, they were told, was the life-support system for many of the birds they had seen, the food chain of the marsh. They asked questions about the bird life, the muskrats, the insects and crustaceans, and about the scarcity of such ponds. They wondered aloud why our county should be so determined to build a road through this place.

When they left they were buzzing over what they had seen today and planning tomorrow's field trip, a jon-boat float trip down the Cedar River with emphasis on birding.

This was one group of the Albert Lea Public Schools summer science program. Admittedly, this is a special group of young people because they are in this class because they want to be. This is environmental education in action. The Albert Lea program, a leader in many respects, is one of many similar programs in the state. The programs are optional to those students with special interests in the out-of-doors.

A special kind of outdoor education was available to many of us who attended the one-room country schools that were once so great a part of our education system. It was pretty much a do-it-yourself project but each walk to school was a field trip of sorts. We had one teacher in my school who kept a "spring arrival" bird migration chart on the wall and encouraged rivalry among the entire student body (seven students) to be the first to identify the spring arrivals. Her reward to the students for good class work was an all afternoon walk through the woods to the nearby lake. These informal beginnings of outdoor education were heavily dependent upon the interest of both the students and the teacher.

M. O. U. members have long participated in these environmental education programs. Many of us have helped lead field trips, given talks in classrooms, and assisted in program development.

We have also been active in efforts to implement a comprehensive environmental education program in public schools throughout Minnesota. Mrs. Evelyn Putnam was on a committee that developed a very comprehensive inter-disciplinary approach to conservation education, as it was then called, in the late 1950's. I represented the MOU at all of the meetings of the Minnesota Association for Conservation Education during the late 1960's.

Last spring the Minnesota Environmental Education Council appointed six five-man regional advisory committees to assist in selecting candidates for appointments (by the governor) to regional environmental education councils. MOU members were on three of these area committees and I am sure that the MOU will be well represented when final council appointments are made. We, the MOU, can and will play a role in environmental education in Minnesota in the future.

Bill Bryson

A STUDY OF THE PIG'S EYE LAKE HERON COLONIES

By
A. MICHAEL ADAMS
JAMES BUNN
BRUCE S. DAVIS
ANN L. JONES
L. W. ODNE

SECTION I: INTRODUCTION

Pig's Eye Lake lies southeast of downtown St. Paul in the flood plain of the Mississippi River. In many ways, the nature of the lake and the lands that surround it is reminiscent of the man for whom it is named, Pig's Eye Perrant. One of the first permanent settlers in this area, Perrant is popularly portrayed as an ungainly, rough and corrupted individual, willing to sell his whiskey to whomever could pay the price.

The Pig's Eye area also is ungainly, rough and corrupted. Its north end has been used as a garbage dump. Effluent from a municipal sewage plant is spreading from its western shores. Heavy industry, railways and river barge traffic surround and permeate the area. Currently, Northern States Power Company is fighting for permission to build extensive coal docking and storage facilities along most of the length of the area's southwestern edge.

Probably not unlike Perrant, however, there is another side to Pig's Eye area, and that is the beauty and diversity of its unique bird population. especially prominent in this avian community are the Black-crowned Night Herons, Great Blue Herons and Common Egrets that daily wing their way back and forth from essentially metropolitan feeding sites to nest in two colonies located near the south end of Pig's Eye Lake.

This paper is based on research conducted by two graduate and three undergraduate students at the University of Minnesota to meet the requirements of Zoology 5-007, Ornithology. Although all students in the course

were assigned bird study plots, the Pig's Eye study area is unique in that almost no scientific data has been collected on birds in reference to that specific habitat.

That the area is unique from a biological point of view is now indisputable. A major finding of this study is that the Black-crowned Night Heron Colony located at Pig's Eye is the largest by far to be discovered in Minnesota since the early 1940's. Based on counts of active nests in use this year, a minimum total of 1,120 adult Black-crowned Night Herons now reside at Pig's Eye. Probably upwards of 1,000 chicks are also there, in the nestling stage of development. In addition, 102 Great Blue Herons and 136 Common Egrets, with chicks, are on the study area. At a minimum, 1,358 adult herons and egrets now reside in the two colonies located at Pig's Eye.

Why the birds have moved to St. Paul in such numbers is unknown. It is known that herons and egrets tend to select nesting areas as a function of food availability. Evidently, the numerous lakes, marshes and potholes in the Twin Cities area now better meet food requirements of the Black-crowned Night Herons than do many other localities in the state.

According to Robert B. Janssen, Editor of the Minnesota Ornithologists Union's *Loon* magazine, the importance of the Black-crowned Night Heron discovery cannot be overestimated. He points out that the last huge colonies of these birds were in evidence in the 1940's. One colony at Heron Lake in Jackson County had 5,000 nests. Another, in Ramsey County, had 1,060 nests. Total nests at Pig's Eye Lake number 816, but not all are active. By 1965, the Heron Lake colony was reduced to 50 nests. The Ramsey colony no longer exists.

Janssen states that since the 1940's, discoveries of Black-crowned Night



Black-crowned Night Herons at Pig's Eye
(Bruce G. McKee)

Heron nests have been sparse, and that ornithologists have been concerned that the species was on the decline, at least in Minnesota. The Pig's Eye discovery would seem to cast a new light on that question.

While the population count was an important aspect of this study, many other facets of ornithological and vegetational research were carried out.

For example, habitat requirements and correlations to the Pig's Eye site are provided for the 61 other species of birds found on the study area. In addition, a nearly complete vegetational analyses of the land surrounding the heron colonies is provided and correlated to behavior and habitat selection.

In the seven-week period from April 24 to June 9, 1973 a total of 385 man-hours were spent on the island or in University libraries making observations, collecting data and doing ethological research. Data analysis and creation of the final report took an additional 185 man-hours.

It is the purpose of this report to provide a data base which can be used by future researchers to better understand herons, egrets and birds in general, as related to a huge, industrialized metropolitan area.

SECTION II: METHODS

A major portion of this paper revolves around the analysis of crown cover in the study area. To obtain data for this analysis, a point-quarter sampling technique was used. This procedure involves following a compass bearing for a fixed distance between each of at least 50 different points. At each point, the working area is divided into four quadrants by visualizing a line perpendicular to the compass bearing of the transect. In each quadrant, the tree closest to the point is selected for measurement.

Measurements taken during this study were diameter at breast height (dbh) and crown height. In addition, the distance from the sample point to

the base of each tree was recorded, as was the percentage of ground cover between the point and each tree. Trees were recorded by species. Ordinarily, only trees with a dbh of at least four inches were selected for measurements.

Two transects were run on the island, one down the eastern side and the other down the western side. On the eastern transect, sample points were a paced distance of 45 feet apart. Fifty-three points were used for a total of 212 trees. The total transect was 2,385 feet long. From time to time, the compass heading of the transect was changed in keeping with the changing direction of the woods itself. This is an accepted practice in this type of sampling technique. Midway in this transect, a 300 x 700 foot area of dense willow saplings was skipped in order that the entire transect might not be biased.

The western transect consisted of fifty points that were sixty feet apart, for a total distance of 3,000 feet. In all, measurements were taken on 198 trees. At two points, only three trees were available for use as the transect was on the edge of bodies of water. The distance between sampling points was increased in this transect due to the nature of the western woods which contains less trees per acre.

Compass headings were determined by use of a Bruntnet field compass. Rulers and tape measures were used to determine dbh. All height estimation was accomplished by collaboration among members of the research group to insure accuracy and consistency.

Behavioral observations were gathered by individual group members sitting near the colonies.

Methods and techniques used for the study of nest and habitat selection are explained in Section V of this report.

As time did not allow, statistical testing of the research data was not carried out. Instead all data was treated mathematically, after consultation with statisticians. It was felt that such

treatment of the data was legitimate and valid.

Special thanks are owed to the Game and Fish Division of the Minnesota Department of Natural Resources for loan of a boat to reach the otherwise inaccessible island, to Bruce McKee for the black and white pictures that appear in this paper, and to Marilyn E. Opheim for graciously typing the final manuscript.

SECTION III: DESCRIPTION AND VEGETATIONAL ANALYSIS OF STUDY AREA

Description

The Pig's Eye Lake area lies in the Mississippi River flood plain of southeastern Ramsey County, approximately two and one half miles from downtown St. Paul. Located below scenic river bluffs, it is an area heavily disturbed by man and encompasses between three and four square miles. Pig's Eye Lake itself covers approximately 368 acres, and is connected by a north-south channel to the Mississippi River.

According to testimony by James T. Shields before the St. Paul Port Authority on October 17, 1972, Pig's Eye Lake essentially is a man-made resource. Prior to the construction of dams downstream on the Mississippi River, the lake was a vegetated, marsh-like area rather than one of open water. Maintenance of a higher and more stable water level during the non-flood stages of the year has converted this marsh into a shallow, open-water lake, according to Shields.

At best, the physical environment at Pig's Eye is inhospitable. Levels of pollution are high and seem to be increasing. Contributing to this is leaching from an abandoned city dump north of the lake, as well as continuing effluent disposal from the Pig's Eye Sewage Treatment Plant on the northwest. The lake itself, according to Shields, has a median depth of three feet, and 95 percent of the water area is less than four feet deep. The deepest section (12 feet) is in the dredged channel connecting the southern tip of

the lake to the Mississippi.

Bordering this channel on the east is the Red Rock Industrial District. Barge traffic into the channel is heavy. In addition, barges are moored along the southwestern tip of the Pig's Eye area in dredged channels protected from the mainstream of the river.

The present study considers only the extreme southeastern portion of the Pig's Eye district. Approximately one square mile in area, it is a former peninsula now separated from the mainland to the north by a 30-foot-wide, man made canal. This canal runs from the southwestern corner of the lake to the barge channels leading to the Mississippi on the west.

The northern limit of the study area is southwestern Pig's Eye Lake and the 30-foot canal. To the east is the barge channel separating the study area from the Red Rock Industrial District. On the west and southwest is the Mississippi River and the mooring channels.

The study area, hereafter referred to as the "island", was selected primarily because of the two heron colonies located there. The colonies occupy approximately one-sixth of the island. Since an additional goal of this study was to survey all bird species using the Pig's Eye area, all remaining land on the island is considered to be part of the study area.

In keeping with the rest of the Pig's Eye area, the island has been heavily disturbed by man. Several roads, evidently used for logging, transect it. Heavy equipment has been used to remove gravel from the island's center, leaving a swath of little vegetational growth. In addition, the island has been inundated by waters from the river at flood stage, with the corresponding accumulation of log jams, river debris and sand along its 4,750-foot length. Such flooding evidently has created some of the channels (wet and dry) that divide the southern part of the study area.

Possibly due to man's influence (by logging or clearing), the composition

of the woods running along the eastern and western perimeters of the island differ in terms of species dominance. While the northern end also is heavily wooded, in part, that section of the study area is dominated by a **Typhus** marsh and sand dune environment that occupies approximately one-seventh of the island.

Both heron colonies are located in the western woods. The colony containing only Black-crowned Night Herons, begins at approximately the center of the western shoreline and extends 870 feet to the south. At its greatest width, it extends approximately 660 feet inland. The shoreline of this colony actually is located on a bay formed by a flood-stage channel. The southern arm of this channel divides the Black-crowned Night Heron colony from the colony further to the south that contains Black-crowned Night Herons, Great Blue Herons and Common Egrets.

The southern, mixed colony is nearly surrounded by water, with the Mississippi on the west and the flood channel on the north and east. It is

approximately 600 feet long and 330 feet across at its greatest width. Visual inspection indicates that the section of woods containing this colony was less recently disturbed than sections on the rest of the island, with correspondingly larger trees in evidence.

To analyze tree cover and ground cover on the island, two transects were run using the point-quarter method of sampling. One transect began near the southeastern end of the island and proceeded northward through the eastern woods portion of the study area. A section of about 650 feet along this transect was not sampled, as it contained only willow saplings.

A second transect began in the southwestern portion of the island and ran continuously through the western wooded area in the northwesterly direction. This transect ran through the approximate north-south midline of each heron colony.

The predominant ground cover on the island is nettle. By June 6, these plants were three to four feet high on much of the island. North of the older



Great Blue Heron over the "Island"
(Bruce G. McKee)

woods that, in part, houses the mixed colony, there were numerous green ash, maple, and boxelder seedlings and saplings. Possibly shade has discouraged such growth in the older, less disturbed woods.

Tree cover on the island was analyzed for relative species density, relative species dominance and crown height. In addition, crown heights were grouped into 5-foot classes for further analysis. The eastern transect sample contains 212 trees, while the western has 198.

Analysis of the two vegetational transects tends to confirm impressions formed by an immediate visual inspection of the study area. While the taller trees are on the island's western side, for instance, generally thicker stands of smaller trees are on the east. Using the point-quarter method, it was found that concentration of trees in the eastern transect averages 91.68 per acre. There were 67.47 trees per acre in the western transect.

In terms of species density, maple overwhelms the eastern transect, comprising 44.34 percent of the trees in the transect (Table 1). While it is also the most prevalent species in the west, cottonwood, American elm, willow and boxelder offer a good balance. The ramifications of large quantities of maple on the east can be visualized if the relative mean heights of maple, cottonwood and American elm are considered. On the mean, cottonwood towers above maple, while elm also is significantly taller. This accounts for the visual impact of the high-crowned western woods versus the medium-height eastern community.

SECTION IV: GENERAL INTRODUCTION TO BLACK-CROWNED NIGHT HERONS, GREAT BLUE HERONS AND COMMON EGRETS

Although many aspects of plant and animal life in the Pig's Eye lake study area are considered in this report, the major emphasis has been placed on Black-crowned Night Herons, Great Blue Herons and Common Egrets.

As do most birds, members of the Family Ardeidae have a relatively ela-



Common Egret
(Bruce G. McKee)

borate set of behavioral displays that are used to communicate on an intraspecific as well as an interspecific level. With the exception of courtship displays, which were concluded before the Pig's Eye study began, most of the behavioral rituals credited to the Ardeidae family were seen on the island.

Representative of these, the Black-crowned Night Herons would frequently assume the "upright frontal" threat posture, which consists of extension of the head and neck and slight feather erection. Another threat posture often seen in the night heron colony was the "forward display", involving a low horizontal crouch, with the head and neck completely retracted and the bill in a horizontal position, aimed directly at the opponent. The "full forward" threat of this species is characterized by extreme erection of its plumes.

Great Blue Herons have similar "upright" threat postures and also displayed at various times "aggressive upright", "forward threat", and "full forward" positions. The aggressive upright display is similar to the upright, but with the head, neck and feathers more erect. In the forward threat position, Great Blue Herons retract the head and neck, while the bill is held down. The full forward posture con-

sists of full feather erection, with the head and neck in a horizontal plane and the bill pointed toward an opponent.



Great Blue Heron
(Bruce G. McKee)

Common Egrets show displays very similar to those of the herons. In addition, a "see-saw" display is used, which consists of alternate stabbing and retreating motions by two combatants.

Also in evidence during the latter part of the study were behavioral traits associated with care and feeding of the young. This was seen especially with adult Great Blue Herons who would insert the tip of the beak into the mouth of the young and regurgitate material for short intervals of time.

The relief ceremony of the Common Egret was a frequent occurrence observed in the southern colony. The relieving mate approaches the nest and alights either in a nearby tree or the nest tree itself. Loud croaking ensues, plumage is displayed and wings are upraised by the approaching bird, which then travels from branch to branch until the incubating spouse is reached greeted and caressed. The latter bird then lifts its head, raises its plumes and departs.

During this mating season, most of the heron and egret chicks were hatched by the third week in May. On June 9, two young Black-crowned Night Herons estimated to be about five weeks of age were seen sunning themselves on a branch near their nest. That same day, two chicks of the same age were found dead on the ground within ten feet of one another, apparently blown off their nest.



Black-crowned Night Heron
(Bruce G. McKee)

In terms of reaction to human disturbance during the study, all three species would utter alarm calls. This was most noticeable with the Black-crowned Night Herons, whose piercing "Qwauk" would greet anyone approaching too close. During the latter stages of the study, when the colonies proper were actually entered, the birds would rather remain on the nest or lift off temporarily, fly in a short arc, and return. A minor, but constant danger to researchers below nest trees was the seemingly high rate of defecation of disturbed birds.

SECTION V: ANALYSIS OF HABITAT AND NEST SELECTIONS BY HERONS AND EGRETS IN THE PIG'S EYE STUDY AREA

Without question, the dominant bird on Pig's Eye study area is the Black-crowned Night Heron. At a minimum, there are this year 560 active Night Heron nests. Of these, 462 are in the northern, unmixed colony.

An additional 98 active nests are on the northern end of the southern (mixed) colony. The southern colony also contains 51 active Great Blue Heron nests and 68 active Common Egret nests.

According to Dr. Dwain W. Warner (Professor of Ornithology, Museum of Natural History, University of Minnesota), it can be assumed that each nest represents a pair of adult birds. This indicates that, at a minimum, 1,358 adult herons and egrets, along with their newly hatched young, are now occupying the Pig's Eye study area. Of these, 1,120 are adult Black-crowned Night Herons.

Shown below (Table 1) is a breakdown of total and active nests in the heron colonies, as well as extrapolated population figures. Due to difficulty in differentiating between inactive Black-crowned Night Heron and inactive Common Egret nests in the southern colony, only total figures appear in that portion of the table.

Table 1
Nest and Population Data from the Pig's Eye Heron Colonies

	Northern Colony			
	Active Nests	Inactive Nests	Total Nests	Estimated Adult Population
Black-crowned Night Herons	462	354	816	924
	Southern Colony			
Black-crowned Night Herons	98	196
Great Blue Herons	51	102
Common Egret	68	136
Total	<u>217</u>	<u>109</u>	<u>326</u>	<u>434</u>
Total for Both Colonies	679	463	1,142	1,358

While documentation of population size is a major aspect of this study, perhaps even more important is the unique opportunity afforded at Pig's Eye to study and compare the unmixed Black-crowned Night Heron colony with the adjacent colony containing Black-crowned Night Herons, Great Blue Herons and Common Egrets. Major questions raised in the beginning and pursued throughout this

study include:

1. Why are both colonies on the western side of the island?
2. Why are there only Black-crowned Night Herons in the northern colony, when the southern colony is a mixture of all three species?
3. According to what criteria do the birds select their habitat and nest sites?

4. What are the nest site relationships between the three species?

5. What seems to be the potential future of the two colonies?

To obtain data from which tentative answers might be drawn, both colonies were carefully surveyed in a joint effort by the research team. Care was taken not to disturb the birds on cold days when temporarily unattended eggs might cool below the critical point. In addition, most data collection for this aspect of the study was made well after incubation was underway and after some nestlings had already hatched, as the birds were not to leave the nest at that time.

Each tree that contained a heron or egret nest was recorded by species and by whether or not it was living. The average height of the nests in each tree was estimated. Nests were recorded by species, when active or known (northern colony). To be considered active, a nest almost always had to have an incubating adult or had to contain nestlings that could be seen or heard. In a relatively few cases, however, nests that were isolated and identifiable by species and had extreme amounts of droppings and egg shells below them were considered active.

Nest Site Selection by Black-crowned Night Herons

As indicated earlier, Black-crowned Night Herons will nest either in trees or on the ground, depending upon



Great Blue Heron
(Bruce G. McKee)

nest-site availability. At Pig's Eye, they select trees. More specifically, the data indicate that the Night Herons prefer nest sites located in a relatively narrow arboreal plane centered from 26 to 30 feet above the ground. It also indicated that certain species of trees, particularly green ash, are preferred for nesting.

In the northern colony, specific height selection would seem to be indicated by the fact that 80.81 percent of the nest trees have crowns higher than 31 feet, while 67.10 percent of the nests are located below 31 feet (Table 2). This means that roughly 80 percent of crown space in the colony is occupied by only 33 percent of the nests, while the lower 20 percent of the overall crown space is occupied by 67 percent of the nests.

Table 2

Comparison of Tree Crown Heights and Nest Heights of Black-crowned Night Herons in the Northern Pig's Eye Colony

Height Class (Ft.)	% Trees in Class	% Trees In or Above Class	% Nests in Class	% Trees In or Below Class
51-55	4.40	4.40		
46-50	9.45	13.85	0.12	100.00
41-45	13.63	27.48	0.86	99.88
36-40	29.23	56.71	12.12	99.02
31-35	23.30	80.01	19.85	86.90
26-30	16.04	96.05	37.38	67.05
21-25	3.95	100.00	23.90	29.67
16-20			5.03	5.77
11-15			0.74	0.74

While the Black-crowned Night Herons at Pig's Eye do seem to actively select against heights over 30 feet for their nests, the lower limit of nesting is probably determined by the inability of the younger and smaller trees to support the nest of a bird as large as the Night Heron. Extrapolation

from Table 2 shows that 94.23 of the nests in the northern colonies are 21 or more feet above ground.

In general, the species of tree does not seem to affect nest height. Table 3 lists the percentage of nests found at different height classes in the six species of trees in the northern colony.

Table 3

Percentage of Nests Found in Each Tree Species in the Northern Colony Grouped into Five-Foot Class Intervals

Height of Nests (Ft.)	Maple	Green Ash	Cottonwood	Boxelder	American Elm	Willow
46-50	0.27					
41-45	0.00		4.96			7.69
36-40	11.72	14.93	12.40		17.02	23.08
31-35	16.89	16.42	28.93	19.40	31.91	30.77
26-30	34.33	48.26	34.71	23.88	42.55	30.77
21-25	26.98	20.40	18.18	43.28	6.38	7.69
16-20	9.54		0.83	5.97	2.13	
11-15	0.27			7.46		

It can be seen that, with the exception of boxelder and willow, the highest percentage of nests in each species of tree occurs from 26 to 30 feet above the ground. Table 4 shows, however,

that only 8.21 percent of the northern colony's Black-crowned Night Heron nests are in boxelder and only 1.59 percent are in willow.

Table 4

Nesting Data for the Northern Pig's Eye Heron Colony Showing Percentage of Nests and Number of Nests Found in Each Species of Nest Tree

Species	Total Nests	% of Total Nests/Species	Total Nests Per Tree	Active Nests	% of Active Nests/Species	Active Nests Per Tree
Maple	367	44.98	1.428	188	40.69	0.732
Green Ash	201	24.63	3.941	131	28.35	2.569
Cottonwood	121	14.93	1.821	71	15.37	1.060
Boxelder	67	8.21	1.489	40	8.66	0.889
Elm	47	5.76	1.880	28	6.06	1.120
Willow	13	1.59	1.300	4	0.87	0.400
	816			462		

A final argument tending to support the hypothesis that Black-crowned Night Herons on the Pig's Eye study area are selecting nest sites by height more than by tree species can be drawn from a comparison of nest and tree crown heights of the northern and southern colonies (Table 5). In the southern, heron-egret colony, the mean crown height of each tree species averages approximately ten feet higher than in the northern colony.

For example, 56.81 percent of the maple trees used for nesting in the northern colony are from 31 to 40 feet tall, while 63.63 percent of the nesting maples in the southern colony are from 41 to 50 feet tall. Despite this fact, the largest percentage of Black-crowned Night Heron nests are found in the 26-to-30 foot height class in the southern colony, just as the greatest percentage is found at that height class in the northern colony.

Table 5

Percentile Comparison of Nest and Tree Crown Heights
of the Northern and Southern Heron Colonies
On the Pig's Eye Study Area

Height of Class (Ft.)	% Nest Trees/Class		% Nest Trees/Class	
	Northern Colony	Southern Colony	Northern Colony	Southern Colony
71-75		0.98		
66-70				
61-65		3.92		
56-60		3.92		
51-55	4.40	6.86		
46-50	9.45	22.55	0.12	
41-45	13.63	22.55	0.86	1.33
36-40	29.23	24.51	12.12	12.00
31-35	23.30	9.80	19.85	30.67
26-30	16.04	4.90	37.38	42.67
21-25	3.95		23.90	9.33
16-20			5.03	4.00
11-15			0.74	

There is strong evidence that Black-crowned Night Herons also select nest sites according to tree species. It is particularly noticeable that they select for green ash. Table 4 provides data on the total number of nests per tree for each species. Similar data are given for active nests. In terms of total nests, in nest trees, there are 3.941 nests per green ash tree in the northern colony. This is more than twice as many as is found in any of the other tree species.

That the selection of green ash is not simply a function of tree crown height can also be demonstrated. Green ash and maple have almost the same mean crown height in the western transect, and the mean height of nests in the two species is almost identical. Yet, maple averages only 1.428 nests per tree.

**Nest Site Selections
by Herons and Egrets in
the Southern Colony**

Visual inspection of the southern colony made it immediately apparent that Great Blue Herons nest higher than Common Egrets and that both nest higher than Black-crowned Night Herons. Analysis of the data collected in that colony confirmed this observation. It was found that 73.34 percent of the Black-crowned Night Herons nest in a crown band 26-35 feet above

the ground. Great Blue Herons tend to nest even higher. While 82.36 percent of the active nests were above 36 feet, 41.18 percent were higher than 40 feet.

The data also makes it obvious that Great Blue Herons and Common Egrets, as well as Black-crowned Night Herons, prefer certain tree species over others for nest sites. Table 6 compares active nest heights in the southern colony, separated according to tree and bird species.

Information provided in Table 6 is based on data gathered from trees that contained the active nests of only a single species of bird. An exception is column two, where total numbers of nests were considered.

It is evident from the table that Great Blue Herons and Common Egrets significantly selected for American elm as nest site trees. While selection could be considered simply a function of tree height, this does not seem to tell the complete story. On the average, cottonwood and willow in the southern colony approximate the mean height of American elm. Based on height alone, they are evidently being selected against. This is probably a function of the physical structures of the trees. The willows in the Pig's Eye study area tend to have flimsy branches joining the trunk at acute angles, while the cottonwoods

Table 6

Comparison of Active Nest Heights According to Tree and Bird Species in the Southern Colony Given in Feet and Percentage

Tree Species	X Crown Height	% of Total Nests	% of Active GHB Nests	X Ht. of GHB Nests	% of Active CE Nests	X Ht. of CE Nests	% of Active BCNH Nests	X Ht. of BCNH Nests
Maple	45.27	27.30	19.61	39	14.71	37.50	38.78	29.93
Gr. Ash	43.16	21.47	5.88	33	19.12	33.33	26.53	29.58
Ct'nwood	50.00	0.92	0	0	2.94	32.50	1.02	32.50
Boxelder	39.00	13.50	0	0	7.35	37.50	30.61	27.78
Am. Elm	53.23	34.05	68.62	43.5	50.00	38.93	8.16	34.50
Willow	52.50	2.76	5.88	0	5.88	37.50	0	0

have such dense crowns that the larger birds would have a difficult time entering and leaving.

It is also apparent Black-crowned Night Herons in the southern colony prefer maple, green ash and boxelder for nest sites. This selection is probably a function of tree crown height. It is interesting to note that boxelder is much more preferred as a nesting site in the southern colony than in the northern. The number of active Black-crowned Night Heron nests per boxelder tree in the southern colony is 1.000, while the corresponding figure in the northern colony is 0.889. This increased selection of boxelder probably is strictly a function of tree size. The mean height of boxelder nest trees in the southern colony is 39.00 feet, while the mean height in the northern colony is 33.78 feet.

Differences between Northern and Southern Colonies That Dictate Heron and Egret Species Distribution

The Pig's Eye study area offers the unique opportunity to compare strictly Black-crowned Night Heron colony to a colony containing Great Blue Herons and Common Egrets, as well as the Black-crowned Night Herons. An obvious question is why no Great Blues and Common Egrets appear in the northern colony, while Black-crowned Night Herons do appear in significant numbers in the southern colony.

It appears from analysis of the data that species distribution at Pig's Eye specifically depends upon tree composition of the two colonies. Table 7 provides comparative data on relative dominance of tree species in the two colonies.

Table 7

Comparison of Relative Dominance of Tree Species in the Northern and Southern Heron Colonies at Pig's Eye Lake

Relative Dominance In Northern Colony		Relative Dominance In Southern Colony	
Species	% Dominance	Species	% Dominance
1. Cottonwood	41.56	1. American Elm	41.23
2. Maple	29.79	2. Maple	35.94
3. Green Ash	16.27	3. Green Ash	9.41
4. American Elm	6.03	4. Willow	7.34
5. Boxelder	4.75	5. Boxelder	5.08
6. Willow	1.61	6. Cottonwood	.97

As shown in the table, cottonwood is by far the dominant species in the northern colony, while American elm dominates in the southern. As Great

Blue Herons and Common Egrets select against cottonwood and willows as nest trees, it is only logical that they would not appear in the northern

colony. American elm trees that appear in the northern colony have a mean height of only 40.08 feet, while the mean height of American elm in the southern colony is 53.33 feet. In addition, only 5.49 percent of the nest trees in the northern colony are American Elm, while the corresponding figure in the southern is 20.59 percent.

Table 7 also shows, however, a relatively high occurrence of maple and green ash in both colonies. Maple is the second most dominant species in both. This would account for the high use by Black-crowned Night Herons of the southern colony. Their preferred nesting site habitat is available. Visual examination of the southern colony showed Black-crowned Night Herons to be limited almost exclusively to the north end of the southern colony, where maple, boxelder and ash predominate. Common Egrets usually occupy the middle third of the colony, where the mixture of tree species is greatest. Great Blue Herons are most prominent in the south end of the colony, where American elm is the dominant tree species.

Consideration of Why Both Heron Colonies Appear on the Western Side of Pig's Eye Study Area

A question considered throughout the study period was why the colonies are both located on the western side of the island. Prevailing winds in the Twin City area are from the west, and it would seem logical that the colonies would be on the eastern, leeward side of the Pig's Eye Study area.

Probably the major factor determining colony location is man. Both colonies are isolated as far south in the Pig's Eye area as possible. In addition, barges moor on the eastern edge of the island along the total length of the study area, with constant activity by man taking place. This has probably kept the birds to the west. It could be argued that barges also moor to the west of the study area, yet inspection shows that mooring area to be generally north of the southern colony. More

important, the Black-crowned Night Heron Colony is protected from the western mooring area by a flood channel and a long neck of land on the western side of that channel.

In terms of tree species availability, maple dominates the eastern transect, with a mean tree height of 33.80 feet. This closely approximates the mean tree height of maple in the western transect of 34.65 feet. Obviously, Black-crowned Night Heron nest sites are in ample supply along the eastern side of the island. While American elm, favored by Great Blue Herons and Common Egrets, is the second most dominate species in the eastern transect, mean height of elms in the east is only 39.95 feet, and probably discriminates against the Great Blue Herons and Common Egrets moving in that direction. The real question, then is why the Black-crowned Night Herons are in the west.

To answer this question, the role of cottonwood must be considered, as it dominates the western transect, especially in the southern colony. That role is believed to be wind protection. Towering above the crowns of maple and ash, cottonwood would seem to provide the protection necessary for the Black-crowned Night Herons, with their flimsy nests, to live on the windward side of the island, and perhaps to live at Pig's Eye at all.

Future of the Heron Colonies at Pig's Eye Lake

From the viewpoint of nest site availability, the future of the Pig's Eye heron colonies looks bright. Every species of tree used for nesting has ample numbers of replacement stock presently growing in or near the colonies. In addition, both herons and egrets will use dead trees as nesting sites. Presently, 17.71 percent of the nesting trees in the northern colony and 6.86 percent of those in the southern colony are dead. Such low percentages would indicate that current nesting trees will be available, either alive or dead, for many years to come.

Two other factors could, however,

eliminate the colonies in a very short time. The first is feeding site availability. The present occupants of the colony seem to use marshes, river backwaters, lakes and potholes throughout the eastern Twin Cities area. If these sites are destroyed either through pollution or suburban development, the colony will undoubtedly be forced to move, as herons and egrets tend to select nesting areas by food availability.

The second major factor is the role of man in and near the colonies. Having already placed themselves as far from man's activity as they can in the Pig's Eye area, the birds have no place else to move. The occupants of the colonies seem to be able to live with the present activity on and near the island. Indeed, there are some very tentative indicators that the Black-crowned Night Heron colony is still expanding. It is believed, however, that a significant increase of activity anywhere on the island or near it would be disastrous to the herons and egrets that nest there.

SECTION VI: CONCLUSION

The major conclusion of this report is that the Pig's Eye study area constitutes an unique biological entity, from an ornithological point of view. Not only does it contain Minnesota's largest Black-crowned Night Heron colony, by far, but it offers an extended variety of habitats that support at a minimum more than 50 other species of birds.

In addition, future use of the Pig's Eye area by North American birds, and particularly the herons and egrets now found there, looks bright, unless man's activity disrupts the study area or destroys the avian feeding sites.

From a strictly scientific viewpoint, the Pig's Eye study area offers another unique situation through the juxtaposition of the two heron colonies. A rare opportunity is afforded here to study evolution and dominance in dissimilar colonies from both an avian and a vegetational point of view.

It is further concluded that Black-

crowned Night Herons at Pig's Eye prefer a relatively narrow band of crown space for nesting, and that nest site selection is based principally on height above ground. It is also concluded, however, that nest site selection also correlates to tree species, with green ash being the preferred nesting tree at Pig's Eye for Black-crowned Night Herons.

A similar conclusion has been drawn concerning the Great Blue herons and Common Egrets. Great Blues nest higher than Common Egrets and both nest higher than Black-crowned Night Heron's.

REFERENCES

- Bent, A. C.
1926 *Life Histories of North American Marsh Birds*. Dover Publications Inc., New York.
- Collingwood, G. H. and Brush, W. D.
1964 *Knowing Your Trees*. The American Forestry Association, Washington, D. C.
- Davie, O.
1900 *Nests and Eggs of North American Birds*. David McKay, Publishers.
- Palmer, R. S.
1962 *Handbook of North American Birds*. Vol. I. Yale University Press, New Haven.
- Robbins, C. S., Brunn, B.; and Zim, H. S.
1966 *Birds of North America*. Western Publishing Company, Inc., New York.
- Roberts, T. S.
1936 *The Birds of Minnesota*. University of Minnesota Press, Minneapolis.
- Smith, R. L.
1966 *Ecology and Field Biology*. Harper and Row, Publishers, New York.

1972-73 WINTER SEASON (Dec. 1 thru Feb. 28)

By Oscar L. Johnson

The winter of 1972-73 was characterized by a colder than average December and a warmer than average January and February. In the Twin City area the average temperature for December was 11.3 degrees F, 6.8 degrees below the normal. The cold weather continued into the early part of January. Mild weather during the remaining part of the month resulted in an average temperature of 17.4 degrees F, 5.0 degrees above normal. The mild weather continued throughout February with an average of 21.6 degrees F, 5.9 degrees above normal. Perhaps the mild weather was the reason for six White-throated Sparrows wintering on the Nicollet Mall in Downtown Minneapolis. Hardly the place you might expect to find this species!

Some additional unusual winter observations were a Barrow's Goldeneye at Ortonville, a first for the western part of the state. Pigeon Hawks were reported from Ortonville and Deerwood. A Hawk Owl was seen by several observers throughout the winter in Aitkin County. A Clark's Nutcracker spent the winter visiting feeders at Christmas Lake, near Minnetonka. Black-billed Magpies, reaching as far southwest as Cottonwood county and Boreal Chickadees, as far west as Lac Qui Parle county were present in invasion numbers. The first winter record of a Hermit Thrush, 12-17 thru 2-24 at Duluth. A tardy Myrtle Warbler, 12-2 in Hennepin county. A Rufous-sided Towhee all winter at Isle. And last but certainly not least a Gray-headed Junco at Boyd for the third state record of this species.

Pied-billed Grebe: 12-17 and 1-7 Ottertail KRE; 2-28 Dakota WHL.

Great Blue Heron: 1-31 Sherburne SRS.

Whistling Swan: 12-1 Duluth J. Avilar; 12-3 Departure date (600) Weaver Bottoms, Wabasha FZL; 12-31 Olmsted JAB.

Canada Goose: 12-1 20,000 present each at Silver Lake, Rochester and Lac Qui Parle Refuge, decreasing to 4,000 at Silver Lake 1-7 and 500 at Lac Qui Parle Refuge 2-28. Present all winter in Crow Wing (1), Otter Tail, Dakota, Hennepin, and Sherburne.

The Loon

Snow Goose: 12-31 Silver Lake (2 adults, 1 immature) JAB.

Blue Goose: 12-31 Silver Lake (1) JAB; all winter Brainerd TS.

Mallard: NORTH 12-24 & 1-26 (1 female) Duluth; 1-9 (30) Grand Marais; all winter (75) Brainerd. SOUTH Reported from thirteen counties. Maximums of 10,000 Lac Qui Parle Refuge on 12-1, Ramsey (300), Anoka (400), Whitewater Refuge 600 on 1-12.

Black Duck: NORTH 1-27 (6) Cook RBJ & DR, Crow Wing (2) TS, Fergus Falls (3) KRE. SOUTH Reported from nine counties in groups up to four. Maximum numbers (30) Winona and (25) Scott.

Gadwall: Present all winter Dakota (8) and Scott 1-1 (25), 1-21 (11), 2-27 (1).

Pintail: 12-27 (2) Scott WHL; 12-31 (2) Rochester JAB; 1-1 (2 male and female) RBJ; 1-7 (1 male) Winona RBJ, DR; 1-12 (1 male) Winona FZL; 2-28 (2) Dakota WHL.

Blue-winged Teal: 12-16 (1) Big Stone DP.

American Widgeon: 12-1 thru 2-28 (1) Edina WHL. **Shoveler:** 12-3 Hennepin CLH.

Wood Duck: NORTH 12-16 thru 2-28 (4) Fergus Falls KRE. SOUTH Reported from 12-3 thru 2-25 as singles or pairs with a maximum of six Scott on 1-1 and 1-21.

Redhead: 1-3 (3) Wright BAH; 1-21 (1) Otter Tail KRE; 2-4 (1 female) Hennepin BDC.

Ring-necked Duck: All winter (1) Otter Tail KRE, 12-31 (1) Olmsted JAB.

Canvasback: 12-16 thru 2-28 (1) Otter Tail KRE; 12-31 thru 2-28 Hennepin WHL; 1-1 (1) Hennepin RBJ.

Lesser Scaup: 12-1 (2) Ramsey JAB; 12-16 Otter Tail KRE; 12-21 (6) Rochester JAB; 2-3 Hennepin CLH.

Common Goldeneye: Reported from five counties NORTH with maximums of ten and fourteen from Cook and Lake on 1-27 and 1-28 Wintered at Fergus Falls and on Lake Superior. Reported from ten counties SOUTH with a maximum of 287 reported on the Mississippi River, Ramsey 12-16.

Barrow's Goldeneye: 12-16 (1 male) Big Stone DP.

Bufflehead: 12-16 (2) Ramsey JAB; 12-12 (1) Big Stone DP; 12-23 (1) Sucker River, St. Louis, M. Kohlbray; 2-18 (1) Ramsey JAB.

Oldsquaw: Reported from Lake Superior by six observers from 12-21 to 1-28 in groups of 6 to 10.

Ruddy Duck: One report. Last seen at Weaver Bottoms by FZL on 12-3.

Hooded Merganser: 12-30 Hennepin RBJ; 12-31 Olmsted JAB; 2-25 Houston FZL. Three to five all winter in Dakota DR.

Common Merganser: NORTH Five all winter Lake Superior. 12-25 Gunflint Lake S. Hedman. SOUTH Reported from Big Stone, Dakota, Wabasha and Winona with a maximum of about 100 Dakota WHL.

Red-breasted Merganser: 12-21 last of season, Duluth JGG; 1-27 Two Harbors KRE; 1-27 Hoveland, Lake MMC.

Goshawk: Reported by 15 observers from the following counties: Aitkin, Becker, Crow Wing, Lake, St. Louis, Anoka, Ramsey, Sherburne and Watonwan. On 12-21 Sherburne Refuge Staff reported 1 adult at feeder! EC, KG, and TS reported observing a very white adult on 2-11 in Aitkin. Only six reports last year.

Sharp-shinned Hawk: 12-2 Big Stone DP, 12-3 (2) Hennepin OJL, 12-6 Duluth Koni Sundquist, 1-1 Ramsey JAB, 1-3 Anoka MF, 1-11 Morrison LSR, 1-19 St. Louis MMC, 1-20 Stearns BAH, 1-23 Nicollet JN, 1-30 Anoka SC.

Copper's Hawk: 12-14, 12-23, 12-28, 1-20 Anoka SC, 12-31 Rochester JAB, 1-2 Anoka MF, 1-18 Sherburne SRS.

Red-tailed Hawk: Reported by ten observers in ten counties. 12-16 (6) Ramsey; 2-24 (4) Wabasha.

Red-shouldered Hawk: 12-16 Sherburne Refuge Christmas Count; 12-31 Rochester JAB; 1-23 and 2-17 Crow Wing TS.

Rough-legged Hawk: Fewer reports than last year. NORTH 12-1 last seen in Marshall AWR, returned 2-4; 12-18 thru 1-6 Duluth area; 2-2 Aitkin TS. SOUTH Reported from Hennepin, Olmsted, Ramsey, Rice, and Sherburne.

Golden Eagle: 12-16 (1a) Sherburne SRS; 12-27 Cook, feeding on road killed deer LOS; 12-31 Winona (2a 1 imm) RBJ; Jan. and Feb. Marshall AWR; 1-5 (1a) Sherburne SRS; 1-7 (1 imm) Goodhue, (1a) Winona DR; 1-12 (1a 1 imm) Winona FZL; 2-4 (2a) Sherburne SRS; 2-24 (1a 2 imm) Winona FZL; 2-26 Sherburne SRS.

Bald Eagle: NORTH Wintered in Crow Wing (2) TS; Itasca, Dixon Lake no date fide MS; 2-9 Mille Lacs (1a) MI; 12-7 thru 2-17 Five reports from Duluth area, maximum of 5, 12-10, Mrs. Williamson; 2-10 Wadena RCD. SOUTH 12-6 (1a) Sherburne SRS; 1-7 Winona RBJ, DR; 1-12 (2a) Winona FZL; 1-21 Wabasha WHL; 2-11 Read's Landing OAR; 2-24 (2a) Winona FZL, (11a 1 imm) Read's Landing WHL; 2-25 (1a) Houston FZL.

Marsh Hawk: 12-18 (5) Weaver JAB; 2-19 Morrison BAH.

Gyr Falcon: Gray phase bird seen in Duluth Harbor area 2-4 and 2-6 BDC, JCG; 2-6 intermediate phase MMC; 1-28 Aitkin TS; EDK reported injured bird from Martin County sent to Mark Fuller U of M.

Peregrine Falcon: 2-15 Sherburne SRS; 2-24 Dakota WHL.

Pigeon Hawk: 12-16 Big Stone DP; 1-23 Crow Wing TS.

Sparrow Hawk: NORTH 12-16 Otter Tail KRE. SOUTH reported by thirty observers from seventeen counties.

Ruffed Grouse: NORTH Reported by 15 observers from 11 counties. SOUTH Reported from Anoka, Goodhue, Sherburne, Stearns, Washington and Winona.

Sharp-tailed Grouse: Reported from Aitkin, Crow Wing, Marshall and St. Louis.

Ring-necked Pheasant: NORTH Reported from Becker, Clay, Grant, Morrison and Otter Tail. SOUTH Twenty-seven reports from twenty-one counties.

Gray Partridge: Reported from Clay (7). Blue Earth (several covies), Dakota (2), Lac Qui Parle (2), Murray (15) Olmsted (13), Rice, Scott (8), Stearns (2), Watonwan (several covies).

American Coot: Wintered at Fergus Falls KRE; 12-1 (2) Wright BAH; 12-3 Hennepin CLH; 12-31 (3) Rochester JAB; 1-1 Scott RBJ; 1-21 Scott DR.

Killdeer: 1-7 New Hartford, Winona Co. FZL.

Common Snipe: 12-16 Ramsey JAB; 12-31 Rochester JAB; 1-1 Hennepin RBJ; 1-7 (1) Winona, (2) Houston FZL; 1-23 Sherburne SRS; 2-18 Ramsey JAB.

Glaucous Gull: 1-10 Knife River FN; 1-27 Beaver Bay MMC; 2-10 (2a 2 second year) Two Harbors JCG. No first year immatures observed. Bad nesting season? JCG.

Herring Gull: Migrants: 12-2 (3) Anoka SC; 12-3 (3) Read's Landing FZL; 12-31 Rochester JAB. Lake Superior: 12-17 (142) Duluth; 12-27 (150) Grand Marais; 12-28 (175) Silver Bay; 1-9 (200) Grand Marais; 1-10 (100) Knife River; 1-27 (25) Cook Co.; 2-24 (200) Lake Co.

Ring-billed Gull: 12-3 Hennepin CHL, only report.

Mourning Dove: NORTH 12-14 thru 1-19 Duluth MMC; 12-16 Mille Lacs DB; 12-16 (2) Otter Tail KRE. SOUTH Reported from Dakota, Hennepin, Houston, Lac Qui Parle, Ramsey, Scott and Sherburne.

Screech Owl: Reported by nine people from Becker, Otter Tail, Big Stone, Dakota, Hennepin, Nicollet, Rice, and Sherburne.

Great Horned Owl: NORTH Reported by twelve observers from eight counties. SOUTH Twenty reports from seventeen counties. Northern race reported from Aitkin and Crow Wing 2-7 thru 3-3.

Snowy Owl: NORTH Reported from Becker, Cook, Marshall and St. Louis, with a maximum of six

birds in the Duluth Harbor area 1-7. SOUTH Reported from Hennepin and Pope.

Hawk Owl: Aitkin Co., first seen by Mrs. Carl Orjala. See photo cover of *The Loon*, Vol. 45, No. 1 and Notes of Interest the same issue.

Barred Owl: NORTH Reported from five counties. SOUTH Reported from ten counties.

Great Gray Owl: 12-26 Meadowlands MMC, JCG; 1-3 Sherburne SRS; 1-27 Northwoods Audubon Center DB, KG, DR; 2-3 West Knife River Road S. Gilbertson fide JCG; 2-25 thru 2-28 Centerville, Anoka Co. EC.

Short-eared Owl: 12-16 Otter Tail KRE; 12-16 Big Stone DP.

Boreal Owl: 1-28 Duluth Mrs. Paine fide JCG.

Saw-whet Owl: 12-19 Houston FZL; 1-13 Anoka MF; 1-4 St. Louis MMC.

Belted Kingfisher: Reported in December from Rice, Big Stone, and Dakota, in January from Wabasha and Winona and in February from Dakota, Ramsey and Nicollet.

Yellow-shafted Flicker: December thru mid-January from St. Louis, Nobles, Ramsey, Otter Tail, Big Stone, Rice, Lac Qui Parle, Swift, and Dakota. Mid-January thru February from Murray, Lac Qui Parle, Hennepin, Dakota, Carver, Swift, and Olmsted.

Red-shafted Flicker: 12-12 and 12-14 Hybrid, Duluth MMC; 12-20 Duluth MMC, good details.

Pileated Woodpecker: Reported from twenty-one counties.

Red-bellied Woodpecker: NORTH All winter Mille Lacs, near Vineland. MI. SOUTH Reported from thirteen counties.

Red-headed Woodpecker: NORTH All winter Deerwood, Crow Wing and Cove, Mille Lacs. Reported also from Morrison 12-19 (3) LSR. SOUTH Reported from Dakota, Sherburne and Stearns (8 all winter).

Yellow-bellied Sapsucker: 12-5 and 1-4 Duluth K. Sundquist. First winter record North. 12-31 Rochester JAB.

Hairy Woodpecker: NORTH Reported from sixteen counties. SOUTH Reported from seventeen counties.

Downy Woodpecker: NORTH Reported from fourteen counties. SOUTH Reported from nineteen counties.

Black-backed Three-toed Woodpecker: 12-16 (2) Hubbard DR; 1-2 Crow Wing TS; 1-13 Hubbard KRE, RBJ, DR.

Clark's Nutcracker: 12-17 Christmas Lake, Hennepin Co. BDC; 2-20 Christmas Lake WHL. See cover photo of *The Loon*, Vol. 44, No. 4.

Horned Lark: December thru mid-January: Grant, Rice (69), Rochester, Cottonwood (272), Winona (15), Olmsted (3) and Otter Tail (4). Mid-January thru February: Anoka (1), Hennepin (8), Sherburne (6), 2-3 Marshall first migrants, 2-4 Otter Tail first migrants, Pope (20), Swift (20), 2-18 Nicollet (250).

Gray Jay: Reported from Aitkin, Becker, Hubbard, Cook, Itasca (3 daily at feeder), St. Louis (Sax and Zim).

Blue Jay: NORTH Reported from 18 counties. SOUTH Reported from 18 counties.

Black-billed Magpie: Clay (Felton), Sherburne (3), Hubbard (2), St. Louis (3 at Duluth dump), Cook (feeding on road killed deer 12-28), Aitkin (maximum of eight 1-3 thru 2-3), Pope, Cottonwood, Mille Lacs (Waukon). One on 12-30 near Claremont, Dodge County and one at Rice Lake State Park, Steele County on 1-5 (Donald Slinger).

Common Raven: Reported from Aitkin, Becker, Beltrami, Clearwater, Cook (up to 50), Crow Wing, Hubbard (6), Itasca, Lake (30 at Little Marais), Marshall, Pine, St. Louis (61), Wadena.

Common Crow: NORTH Reported from nine counties, all winter Beltrami and Morrison; migration: 1-23 Grant. SOUTH Reported from eighteen counties; Houston (100 plus).

Black-capped Chickadee: NORTH Reported from thirteen counties. SOUTH Reported from eighteen counties.

Boreal Chickadee: NORTH Reported from Aitkin, Cook, Crow Wing, Hubbard, Lake, Mille Lacs and St. Louis. SOUTH Hennepin 12-30 thru 2-24, Lac Qui Parle and Ramsey.

Tufted Titmouse: Reported from Hennepin (2), Olmsted (8) and Washington (2 all winter).

White-breasted Nuthatch: NORTH Reported from thirteen counties. SOUTH Reported from sixteen counties.

Red-breasted Nuthatch: NORTH Reported from Becker, Clearwater, Crow Wing, Otter Tail, Pine and St. Louis counties. SOUTH Reported from Anoka, Carver, Dakota, Hennepin, Lac Qui Parle, Ramsey, Rice, Sherburne and Stearns.

Brown Creeper: NORTH Reported from Becker, Crow Wing, Grant, and Otter Tail. SOUTH Reported from Big Stone, Carver, Dakota, Hennepin, Ramsey and Swift.

Carolina Wren: 12-4 thru early March Minneapolis, RBJ, DR, and BDC.

Brown Thrasher: 12-2 Cottonwood Gladys Hartness fide LAF; 12-16 Cottonwood LR; 12-22 thru 1-5 Watonwan EDK.

Robin: NORTH Reported from Becker, Grant and St. Louis. SOUTH Reported from eight counties.

Hermitt Thrush: 12-17 thru 2-24 Duluth reported by JCG, KG, RBJ, FN and DR. First winter record.

Varied Thrush: Early December thru 3-10 (2 males) Waukon, Mille Lacs, KG, RBJ, DR and TS.

Eastern Bluebird: 12-31 Rochester JAB.

Golden-crowned Kinglet: 12-7 Nobles HSH; 12-16 Otter Tail KRE; 12-31 Rochester JAB; 2-11 Swift RZ.

Bohemian Waxwing: NORTH Reported from eleven counties. Flocks up to 100 in early December, Duluth. SOUTH Reported from eight counties. About 100 all winter at Talcott Lake Game Refuge, Cottonwood County LR.

Cedar Waxwing: Reported by eleven observers. Ten reports for December with a maximum of 47 in Hennepin FN. Only one report in January (4) Becker TRS. Two reports late February 2-24 (16) Hennepin OLJ and 2-25 (1) Otter Tail KRE.

Northern Shrike: NORTH Reported from twelve counties. SOUTH Reported from fifteen counties.

Myrtle Warbler: 12-2 Hennepin John T. Pratt, fourth winter record.

Meadowlark, sp: SOUTH December to mid-January, reported by five observers from Dakota, Cottonwood, Murray, Nobles and Watonwan.

Red-winged Blackbird: NORTH one report 12-16 Otter Tail KRE. SOUTH One to fifteen birds reported from Wright, Rice, Houston, Dakota, Sherburne, Hennepin, Scott, and Murray. Flocks from Ramsey (79), Big Stone (5), Hennepin (28), Dakota (60) and Houston (100).

Rusty Blackbird: All winter Crosby, Crow Wing TS; 12-1 Cook JP; 12-3 Pine MMC; 12-16 Otter Tail KRE; 1-1 Scott RBJ, WHL; 1-13 Swift BAH; 2-15 (15) Otter Tail KRE.

Brewer's Blackbird: 12-16 (1) Big Stone DP; all winter at feeder Deerwood, Crow Wing TS.

Common Grackle: Reported by fourteen observers from Cook, Crow Wing, Grant, Otter Tail, St. Louis, Anoka, Big Stone, Carver, Dakota, Hennepin, Houston, Olmsted, Pope, Ramsey and Winona. A maximum of fourteen observed 12-19 Houston FZL.

Brown-headed Cowbird: 1-8 Lac Qui Parle AFE.

Cardinal: NORTH One male seen daily at feeder Deerwood, Crow Wing TS; 12-16 (2) Otter Tail KRE. SOUTH Reported from twelve counties.

Rose-breasted Grosbeak: 12-31 (female at feeder) Winona KBJ. Stayed till 1-4.

Evening Grosbeak: Reported from twenty-four counties throughout the state. Observers reported fewer birds than last year. Largest flock reported (150) Morrison LSR.

Purple Finch: NORTH Reported from Becker, Grant and Ottertail. SOUTH Reported in small groups one to three from Anoka, Big Stone, Hennepin, Ramsey, Rice, Sherburne, Stearns and Swift. Maximum of twenty-five Big Stone, DP.

Pine Grosbeak: NORTH Seen throughout entire

period in small groups of one to ten in Aitkin, Becker, Cook, Crow Wing, Hubbard, Itasca, Marshall, Otter Tail, Pine and St. Louis. Maximums of thirty birds reported: 12-19 Crow Wing TS; 12-28 Lake BDC; 1-28 Silver Bay JCG. SOUTH: 1-11 Hennepin RBJ, one bird.

Hoary Redpoll: NORTH 12-17 St. Louis MMC; 1-26 (5) Crow Wing TS; 1-27 Pine DB; 2-3 Pine RBJ, DR; 2-8 Crow Wing TS. No reports SOUTH.

Common Redpoll: Most reports were for small groups of 2-30 birds. NORTH Reported from Aitkin, Becker, Beltrami, Clearwater, Cook, Crow Wing, Lake, Marshall, Pine, and St. Louis. SOUTH Anoka, Big Stone, Cottonwood, Dakota, Hennepin, Olmsted, Pope, Ramsey, Rice, Sherburne and Swift. Maximums were observed on 1-18 (2-300) Sherburne SRS; 1-22 (90) Crow Wing TS.

Pine Siskin: NORTH Reported from thirteen counties, with a maximum of 300 birds from Morrison County. SOUTH Reported from twelve counties. Maximums of 150 birds reported from Nicollet and Sherburne.

American Goldfinch: NORTH Reported from Becker, Crow Wing (2 daily at feeder) and Otter Tail. SOUTH Reported from eleven counties. Maximums of 25 or 26 reported from Sherburne, Hennepin and Anoka.

Red Crossbill: NORTH Reported from Becker, Clay, Clearwater, Cook, Crow Wing, Grant, Mille Lacs, Otter Tail and St. Louis (up to 30 present at feeder daily MMC). SOUTH Reported from Anoka, Big Stone, Carver, Cottonwood, Hennepin, Lac Qui Parle, Ramsey, Rice, Sherburne, Stearns, Swift and Winona. Maximums of twenty at Ramsey 2-10 BAH and Swift all winter HSH.

White-winged Crossbill: NORTH Reported from Becker (no date); 12-1 (2) Mille Lacs MI; 12-5 thru 12-28 (1 daily at feeder) Duluth MMC; 1-7 (1) Duluth MMC. No reports SOUTH.

Rufous-sided Towhee: At feeder, Isle, Mille Lacs County all winter until 2-4 TS.

State-colored Junco: NORTH Small groups of up to five birds reported from 11 counties. SOUTH Reported from 18 counties with maximums from Rice County of 269 on 12-16 and 200 on 2-27, OAR.

Oregon Junco: SOUTH Reported only from Hennepin County by five observers from late December until the end of February.

Gray-headed Junco: Present from late fall until 2-24 Lac Qui Parle AFE. Third state record.

Tree Sparrow: NORTH Reported from Becker, Crow Wing (5 daily at feeder). Douglas and Otter Tail. SOUTH Reported from twenty counties. Maximums: 12-16 (212) Rice OAR; 2-18 (150) Nicollet JN.

Harris' Sparrow: 12-16 Big Stone DP.

White-throated Sparrow: NORTH Present until about 1-10 Duluth MMC and B. Hoinaki. SOUTH 12-31 Rochester JAB; 1-7 Winona RBJ, DR; 2-26 Sherburne SRS; 1-18 to 2-23 (6) Nicollet Mall, Minneapolis BDC, RBJ, CLH.

Fox Sparrow: 1-1 Hennepin WHL.

Swamp Sparrow: 1-14 Goodhue JAB.

Song Sparrow: 12-6 Big Stone DP; 12-16 Ramsey JAB; 12-31 Rochester JAB; 1-1 Scott RBJ.

Lapland Longspur: 12-2 Clay Elizabeth G. Anderson; 12-31 (16) Olmsted, JAB; 1-7 (2) Cottonwood LR; 2-25 (3) Nicollet JN.

Snow Bunting: NORTH Reported from ten counties. Largest flock: (100) Aitkin. SOUTH Reported from eight counties. Flocks of 50 to 75 reported from Pope County.

CONTRIBUTORS:

Agassiz National Wildlife Refuge Staff
James A. Baumhofer
Don Bolduc
Elizabeth Campbell
Betty and Doug Campbell
Steve Carlson
Marjorie M. Carr
R. Christman
Richard C. Davids
Mrs. Arnold DeKam
Kim R. Echert
Alpha and Fred Eckhardt
Lawrence and Carol Falk

Mrs. L. A. Feil
Norman L. Ford
Mark Fuller
Pepper Fuller
Janet C. Green
Karol Gresser
Helen S. Hatlelid
Bruce A. Hitman
Robert E. Holtz
Charles L. Horn, Jr.
M. Ivanovs
Nancy Jackson
Robert B. Janssen
Oscar L. Johnson
Mrs. E. W. Joul
Earl D. Kopischke
Maria Krogseng
Fred Z. Leshner
Mrs. William H. Lender

Lester T. Magnus
Mary H. Muelhausen
Jerry Niemi
Fran Nubel
Don Peterson
Jean Peterson
Dick Ruhme
Lester Rupp
Orwin A. Rustad
L. S. Ryan
Terry Savaloja
Charles K. Sherck
Lorry A. Scherer
M. Schuller
Sherburne National Wildlife Refuge Staff
Forest and Kirsten Strnad
Tamarac National Wildlife Refuge Staff
Robert Zink

CURRENT STATUS OF WILD TURKEYS IN SOUTHEASTERN MINNESOTA

By Earl D. Kopischke
and Roger N. Johnson

Attempts to establish populations of wild Turkeys in southeastern Minnesota were first made in 1936. At this time the Izaak Walton Club of Rochester released 20 game-farm Eastern Turkeys on the Whitewater Wildlife Management Area. Additional releases of game-farm Turkeys were made in 1955, 1957 and 1959.

The first time wild-trapped Turkeys were released on the Whitewater Wildlife Management Area was in 1964. This release consisted of 9 Merriam's Turkeys (2 juvenile toms, 6 juvenile hens, and 1 adult hen) obtained from Nebraska and 5 Eastern Turkeys (1 juvenile tom, 1 juvenile hen, and 3 adult hens) obtained from Arkansas.

In October of 1965, an additional 13 juvenile wild-trapped Eastern Turkeys from Arkansas were released.

In January of 1968, 12 wild-trapped Merriam's Turkeys obtained from South Dakota were released on the Whitewater Area. These birds consisted of 4 juvenile toms, 3 juvenile hens, and 5 adult hens.

Since 1968, the population of Merriam's Turkeys has continued to increase. During the fall of 1972, several groups of adult hens with young poults were observed by various people. The largest group of Turkeys observed consisted of 30 birds.

During the week of April 16-20, 1973, a Turkey gobbling count was

conducted by Section of Game personnel of the Department of Natural Resources. The count serves as an index and if done in following years, will indicate changes in the Turkey population.

During the census, at least 13 different adult toms were heard in the Whitewater Management Area. Since only the most dominant tom in a flock does the gobbling and subsequent breeding, there probably are 13 different groups of tom Turkeys. The total number of Merriam's Turkeys in the Whitewater Area, however, is unknown. Also, since no Eastern Turkeys have been observed in this area since 1967, it is doubtful that any remain.

The census also indicated that Turkeys have spread into areas adjacent to the Whitewater Area. Three different gobbling toms were heard; one located about 5 miles north of the previous northernmost observation point.

The first release of wild-trapped Eastern Turkeys containing adult toms took place in November of 1971. Thirteen Turkeys were obtained from Missouri and consisted of 4 adult toms, 3 adult hens, and 6 juvenile hens. They were released near Freeberg in Houston County.

During the summer of 1972, 2 broods consisting of 7 poults and 4 poults were observed in the area. Then during the fall hunting seasons for deer and grouse, hunters also re-

ported seeing a group of 13 wild Turkeys. This group consisted of 2 hens and 11 poults and probably was the same group that was seen during the summer. These observations indicate that reproduction had taken place.

The second release of wild-trapped Eastern Turkeys with adult toms took place in January, 1973. They again were released near Freeberg in Houston County. This release consisted of 5 adult toms, 5 adult hens, and 6 juvenile hens.

The Eastern Turkeys, trapped in the wild by the Missouri Conservation Department, were flown to Minnesota the same day they were trapped. Upon arrival, the Turkeys were banded, tagged with colored plastic wing tags, and released. In addition, 2 adult hens were equipped with radio transmitters to aid in following their movements.

During the gobbling counts in April,

1973, 5 different adult toms were heard in the Freeberg Area. They were all heard within 2 miles of the 1972 release site. Only time will tell if the Eastern Turkey will increase significantly. Plans are to release additional wild-trapped Eastern Turkeys either in an area in Fillmore County or in an area in Winona County this coming winter.

So if you think you heard or saw a wild Turkey in southeastern Minnesota, most likely you did. Next you have to decide whether you saw an Eastern Turkey or a Merriam's Turkey. We now have both kinds in that area of the state.

Data for this report was taken from the Minnesota Game Research Quarterly, Vol. 27, No. 1 and from data in Department of Natural Resources files at Forest Lake and Madelia.

RAPTOR REHABILITATION AND CONSERVATION IN MINNESOTA

By Mark R. Fuller, Patrick T. Redig and Gary E. Duke

Minnesota contains many areas of good raptor breeding habitat. The open agricultural lands, hardwood forests, coniferous forests, wetlands and combinations of these habitats provide the diversity and productivity necessary to support many species of hawks, owls, and falcons as well as the Bald Eagle and the Osprey. Additionally, the fall and spring migrations funnel thousands of birds through the state each year, and many overwinter. The encroachment of suburban sprawl upon these habitats and exhaustive year-long recreational use of nearly all the state results in numerous human-raptor encounters. This is particularly true in the greater Minneapolis-St. Paul area which lies near the junction of several habitat types.

The dense human population interacting with the raptor population has resulted in many birds being shot, illegally trapped, and taken from nests. Game farms and commercial hunting

clubs with their concentration of game species, attract raptors. Shooting and pole trapping have caused the injury or death of many birds. People seeking hawks and owls for pets may take all the birds from a nest and then, with little knowledge of, or experience in caring for raptors, end up with undernourished, ill, or injured birds. Diseased or injured raptors are often discovered by people hiking, hunting or driving. As a result of these factors a need has existed for a program involving the conservation and rehabilitation of raptors in Minnesota.

In 1971 Fuller began conducting a radio-telemetry study of various aspects of raptor ecology in Minnesota. In order to test the effects of a new transmitter design on the behavior of hawks and owls, injured birds were sought at a local zoo and state game farm. It was readily apparent that there were several sources of injured raptors but that most birds would need professional veterinary care. Dr. Duke, of the University of Minnesota

College of Veterinary Medicine, who is conducting gastro-intestinal research on owls, volunteered his help. He also contacted Redig, a veterinary student and falconer, who was eager to apply his professional skill to raptors. It was soon decided to establish a comprehensive program of raptor rehabilitation and conservation.

Initially the effort was all made with the authors' own time and financing. Soon, however, the faculty and staff of several departments were donating time and expertise. This work was a new experience for most, but people have been most cooperative in helping with problems. With this assistance much specialized work, such as radiology and orthopedics has been accomplished. Financial assistance for various aspects of the program has also been contributed by the Raptor Research Foundation, the Frank M. Chapman Memorial Fund, Duluth Audubon Society, Hawk Ridge Nature Reserve, the Minnesota and St. Paul Humane Societies, a National Institutes of Health Training Grant, the Minnesota Ornithologists' Union and other individuals and organizations.

The cooperation of Dr. John B. Moyle and other employees of the Minnesota Department of Natural Resources and Dr. C. A. Swanson, William Halstead and members of the Bureau of Sport Fisheries and Wildlife have greatly contributed to the success of the program. Additionally, members of the various bird clubs in the state, the local humane society, zoo, managers of hunting clubs and several falconers have helped to locate birds and submit them to us. Newspapers, television and radio stations throughout the state have carried requests that residents having injured raptors contact us. These organizations and the news media have also helped spread information regarding the raptor's place in the ecology of the environment, and the laws pertaining to their protection. Cooperation of this nature has been paramount in establishing the program.

To date, these efforts have given

results that encourage the continuation of the work. Many people still harbor the misconception that all hawks and owls are poultry killers. Response to newspaper articles and other media has indicated that the public is interested in, and receptive to, information about raptors. Talks to local nature groups, such as the Issac Walton League, and bird clubs, gave these interested people more specific knowledge about hawks and owls and they in turn pass it on to others. The education of the general public with regard to the raptor's place in the environment may be one of the most important factors in conserving raptor populations.

Professional ornithologists, falconers, educators and state officials have joined in an effort to strengthen the state protection afforded to raptors, and to insure that falconry can continue and contribute to management and conservation efforts. Falconers in the state have been encouraged to organize and cooperate in every way possible. With the present concern for the environment and the aesthetic values more and more people are finding in nature, education about raptors can go a long way toward preserving these birds.

Relocation of nuisance hawks and owls has been instituted at two private hunting clubs, and one state game farm. In the past steel pole traps or guns were used to eliminate raptors, but at these three concentration areas for prey species, the use of a Swedish Goshawk trap proved to be effective in keeping predation down to levels similar to those obtained by the former methods. Two of these areas set and maintained a trap throughout the fall, the third allowed a falconer to trap on weekends. A total of five Red-tailed Hawks, one Cooper's Hawk, 10 Goshawks, two Broad-winged Hawks, two Red-shouldered Hawks and twelve Great Horned Owls were trapped. Dr. H. Meng (1971) provides additional data from a similar project in New York, where the Swedish Goshawk trap was as effective as pole trapping.

The Swedish Goshawk trap and the verbalail are suited to the needs of these hunting clubs and game farms because they are effective, but need only be checked periodically. Other devices, such as the balchatri-trap and bow-net, require more continuous attention, but can also be used effectively. Once trapped, the raptors were released in suitable habitats away from game concentrations, on nature areas, or in the case of fall migrants, some distance south of the capture site.

We are seeking the assistance of state and federal officials to encourage a switch to humane methods of live-trapping. The pole trap is indiscriminate and exists as a potential danger to all raptors. If a pole-trapped bird does not die in the trap it usually sustains injury. Of seventeen pole-trapped Great Horned Owls we have received, only four had injuries minor enough to allow them to be released immediately, four were eventually released, nine were permanently disabled or died as a result of their injuries. Hopefully, future legislation will dissuade users of this technique. However, manpower for proper enforcement of laws is seldom adequate. Therefore, the introduction of alternative successful trapping techniques may prove more valuable in saving birds from the gun and pole trap. Falconers, federal bird banders and conservation workers might be encouraged to help trap and relocate raptors. In states where regulations permit, a falconer could obtain a bird, formerly destined to be shot, through such cooperative efforts.

In the past year and a half we have received over 120 injured and diseased raptors from throughout the state. Unfortunately, in the early stages of the project we received birds only after people had tried to care for the birds themselves. These cases were usually beyond help because of advanced stages of disease, shock malnutrition, or dehydration. As knowledge of our work spread, cases were received soon enough for our treatments to be effective. A total of ninety birds were

treated from January 1972 to March 1973 for a variety of illnesses and injuries. (Table I). Thirty of these birds were able to be released again. In addition to receiving many of the common species, representatives of several species such as the Bald and Golden Eagles, Peregrine Falcon, and Gyrfalcon that are uncommon in many parts of the country were also treated (Table I). Our most frequent patients were Great Horned Owls that were injured by pole traps (Table I).

The regimens of therapy applied to these birds is in general the same that would be applied to any injured and debilitated animal. Inasmuch as the majority of the birds received had injuries to the extremities the following discussion will be confined to a description of the management of these. Our first concern was to stop blood loss. This was best done by locating the source of the bleeding and applying pressure with the fingers until bleeding ceased. Then, the rest of the body was palpated for other injuries such as lacerations or fractures. A swab was usually passed down the esophagus into the stomach to determine if there was hemorrhage in the upper gastrointestinal tract. The debris was cleaned from open wounds, dead tissue was removed, and wounds were packed with antibiotics. At this time we also formulated some notion of the nutritional status of the bird. Broken wings or legs were bound against the body to prevent further injury while the bird was brought through the process of being nutritionally and metabolically stabilized. Only after this stabilization has occurred should one consider subjecting the bird to the stress of surgery to reduce fractures.

To bring about this nutritional stabilization the bird was fed a good high protein diet for several days. Most birds are dehydrated by the time they are received and treatment for this will also have to be considered. In the case of the bird that was dehydrated or could not or would not eat solid food, a slurry consisting of boiled coke

TABLE 1, SUMMARY OF RAPTOR INJURIES (JAN., 1972 TO MARCH, 1973)

Species/ Injury	Pro- jectile	Pole Trap	Accident	Malnu- trition	Disease	Total
Red-tailed Hawk	8	2	1		2	13
Sparrow Hawk				5		5
Red-shouldered Hawk	1					5
Broad-winged Hawk	4			1		5
Rough-legged Hawk	1					1
Marsh Hawk	2					2
Sharp-shinned Hawk			1			1
Goshawk	5	2	1	1	9	18
Peregrine Falcon			1			1
Gyrfalcon			1			1
Bald Eagle	2	2	1			5
Golden Eagle	1					1
Screech Owl	1					1
Barred Owl	3	1	1			5
Long-eared Owl	1		1			2
Snowy Owl	2		2			4
Great Horned Owl	6	17	1			24
TOTAL	37	24	11	7	11	90*

* Raptors treated prior to 1972, and those that died before treatment, or were dead on arrival are not included in this total.

or lactated Ringer's solution, raw eggs, vitamin supplements and finely chopped meat was fed via stomach tube. After a couple of days, light meat such as the breast of pheasant was introduced into the diet, with roughage being given at a later time.

When surgery was indicated for the repair of injuries, we began with radiographs to determine the extent of injuries. A technique consisting of 43 KVP, 300 MA, for 1/20 sec at forty inches from the table top proved to be satisfactory for the extremities for a bird the size of a Red-tail. A ventral-dorsal shot was usually made, occasionally followed by a lateral view. No anesthesia or sedation was required although the bird often was restrained with masking tape.

For treatments requiring anesthesia we relied almost entirely on Ketamine (Ketaset, Parke-Davis, Detroit, Michigan) given at a rate of 20-40 mg/lb. This produced sufficient anesthetization for completion of most procedures. Once anesthetized, the bird could be intubated and put on metofane or halothane and nitrous oxide anesthesia for longer procedures. A

Bald Eagle was held in the surgical plane of anesthesia for five hours this way. By using acepromazine (Acepromazine, Ayerst Labs, New York, New York) in combination with ketamine, the dosage of ketamine could be reduced by about thirty percent and a much smoother recovery was produced, i.e. when the anesthetic wore off the birds stood up with little involuntary flapping of the wings or thrashing of the legs. This combination has been used only in a Broad-winged and two Red-tailed Hawks and needs further evaluation. We observed a considerable variation in dose/response with ketamine.

Most fractures involving the extremities were stabilized with intramedullary pinning. Pins were usually left in five to six weeks, but this is dependent on the degree of healing and should be monitored radiographically. Wings were brailled for the first two to three weeks and legs could be further stabilized with a modified Schroeder-Thomas splint. Brailing was usually sufficient for fractures of the digits and radius. Stainless steel pins were obtained very cheaply by pur-

chasing stock material from an industrial jobber. The pins then cost about \$.20 instead of the usual \$.40-.50.

Other than failure to heal due to vascular impairment, there were few complications involved with the surgical corrections of fractures. Infection of the bone was seldom seen. Occasionally an unusually large inflammatory reaction occurred which tended to create a post-surgical arthritis and ankylosis of nearby joints. We believe that this can be controlled to some extent by the local injection of Depo-Medrol, (Upjohn, Kalamazoo, Michigan) a long acting steroid, once callous formation is well underway.

Many raptors have been saved but left permanently disabled. Our efforts with these individuals have been to place them where they will be most useful. For instance, the North Woods Audubon Center has an excellent educational and exhibition program which gives many people the chance to see these raptors and learn about them. Also, some school systems and nature centers have personnel qualified to care for and speak about raptors. Other hawks, owls, and falcons have been used in research on physiology, telemetry, diseases, chromosome studies, blood analysis and anatomy studies. Still others have been turned over to captive breeding projects. These permanently injured birds are used to the fullest extent, but they still represent a problem inherent in the medical aspects of rehabilitation.

In addition to the treatment of injuries, much of our effort was involved with the study of and treatment of aspergillosis in Goshawks. Our data came from two sources; a field survey done on wild birds trapped at Hawk Ridge Nature Reserve, Duluth, Minnesota, during an extensive immigration of Goshawks during the fall of 1972, and from clinical cases seen in birds captured by falconers and those injured birds found by people throughout Minnesota.

A total of 49 Goshawks were trapped in bow nets on two different days, October 8 and October 17, 1972, and

their tracheas were swabbed. These swabs, cultured on Sabarouds agar, showed that 26 birds had cultures positive for *Aspergillus fumigatus* and 23 were negative. The significance of these results is difficult to assess. For example, in eight captive Goshawks with clinical signs of aspergillosis, five cultured positive for *A. fumigatus*, and three died from the disease; three cultured negative yet, two of these died of aspergillosis anyway. Our conclusion is that more than 50% of the population we sampled carried the aspergillus organism and that, as a result, these birds may or may not at some time become ill.

The clinical signs associated with aspergillosis usually began to appear three to four weeks after the Goshawks were shot or captured. This supports the often mentioned hypothesis that the development of this disease is triggered by some stress factor. It is possible that the three to four week period was sufficient time for pulmonary infection to occur and to bring about the clinical signs of aspergillosis. The excreta of infected birds were watery in 9 out of 12 cases; watery to the point where a large puddle up to three feet in diameter would form on the floor within a day. Most of these excreta were infiltrated with a pale green pigment, presumably, bile. We have observed that normal birds often excrete bile when hungry, but these birds with aspergillosis had sickly green excreta while there was still ample food in the digestive system. Weight loss in these birds was dramatic. For example, a female Goshawk weighing 2 lbs. 11 ozs. dropped to 2 lbs. 4 ozs. in 48 hours. Respiratory difficulty occurred within 3 days of the first signs. The first sign often was an unusual response to normal activity; later birds began to gasp for air while just sitting quietly on a perch. Shortly thereafter the birds usually stopped eating. Force feeding was effective for one to two days, but then birds began to regurgitate food. Fluids were better retained than solids at this point. Death usually ensued in three to five

days. It should be pointed out that the whole course of the disease has been noted to run from five to eleven days. It should be pointed out that these signs are not specific for aspergillosis, but could be indicative of any debilitating disease. However, if an Goshawk is showing these signs, we believe that chances are very good that it is indeed afflicted with aspergillosis.

Therapy with Amphotericin B (Fungizone, Squibb and Sons, New York) was instituted for all 12 cases mentioned above. It was administered intravenously in the cutaneous ulnar vein at a rate of 0.75 mg/kg and via nebulization with a hand nebulizer. Eight of the birds treated subsequently died while four survived. The latter four were given I. V. injections every other day and nebulization treatment for one hour per day every day. The original diagnosis was confirmed by necropsy among the eight that died. Those that survived were falconer's birds and were not sacrificed to confirm the original diagnosis or to ascertain the degree of remission. Supportive therapy is also an important part of any treatment regimen and in these four cases it consisted of maintaining the fluid, caloric, and acid-base balances of the bird using the slurry described above.

A regimen of prophylaxis was also tried using five captive Goshawks. This consisted of an initial injection of Amphotericin B followed by daily nebulization for one week. The birds were initially swabbed to check for *A. fumigatus* prior to treatment and swabbed again after two weeks. Three were positive prior to treatment and none were positive afterwards. It should be noted that the five birds treated here were all trapped much later in winter, i.e. after January first, and they might represent a resistant segment of the population that had survived the period of stress associated with the fall immigration and readjustment to new habitat.

These initial observations on aspergillosis have raised many questions.

To answer some of these, an experiment is now being prepared utilizing Coturnix Quail. The goals of this experiment are: 1) to develop an early diagnosis technique through the use of serum antigen-antibody agglutination reactions; 2) to evaluate regimens of therapy; 3) to evaluate programs of prophylaxis. Basic information obtained from these experiments will then be applied in experimental work that utilizes some of the crippled hawks we have.

In conclusion, the following points can be made concerning rehabilitation:

1. It is of definite value to the individual bird that is returned to the wild.
2. Such a program has sufficient merit to attract public attention thereby making people aware of the birds and of the problems complicating their survival.
3. It provides basic knowledge and expertise so that rare and endangered species can receive more competent attention.
4. Rehabilitation programs provide a source of birds for research work and educational programs.
5. A program which incorporates careful scientific observations and experimental testing of hypotheses formulated by these observations, can provide much useful information about the biology of raptors and thus contribute to their management and conservation.

The authors would like to give special thanks to Dr. H. E. Dzuik, University of Minnesota, Department of Veterinary Physiology and Pharmacology for assistance and contributions. The senior author wishes to acknowledge support from NIH Training Grant No. 2 TO1 GM01779 and U. S. Atomic Energy Commission (COO-1332-88).

Department of Ecology and Behavioral Biology, University of Minnesota, St. Paul

Department of Veterinary Physiology and Pharmacology, University of Minnesota, St. Paul

SPRING SEX RATIOS OF MIGRATORY WATERFOWL IN NORTH-CENTRAL MINNESOTA

By David O. Rasmussen
and Douglas C. Keran

This study was conducted in south-eastern Crow Wing County, Minnesota from March 15-May 1, 1973, to determine spring sex ratios of migratory waterfowl.

We wish to acknowledge the assistance given by Terry Little and Fred Strand from the Crow Wing Natural History Area on which part of the study was conducted, and students from the Brainerd Area Technical Institute, who provided data when species were observed on or near the Crow Wing Natural History Area.

METHODS AND MATERIALS

An eight and one-half mile route in Crow Wing County made it possible to observe two lakes and six ponds of various sizes. Travel was by foot and automobile. Field glasses (7x35) and a 40 power spotting scope were used.

All waterfowl observed and positively identified were recorded as to species, numbers, and sex. Observations were made under various weather conditions, with intervals of no longer than five days between study periods.

DESCRIPTION OF STUDY AREAS

(Refer to Fig. 1. for location of study areas).

A: A small shallow water lake of 50 acres bordered by a paved road and open field on the north. The south and east is bordered by mixed hardwoods and scattered conifers. The west is bounded with mixed hardwoods and conifers with a small opening on the northwest corner. The littoral zone is void of vegetation at this time of year.

B: A small pond of .6 acres, a paved road borders it on the west, with the north and east sides being open agricultural land. The south is bounded by red pine.

C: An area of 9.4 acres, this site

has been manipulated to increase waterfowl utilization by developing open water areas through the use of explosives. It is mostly interspersed with willows, and bordered on the north, south, and east sides by red and jack pine plantations. The west side is bounded by open field.

D: A fairly large lake with a surface area of 149 acres. The northwest and southwest sides are open, being bordered by a paved road and open fields. The south and southeast is fringed with mixed hardwoods and conifers with some openings of agricultural and non-agricultural land occurring on the east. The north and northeast side is mostly open with the exception of scattered small patches of woods. This lake has extensive vegetation along the littoral zone on the north, northeast and southeast sides.

E: This site is a .3 acre, shallow water area that dries up during the summer. It is surrounded by pasture

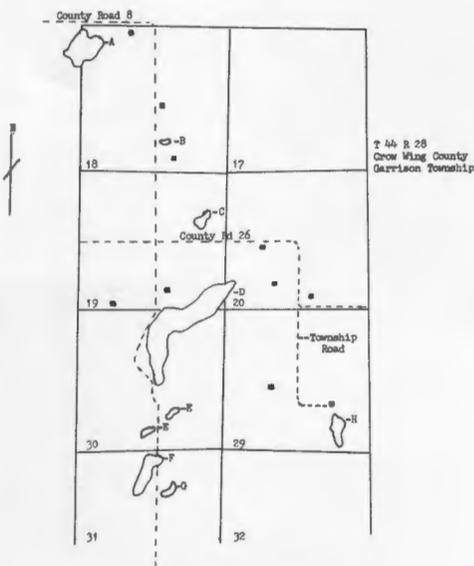


Fig. 1. Location of study areas.

with willows occurring throughout the pond.

F: A small shallow water area of 1.8 acres. It is bordered by a paved road on the east, this being the only opening. The remainder is surrounded by mixed hardwoods, conifers, and willows. Approximately 50% of the total area is open water, the remainder consisting of sedges, bulrushes, cat-tails and floating bog.

G: A small shallow water area of .6 acres, it is bordered by a paved road on the west which is the only opening. The remainder is surrounded by scattered hardwoods and conifers. Willows are present on the east, north-east, and southeast.

H: This pond is 12 acres in size. It is bordered by mixed hardwoods and conifers except for a small opening on the north and west sides. This is a shallow water area with 75% of the total area open water; the remainder consisting of sedges, cattail, bulrushes,

and some bog.

It should be noted that sightings of 113 additional ducks were made on the Crow Wing Natural History Area. This data was used to supplement the observations on the eight study areas to give a broader picture of sex ratios. The sightings on the Crow Wing Natural History Area were no further than two miles from the route used.

RESULTS AND DISCUSSION

Because of the unusually warm weather and spring breakup of lakes, arrival of waterfowl was earlier than previous years. (Table 1). The spring breakup started in late March with all areas clear of ice by April 8. Large numbers of ducks were not seen until April 12, with peaks occurring on April 19 and April 26. By May 1, most of the ducks had moved north with only Mallards, Wood Ducks, Blue-winged Teal, Green-winged Teal, and Ring-necked Ducks remaining in this area as local nesting ducks (Fig. 2).

Table 1. Arrival dates of waterfowl, southeastern Crow Wing County, Minnesota - 1970-1973.

	1970	1971	1972	1973
Mallard	April 9	April 8	April 11	March 14
Wood Duck	April 15	April 14	April 12	March 27
Green-winged Teal	-	April 16	April 26	April 16
Blue-winged Teal	April 25	April 15	April 27	April 14
Ring-necked Duck	-	April 11	-	April 7
Lesser Scaup	April 20	April 11	-	April 15
Bufflehead	April 24	April 16	-	April 6
Common Goldeneye	April 17	April 16	-	April 1
Shoveler	-	-	-	April 2
Canvasback	-	-	-	April 10
Gadwall	-	-	-	April 11
Pintail	-	April 11	-	April 15

During this study period, seven species of puddle ducks and five species of diving ducks were observed on the eight study areas.

Sex ratios for total species, for each sub-family, and for eight species of ducks were determined.

Table 2 compares work done by Ericson (1943) in eastern and western Minnesota, Nelson (1950) Ramsey and Anoka Counties, Keran (1965) Anoka and Isanti Counties and Lee et. al (1964) entire state of Minnesota with the present study.

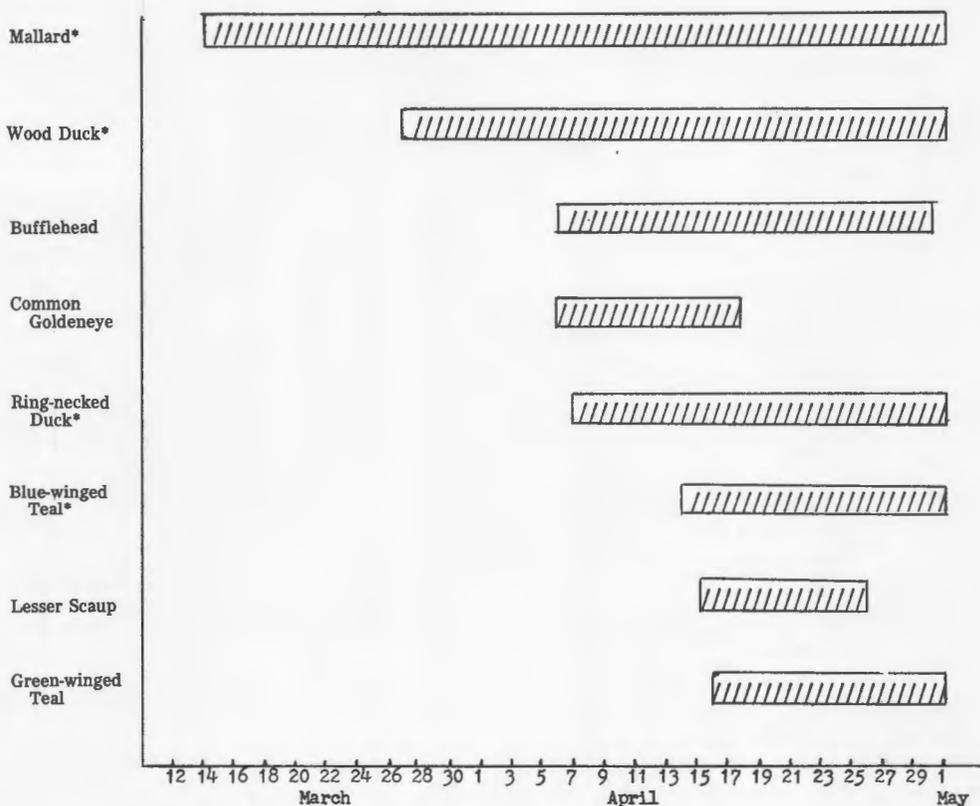


Fig. 2. Species arrival and duration of stay on study areas.

*local nesting ducks

Total species sex ratios for the other authors were higher than found here. This is due to the larger percentage of ducks observed being puddle ducks compared to diving ducks as the other investigations indicate.

Sex ratios of puddle ducks seem to be very stable during spring migration. A total of 704 puddle ducks showed a 1.3:1 (male to female) sex ratio, which was very close to Ericson and Nelson.

A total of 288 diving ducks showed a 1.7:1 sex ratio which was considerably lower than Ericson and Nelson, but higher than Keran.

MALLARD

The Mallard was the most abundant

duck observed with a total of 452 and an overall sex ratio of 1.3:1. After one week of observation the sex ratio was 1.1:1 and increased to the final average of sex ratio of 1.3:1. Ericson stated that this may be due to the greater number of males seen during later observation periods due to the nesting activities of females. Sowls (1955) reported a ratio of 1.2:1 for 3,394 birds at Delta, Manitoba from 1938-1950.

BLUE-WINGED TEAL

A total of 116 Blue-winged Teal observed had a sex ratio of 1.4:1 which was slightly lower than Ericson, Keran, and Lee, but slightly higher than Nelson.

Table 2. Comparison of Sex Ratio Investigations in Minnesota

Species	Ericson (1943) (3 years)		Nelson (1950) (1 year)		Lee et. al (1964)				Keran (1965) (1 year)		Rasmussen & Keran (1 year)	
	Total	Ratio ^(a)	Total	Ratio	1960		1961		Total	Ratio	Total	Ratio
					Total	Ratio	Total	Ratio				
Mallard	256	1.01:1	160	1.4:1	1304	1.23:1	1532	1.17:1	72	1.9:1	452	1.3:1
B-w Teal	447	1.48:1	222	1.3:1	1509	1.49:1	1170	1.71:1	81	1.5:1	116	1.4:1
G-w Teal	-	-	-	-	151	1.36:1	82	1.48:1	-	-	75	1.3:1
Wood Duck	-	-	-	-	67	1.23:1	205	2.80:1	4	-	51	1.0:1
R-n Duck	580	1.39:1	255	1.4:1	1615	1.43:1	1529	1.58:1	34	1.6:1	106	1.4:1
L. Scaup	3114	2.56:1	3155	2.1:1	4783	2.0:1	1715	1.80:1	334	1.5:1	89	2.3:1
Bufflehead	49	2.26:1	-	-	119	1.90:1	71	.82:1	7	-	61	1.4:1
C. Goldeneye	140	1.41:1	113	2.9:1	640	1.51:1	135	1.56:1	1	-	31	2.1:1
Pintail	322	1.16:1	-	-	268	1.31:1	181	1.43:1	-	-	8	-
Gadwall	21	-	-	-	-	-	-	-	6	-	1	-
Shoveler	168	1.15:1	-	-	428	1.56:1	245	1.63:1	2	-	1	-
Canvasback	147	1.77:1	125	2.0:1	-	-	-	-	-	-	2	-
Total species	6008	1.84:1	4594	1.9:1	13147	1.67:1	9720	1.53:1	576	1.6:1	992	1.4:1
Diving ducks	4563	2.10:1	4161	2.0:1	-	-	-	-	404	1.5:1	288	1.7:1
Puddle ducks	1425	1.25:1	433	1.3:1	-	-	-	-	172	1.9:1	704	1.3:1

(a) male: female ratio

GREEN-WINGED TEAL

A total of 75 Green-winged Teal were observed with a sex ratio of 1.3:1. Lee reported a ratio which was slightly higher than the ratio found here.

WOOD DUCK

A total of 51 Wood Ducks were observed having a sex ratio of 1:1. On April 2, 9, and 16, the sex ratio was 1.2:1 and then decreased to an overall 1:1 ratio. This is probably because of the nesting activities of the female in more secluded woodland ponds.

RING-NECKED DUCK

A total of 106 Ring-necked Ducks seen had a sex ratio of 1.4:1. The sex ratio was much higher earlier, but dropped rapidly and levelled off (Fig. 3). This is probably the result of some ducks preparing to nest in the study area, with the majority migrating further north. Before April 20, pairs were seldom seen, and after April 20, only pairs were seen. This ratio was found to be the same as Ericson, Nelson, and Lee (1960), but lower than Lee (1961) and Keran. Anderson et. al (1969) stated that in March 1963 during an oil spill accident between Minneapolis and Red Wing, Minnesota, of 203 birds, 66% were males for a sex ratio of 1.9:1.

LESSER SCAUP

A total of 89 Lesser Scaup were observed having a sex ratio of 2.3:1,

No. males
per females

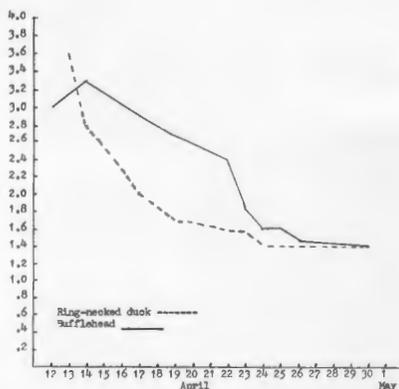


Fig. 3. Fluctuations of sex ratio in Bufflehead and Ring-necked duck

which was lower than Ericson and higher than the ratios reported by Nelson, Lee, and Keran. Anderson et. al (1969) reported that of 1128 lesser scaup, 78% were males or a ratio of 3.5:1. Sowls (1955) reported a ratio of 2.0:1 for 10,664 birds at Delta, Manitoba from 1930-1950.

BUFFLEHEAD

A total of 61 bufflehead observed had a sex ratio of 1.4:1. This ratio was much higher during the earlier part of the observation period but decreased and stabilized as did the ring-necked duck (Fig. 3.). Ericson and Lee (1960) reported a much higher sex ratio, with Lee (1961) reporting a lower ratio.

COMMON GOLDENEYE

A total of 31 Common Goldeneye observed had a sex ratio of 2.1:1, which was considerably higher than Ericson and Lee, and considerably lower than Nelson.

The Gadwall, Pintail, Shoveler, and Canvasback were not seen in large enough numbers for sex ratio determinations of any significance. For number of the above species observed see Table 2.

This study has shown that this area is more frequented by puddle ducks than diving ducks. From personal observations over the past years, the Mille Lacs Lake area seems to have intensified use by diving ducks, probably due to the size of the lake and migration patterns of diving ducks.

If a study of sex ratios by field observations could be initiated for several years in a row on the same area, it is possible that one more population estimating technique for waterfowl may occur. By the careful documentation of total species, sub-species, and species sex ratios, this may aid in regulating waterfowl seasons and bag limits.

LITERATURE CITED

- Anderson, B. W., T. E. Ketola, and D. W. Warner
1969. Sex and Age Ratios of Lesser

- Scaup and Ring-necked ducks in Minnesota. *Journal of Wildlife Management*. 33 (1) 209-212.
- Ericson, A. B.
1943. Sex Ratio of Ducks in Minnesota, 1938-40. *Auk* 60: 20-34.
- Keran, D. C.
1965. Duck Survey at Cedar Creek Natural History Area, Minnesota. Research paper. unpublished. 9pp.
- Lee, F. B., R. L. Jessen, N. J. Ordal, J. P. Lindmeier, and L. L. Johnson
1964. Waterfowl in Minnesota. Minnesota Department of Conservation. Technical bulletin #7. 207pp.
- Nelson, H. K.
1950. A Study of Waterfowl Sex Ratios During Spring Migration—Minnesota 1950. *Flicker* 22 (4): 114-120.
- Sowls, L. K.
1955. Prairie Ducks, Stackpole Co., Harrisburg, Pennsylvania and Wildlife Management Institute, Washington, D. C. 193pp.
- Brainerd Area Technical Institute, Brainerd, Minnesota and Crow Wing Natural History Area, Brainerd, Minnesota 56401.**

notes of interest

MINNESOTA'S THIRD ARCTIC LOON—Thursday, May 3, 1973 was a mild day in Duluth. The sky was partly cloudy, there was little wind, and Lake Superior was calm. The temperature was in the lower sixties. At about 2:15 P. M., CDST, we were traveling along the shore of Lake Superior from Duluth to Two Harbors. Scattered groups of Horned Grebes and Red-breasted Mergansers, and occasional Red-necked Grebes and Common Loons could be seen from the shore. When we reached a spot on the shore opposite 8731 North Shore Drive, I noted a loon-like bird about 100-110 yards away from the shore. Because of the bird's small size, I immediately assumed that it was a Red-throated Loon. When I first viewed the bird with 7x50 binoculars, I was struck by the straight but thin bill, dark throat, grayish crown and hindneck, and what appeared to be a white area on the sides of the neck. As I have never known Red-throated Loons to show these field marks, I decided to check the bird with a 20-60x "zoom" spotting scope. With the scope, it was apparent that the bird had a black throat patch, and what I had thought was a white area on the sides of the neck were actually white, longitudinal lines, separated by black. After noting these characteristics, I concluded that the bird I was observing was my first (and Minnesota's third) record of an Arctic Loon. Before looking in a bird guide, I immediately wrote down the bird's description as it appeared to me through the spotting scope. The bird's description, abstracted from my field notes taken while observing the bird, are as follows: "a small loon, roughly the same size or slightly larger than the Red-throated, with a thin, but not upturned bill; forehead, chin, sides, and flanks dark or blackish; back covered with transverse rows of conspicuous white spots, separated by blackish, running parallel to each other; prominent black throat patch, extending to the upper breast; middle and lower breast white; several conspicuous white lines on both sides of the neck the same length as the throat patch, and running parallel to it; crown, nape, and hindneck light whitish-gray, slightly tinged with a brownish cast." After recording this description, I turned to Robbins' **Birds of North America**, which reaffirmed my identification of an Arctic Loon. The above description

also concurs with museum specimens of breeding-plumaged adult Arctic Loons that I have examined. The first record of this species in the state was November 22, 1969, when a winter-plumaged individual was noted on Lake Superior by Janet Green (*The Loon*, 43:19). This observation was regarded as "hypothetical" because of the difficulty of identifying this species in winter plumage. The second report, which established the species on the accidental list, was on September 17, 1972, when Robert Janssen noted a breeding-plumaged bird in the same general area of Lake Superior (*The Loon*, 44:116-117). The bird was again noted by several observers on September 24, 1972. In summary, the present observation is apparently the first spring record for the species, and only the third overall record. As a final note to observers who may look for this species, I would like to stress that I feel that the white lines on the sides of the neck, and the grayish crown and nape are this bird's most notable field characteristics, when the bird is viewed from the sides. Also, the field guides seem to place importance on the size difference between this species and the Red-throated Loon, but, as stated earlier, I noted no appreciable difference. I also believe that this species should continue to be watched for by all observers covering Lake Superior. **James A. Baumhofer, 1884 Berkeley Ave., St. Paul, Minnesota 55105.**

EARLY RECORD FOR CATTLE EGRETS, WABASHA COUNTY—Cattle Egrets have been reported numerous times in *The Loon* but this observation probably is the earliest noted. Roger Johnson and Tom Isley were driving to the Whitewater Refuge Headquarters from Kellogg on Highway 74 on April 17, 1973, at about 1:30 p.m. About ¼ mile west of Weaver, they noticed two small, white, heron-like birds in an alfalfa field next to the road. Roger attempted to photograph the birds and flushed them. Later at the Refuge Headquarters several bird books were checked and it became evident that the birds were Cattle Egrets. I decided to go and again check the area. When I arrived at the field, two Cattle Egrets were feeding in the alfalfa field. They walked within about 40 feet of me in the parked car. I took several slides thru the 15x spotting scope. I noted they were about the size of a Green Heron and had reddish-brown feathers on the top of the head, on the back, and on the breast. The next morning, April 18, the birds could not be found. **Earl D. Kopischke, Game Research Center, Madelia, Minnesota.**

WESTERN Tanager IN MILLE LACS COUNTY—I observed for about 15 minutes a Western Tanager male on May 8, 1973 at a peninsula of the Onamia Lake, Hendrick's Point. The sun was behind me. Binocular 6x30. The bird was in a tree about 15 yards from me. While it was moving around, I could see all its details. A pale tanager beak, body yellow, forked tail and a black saddle across the back. Wings were black with two whitish bars, head was mottled reddish-orange. While I was watching the bird, I looked into the "Birds of North America" book. The head appeared much redder there. Either Robbins over-reddened it, or my bird was a young male. It may have been an adult male who had not completely acquired his summer plumage. According to Peterson, the males lose their red in autumn. I believe this is the tenth report of a Western Tanager in Minnesota. **M. Ivanovs, Onamia, Minnesota.**

LITTLE BLUE HERON SEEN IN HENNEPIN COUNTY—On June 5, 1973 Tim Dyhr, a wildlife intern for the Hennepin County Park Reserve District reported seeing what he thought to be an adult Little Blue Heron in the Morris T. Baker Park Reserve located just east of Maple Plain, Hennepin County. It was observed on what is called Pothole #8, an area purposely flooded to improve waterfowl habitat, and located 1,000 feet east of the

junction of County Roads 19 and 29. The following morning while making a waterfowl brood count of Baker Park Reserve I observed a bird flying from Pothole #8 which appeared to be a Little Blue, but identification was not positive. I returned to the pothole at 4:00 P.M. with a spotting scope. An adult Little Blue Heron was found perched on a fence post in the flooded area. It then flew toward shore and landed within 50 yards of my location. Positive identification was made at this time confirming Tim's observation. The bird has not been seen again since this observation. **Laurence N. Gillette Hennepin County Park Reserve District, Maple Plain, Minnesota.**

MINNESOTA'S THIRD RUFF—We had been to Northwoods for the weekend of May 13, 1973 and were returning to Fargo. We were on Minnesota 27 going to Little Falls, to catch U. S. 10 to return to Fargo. We were .4 of a mile east of the intersection of Minn. 27 and Morrison County 50 in the northwest corner of Lastrup, Minnesota. There was a small area of water in a planted field on the north side of Minn. 27. There were 8-12 Wilson's Phalaropes (we were to excited to count accurately), several Red-winged and Yellow-headed Blackbirds, a few American Coots and a pair of Blue-winged Teal with the Ruff. The pond was located about 75 yards from the highway. We first observed the bird from the car facing the pond in a pulloff to enter the field. We observed it with Nikon 8x35 and Swift 7x50 binoculars and a Swift Zoom (15-60) Telescope. My husband then left the vehicle and crept up to the edge of the pond taking pictures. He has a 400 mm. telescopic lens for his cameras and got within 25-28 feet of the Ruff. We are very sorry to report that the shutter mechanism at 1/500 and 1/1000 of a second had quit working on the camera, therefore, we have no pictures. Needless to say, we were very upset over this. I have since found seven different colored pictures of the Ruff and none of them were the same as the one we observed. His legs were reddish orange and the bill was not quite a reddish orange. There were yellow "goggles" around his eyes. He had a black iridescence on the top of his head that went over the nape of his neck to his shoulder area. The loose feathers beneath his chin and around his neck and on his chest were black with small white markings at no regular intervals. (Reminded me of Barred Rock Chickens). These feathers were blowing in the wind when he was walking back and forth feeding. When he was approached as close as three feet by one of the phalaropes he would extend those loose feathers into a ruff. We both finally stood at the edge of the water and observed the bird as he fed back and forth from 25 feet. He was not frightened by us nor were the phalaropes. We observed him for 45 minutes beginning at about 3:15 p.m. We were quite perturbed as we felt it was not the same color as the one in Chandler Robbins' Field Guide. So I have a quite extensive hand written notes and sketches that we made. After we left on our way home, I looked in my Audubon Water-bird Guide and found the Ruff in another color and the material in this Guide explained that no two males were the same color in spring plumage. The exact location of the sighting is as follows: Morrison County, Twp. 41N, Range 29W, southwest quarter of section 7. **Mrs. W. H. Wyatt, 205 Oak Manor Court, Fargo, North Dakota.**

SUMMER Tanager SIGHTING—On May 23, 1973 at 2:30 p.m., I was "birding" one of my favorite spots in Edina. It is a relatively small area on the East side of Minnehaha Creek immediately south of West 54th Street in the vicinity of Minnehaha Boulevard. On the bank of the creek I saw at a distance of about eight feet a tanager-sized bird. Its head and back were yellowish-brown in color. The breast and underparts were **yellow tending to orange in color**. There were **no wing-bars**. The wings were of the same color as the

back and head with no noticeable contrast. I observed the bill only briefly and it appeared to be tanager-shaped. I confess a mental blank as to the color of the bill. The bird moved several times as I observed it with my glasses (8 x 32 Trinovid). I probably observed the bird for 20 seconds. It eventually got into a clump of heavy shrubs where I lost it. It probably flew from the clump across the creek into cover. No call was heard. My reaction at the time was that I was seeing something quite different. In shape it was very much like a female Scarlet Tanager but its color was more that of a female Baltimore Oriole. Peterson says of the female Summer Tanager that "... the under parts are more orange . . . (The bird is) much the color of a female oriole but lacks wing-bars." This is what I saw. The bird was very similar to my earlier "Enigmatic Bird" (see *The Loon*, Vol. 44, no. 4, p. 122) but more noticeably orange with no hint of a finch bill. **Charles L. Horn, Jr., 5100 Juanita Avenue, Edina, Minnesota 55424.**

HYBRID ROSE-BREADED-BLACK-HEADED GROSBEAK—On May 11, 1972, at 11 a.m., several mist nests were being operated at my Banding Station near Lake Jane in Lake Elmo Village, Washington County. The spring migration was in full swing and my "Sub-permittee" Mrs. David Vesall, and I were working hard to clear the nets of about 30 birds. The less time a bird is in a net, the less handling it has before and after banding, the better it is for the well being of the bird. In one 12 meter net set on a path leading into our woods, there were several Rose-breasted Grosbeaks and Catbirds. I started "working" the net from the NW end. When I got to the SE end of the net, the last bird to be removed was a grosbeak. I was puzzled when I looked at her as it seemed to me that her head and back were much too dark for a normal Rose-breasted. Holding her in my hand I realized that over-all she did not resemble a Rose-breasted at all. I immediately called Dr. Harrison B. Tordoff, Director of the Bell Museum of Natural History, and described over the phone the plumage characteristics of this grosbeak. With the knowledge that a Black-headed Grosbeak had been seen in West St. Paul in very early Spring, 1972, I wondered out loud whether I was holding a female of that species. Dr. Tordoff said it possibly was a hybrid, and to confirm this idea he volunteered to compare several "extreme" Museum study skins, with the live individual bird. Within the hour he arrived at my home and upon examination of the live grosbeak and the study skins for comparison, he said that I definitely had a hybrid Rose-breasted-Black-headed Grosbeak,—a female. Dr. Tordoff's parting words were "The bird definitely has hybrid status, but I do not know how the Banding Laboratory will accept this identification . . . Send this record in as a Rose-breasted with an accompanying note of explanation and see what happens." This I did on May 29, 1972 and the following is a partial quote from my letter to the BBL; "it was advised that this grosbeak was a hybrid Rose-breasted-Black-headed female. This advice was given after close examination of several study skins of extremes of both species. The clue to the identification was the axillar or under-wing coverts which in the live grosbeak matched a Rose-breasted (pale peachy-yellow rather than lemon yellow of the Black-headed Grosbeak). Otherwise the live bird strongly resembled a Black-headed Grosbeak, according to Dr. Tordoff." My field notes on the live bird read as follows; Head mottled black; back mottled dark brown; eye stripe starts at back of eye instead of going across entire eye to the lores. Pink blush on upper breast and underparts dull white. No streaking on breast; pencil thin streaking on sides of breast and on flanks, and very few streaks at that. Wings and tail as in Rose-breasted Grosbeak but darker brown. To refer to the head once more, there was a narrow (very narrow median stripe across crown.— Dr. Tordoff said that

because of the underwing coverts were peachy rather than lemon yellow, you would probably enter this banded and released grosbeak as a Rose-breasted."

From the Bird Banding Laboratory, a letter dated July 3, 1972 arrived. A partial quote follows:

"Just a brief note to inform you that I am changing the species number for the hybrid grosbeak (Band #71-169247) to A.O.U. #595-6.—I think your description of the bird merits hybrid status, and may well be the product of actual Rose-breasted Grosbeak-Black-headed Grosbeak mating."

Signed: Brian Sharp, Biologist
Bird Banding Laboratory.

Jane Olyphant, 8609 Hidden Bay Terrace, St. Paul, Minnesota 55109.

SHARP-SHINNED HAWK KILLS ROBIN—On April 9, 1973, at about 9 a.m., while working at the Game Research Center, I heard a "thud" on the window as if a bird had flown against it. I quickly looked out the window and saw a Sharp-shinned Hawk sitting next to a Robin on the ground. The Robin appeared to be dazed. I quickly called Dave Montag, Tom Isley, Al Berner, and Don Pierce to see this. Meanwhile the hawk left the Robin and sat in a tree about 20 feet away. Within a few seconds, the hawk came down to the Robin, grabbed it, started plucking feathers from it, and then flew about 200 feet to a spruce tree. On the ground, under the spruce tree, the hawk continued plucking the Robin. About one-half hour later, Tom Isley checked the area but found nothing but some Robin feathers. Apparently the hawk had carried the uneaten portion of the carcass elsewhere. **Earl D. Kopsichke, Game Research Center, Madelia, Minnesota.**

HOODED WARBLER NETTED—On June 2, 1973, near the town of Isle, Mille Lacs County I netted a bird just after 6 a.m., which appeared at first to be a Wilson's Warbler. However, the bird had large white tail spots, while the Wilson's has no spots. Also the bird seemed longer than a Wilson's. In fact, even at rest in my hand it measured almost 5 inches in length. With regard to the tail spots, these were present on the three outer tail feathers, that is, three on each side. The outermost feathers had the most white on them, and the two adjacent ones had lesser amounts of white with the innermost one having the least amount. The length of the white areas was approximately 1¼ ins. for the outer ones, 1-1/8 ins. for the next one and 7/8 inch for the innermost feather. While being held in the hand the bird flared out its tail feathers in the shape of a miniature fan and "chipped" strongly just once. It had a greenish-olive back, black bill, and rictal bristles. It was all yellow underneath from its bill downward with no streaks of any kind. Also, there was no trace of any wing bars. Its flight feathers were somewhat brownish in color, with greenish outer edges. The bird was shown to my wife, Isabel, and we both agreed this bird had to be a bird rare in this area, 100 miles north of the Twin Cities — a female Hooded Warbler. Coincidentally, this bird was caught eleven years to the day that Jane Olyphant in North St. Paul banded a male of the same species. **M. G. Goldberg, 1915 Palace Ave., St. Paul, Minnesota 55105.**

SCISSOR-TAILED FLYCATCHER IN MILLE LACS COUNTY—On May 25, 1973, Mrs. Virginia Konze observed a Scissor-tailed Flycatcher in the yard of her house, in the western part of Onamia, along the Rum River. It happened on a sunny day, between 4 and 5 p.m. Binocular 7x50. Book used during observation "National Geographic Bird Book." The bird was hunting for

insects in the air and occasionally on the ground. Once in a while it alighted on a low fence and also in trees. Sometimes the flycatcher was not farther than 15-20 yds. from Mrs. Konze. I have no doubts about this report as such a striking bird could not be mistaken for anything else. **M. Ivanovs, Onamia, Minnesota 56359.**

A TOWNSEND'S SOLITAIRE IN CHISAGO COUNTY—On April 27, 1973, while driving through oak woods in the Sunrise Rive Addition to the Carlos Avery Wildlife Management Unit, I noted an unusual blue-gray bird as it flitted across the road from one felled oak tree to another. I watched from the car for awhile as he sat 30 or 40 feet away partly hidden by the branches covered with last year's leaves. Then twice I walked closer, to within 20 feet before it flew. There was no doubt that this was a Townsend's Solitaire—white eye ring, white outer tail marks, flashing wing marks. This was in Section 13, Township 34N., Range 20W. On this day, one day in ten thousand, I was without binoculars. **William H. Longley, 532 W. Broadway, Forest Lake, Minnesota 55025.**

LETTERS TO THE EDITOR:

University of Minnesota
Department of Ecology and
Behavioral Biology
223 Snyder Hall
St. Paul, Minnesota 55101

Dear Bird Watchers:

Over the past year and one half those of us doing research on hawks and owls at the University of Minnesota have received a great deal of good information and assistance from interested residents throughout the state. We feel we have learned many interesting facts about Minnesota's raptors and we want to continue our studies. In an effort to gain knowledge about raptors from the entire state I would again like to ask for your help.

If you or your friends find any hawk or owl nests I would appreciate it if you could notify me. I am interested in the type of habitat the nest occurs in, the number of young birds it contains, the food items at the nest and a number of other ecological aspects. I am particularly interested in Goshawks this year. After the large immigration

of Goshawks into Minnesota last year it will be valuable to know if any of these birds nest successfully in the state. Throat swabs will be taken from nestling birds to determine whether or not they have **Aspergillosis**, a fungus disease. All nestlings will be banded.

Additionally, we are continuing our rehabilitation program for raptors. Pat Redig and Dr. Gary Duke will be tending to injured and diseased birds. I will also be reintroducing orphaned hawks and owls to the wild or to foster parents when appropriate. So if you learn of any sick, injured, or orphaned birds please notify us immediately. Again this year we will be cooperating with several investigators, so anything you may have can go a long way to a better understanding of the biology of raptors. I hope you can help us get the message around through your news letters and by word of mouth.

Thanks for your help.

Sincerely,
Mark R. Fuller

Dear Mr. Janssen:

This letter is not a "Note of Interest", just several words about some birds mentioned in the "Loon".

1. I read about your hard time with Arctic Loon. There is a good field mark for identification of loons, especially in winter plumage. Look at their posture. The Red-throated, while swimming, keeps mostly his head up-lifted. For this reason his bill stands up to the surface of the water at an angle of about 45 degrees. The other loons hold their heads and bills almost parallel to the water. I learned this, still being a boy, from a gamekeeper at my family's country estate, who told me: "the Blackthroat (Arctic) holds his head and bill like a duck while he is swimming, but the Redthroat is like a dreamer (!) who looks at the clouds and does not care for the earth".

I checked several times this theory by examining loons in winter plumage and it was right.

We did not have Common Loons usually, only as rare stragglers. In fall, 1950, I saw once in Rhode Island, at the Atlantic, a bunch of 35 "Dreamers" with their heads and bills up, and for comparison several Common Loons (my first) keeping heads and bills "like ducks". The difference in size was noticeable. The Red-throated is also much slenderer than the other loons.

2. In the "Loon", V-44, P. 115, P. Egelund described a new Minnesota bird, Western Wood Pewee, thus: "No eye ring or wingbars were noticeable. It was obviously a pewee".

True, a pewee has no eye ring, but does have prominent wingbars, and a pewee without them looks to me even less than hypothetical.

3. Little Gull (Vol. 44, P. 56). As I read this note, it was clear to me they were real Little Gulls, most familiar to me from my old country, Latvia. Mentioning Peterson's Book, V. L.

made a little mistake. She wrote, "the book mentions the wing linings of the Little Gull as black to gray." But Peterson says, "under surface of wings smoke-gray to blackish, in striking contrast." P. did not say which part of the wing is gray, which black. So his sentence is somewhat puzzling. To my knowledge, smoke-gray (about like the back of a junco) are the underwing coverts, but only the flight feathers are blackish. I had a number of times these gulls in my hands. By the way, the bill in summer is not red like in a Common or Caspian Tern, but reddish-black or dark cherry red, looking at a distance black.

I was very glad hear about a new Minnesota bird. Later in the "Loon", V. 44, P. 78, K. Eckert's remarks to the note might confuse the readers as he showed his poor knowledge of the Little Gull by calling the wing linings "very blackish", which is wrong. He believed also this species is "known on the Great Lakes only in fall." But your editor's note says "has nested near Lake Erie." I am sure, not in fall. I wrote to K. E. about his skepticism. He answered me, "the observer is not all that reliable," and "the species in question is highly unlikely." But are the Ruff and European Widgeon more likely birds in Minnesota?

I do not defend the Little Gull note to please Mrs. Lender, whom I never met, but only because I believe her birds were the most genuine Little Gulls despite K. E.'s criticism.

With best wishes and good birding despite the miserable spring.

M. Ivanovs, Onamia, Minnesota

P.S. Next time you will find a loon, try at first to determine - is he a "Dreamer" or "Realist" and then look at the field marks.

PURPOSE OF THE MOU

The Minnesota Ornithologists Union is an organization of both professionals and amateurs interested in birds. We foster the study of birds, we aim to create and increase public interest in birds and promote the preservation of birdlife and its natural habitat.

We carry out these aims through the publishing of a magazine, **The Loon**; sponsoring and encouraging the preservation of natural areas; conducting field trips; and holding seminars where research reports, unusual observations and conservation discussions are presented. We are supported by dues from individual members and affiliated clubs and by special gifts. The MOU officers wish to point out to those interested in bird conservation that any or all phases of the MOU program could be expanded significantly with gifts, memorials or bequests willed to the organization.



SUGGESTIONS TO AUTHORS

The editors of **The Loon** need articles, shorter "Notes of Interest" and black/white photos. Photos should be preferably 5x7 in size. Manuscripts should be typewritten, double-spaced and on one side of the sheet with generous margins. Notes of interest should be generally less than two typewritten pages double-spaced. If reprints are desired the author should so specify indicating number

required. A price quotation on reprints will be sent upon receipt of information.

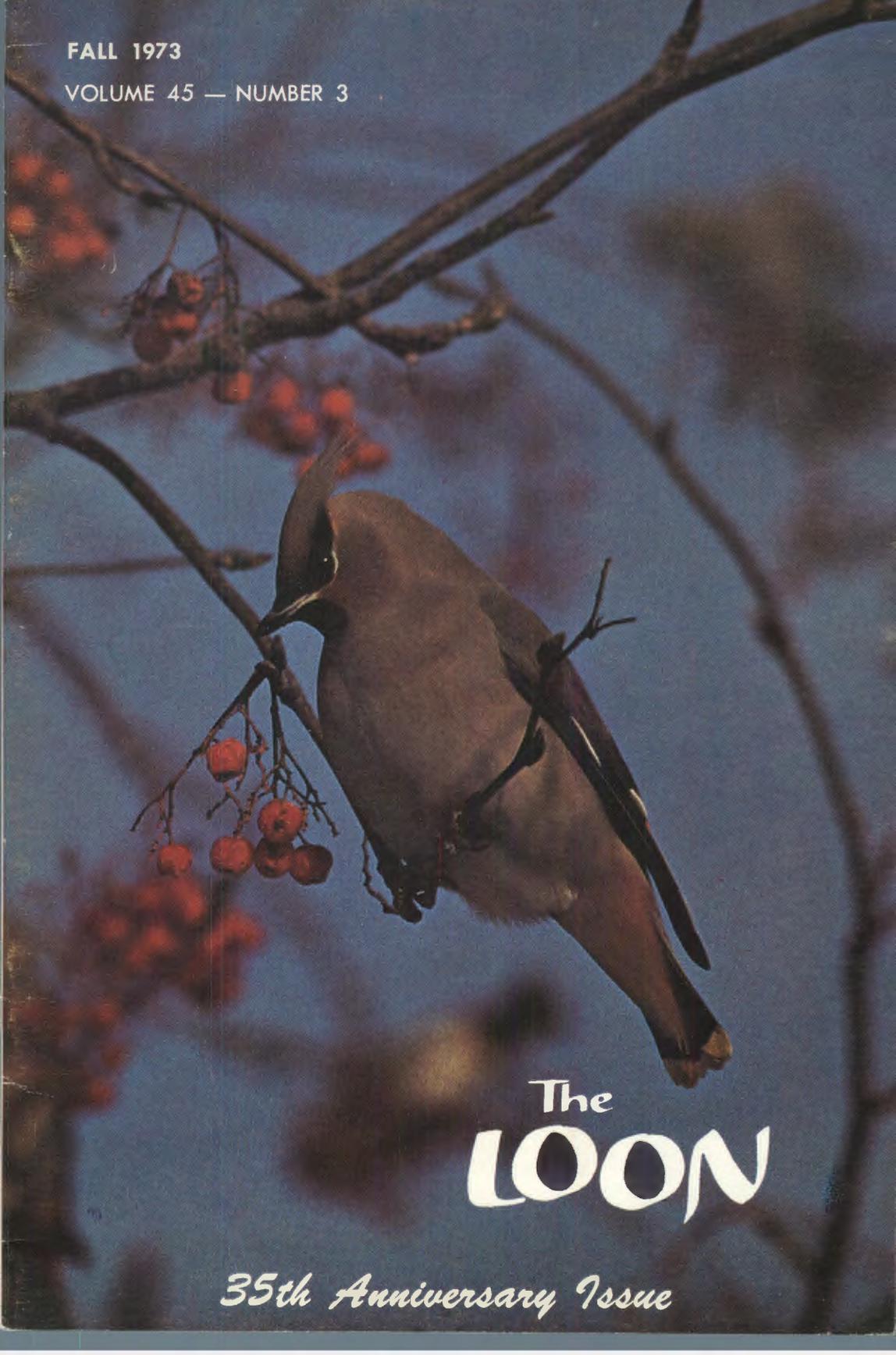
Club information and announcements of general interest should be sent to the Newsletter editor. See inside front cover. Bird-sighting reports for "The Season" should be sent promptly at the end of February, May, August and November to Mrs. Janet Green. See inside front cover.

TABLE OF CONTENTS

BLACK-CROWNED NIGHT HERON Photo by Bruce G. McKee (see page 32)	Front Cover
THE PRESIDENT WRITES	31
A STUDY OF THE PIG'S EYE LAKE HERON COLONIES By A. Michael Adams, James Bunn, Bruce S. Davis, Ann L. Jones and L. W. Odne	32
1972-73 WINTER SEASON (Dec. 1 thru Feb. 28) by Oscar L. Johnson	46
CURRENT STATUS OF WILD TURKEYS IN SOUTHEASTERN MINNESOTA by Earl D. Kopschke and Roger N. Johnson	49
RAPTOR REHABILITATION AND CONSERVATION IN MINNESOTA by Mark R. Fuller, Patrick T. Redig and Gary E. Duke	50
SPRING SEX RATIOS OF MIGRATORY WATERFOWL IN NORTH-CENTRAL MINNESOTA by David O. Rasmussen and Douglas C. Keran	56
NOTES OF INTEREST	61
LETTERS TO THE EDITOR	66

FALL 1973

VOLUME 45 — NUMBER 3

A photograph of a cedar waxwing perched on a branch with red berries against a blue sky. The bird is facing left, looking down at a cluster of red berries. The background is a clear blue sky with some blurred branches and berries.

The
LOON

35th Anniversary Issue

The LOON Minnesota's magazine of birds and nature, is published four times each year by the **Minnesota Ornithologists' Union**, the state-wide bird club. Permanent address: J. F. Bell Museum of Natural History, University of Minnesota, Minneapolis 55455. Anyone interested in birds and nature may join. Any organization with similar aims may affiliate. All MOU members receive our two quarterly publications: **The Loon** and the **MOU Newsletter**.

MEMBERSHIPS AND SUBSCRIPTIONS: Karol Gresser, 8850 Goodrich Ave., Bloomington, Minnesota 55437. To join the MOU and receive both MOU publications, send Mrs. Gresser \$4 for a regular yearly subscription. Or other classes of membership that you may choose are: Family \$5 yearly; Sustaining \$25 yearly. Life \$100. Also available from Mrs. Gresser: back issues of **The Loon** (\$1 each ppd.) and MOU checklists of Minnesota birds (20 for \$1 ppd.). Gifts, bequests, and contributions to the MOU Endowment Fund should also be sent to Mrs. Gresser.

EDITOR OF THE LOON: Robert B. Janssen, 14321 Prince Place, Hopkins, Mn. 55343. (phone 938-7464). The editor solicits articles, short notes, and black/white illustrations about birds and nature. See back cover for details. Associate Editors, Kim R. Eckert and Paul Egeland.

"The Season" section of **The Loon** publishes reports of bird sightings throughout Minnesota. We particularly desire reports from parts of the state that have been neglected or covered lightly in past reports. To become a contributor to "The Season," request the report forms from the **EDITOR OF "THE SEASON," Mrs. Janet Green, 9773 North Shore Drive, Duluth, Mn. 55804.** (area 218, phone 525-5654).

EDITOR OF THE MOU NEWSLETTER: Mrs. Marlyn Mauritz, Route 4, Box 886, Excelsior, Minn. 55331. Publishes announcements and reports about activities of the MOU and its affiliated clubs. (Club officers should keep both MOU editors informed.)

MOU OFFICERS

PRESIDENT: Bill Bryson, Route 2, Alden, Minn. 56009

FIRST VICE PRESIDENT: Jack Mauritz, Route 4, Box 886, Excelsior, Minn. 55331

SECOND VICE PRESIDENT: Pepper Fuller, 14505 McGinty Road, Wayzata, Minn. 55391.

SECRETARY: Jo Blonich, Box 96, Crosby, Minn.

TREASURER: Karol Gresser, 8850 Goodrich Ave., Bloomington, Minn. 55437 (phone 612-831-5714).

MOU COMMITTEE CHAIRMEN

RESEARCH AND RECORDS: Mrs. Janet Green, 9773 North Shore Drive, Duluth, 55804.

FIELD TRIPS: Roy Zook, 5520 Warwick Place, Minneapolis 55436. **MEMBERSHIPS:** Mrs. Josephine Blonich, 101 Birch St., Crosby 56441. **EDUCATION:** Mike Link, Sandstone 55072. **NOMINATIONS:** Mrs. George Stanley, 213 Janalyn Circle, Minneapolis 55416. **UNIVERSITY COORDINATION:** Dr. Harrison Tordoff, Bell Museum of Natural History, University of Minnesota, Minneapolis 55455. **NATIONAL AUDUBON COORDINATION:** Edw. Brigham, Route 4, Red Wing 55066. **PUBLICITY:** Kathy Heidel, Route 5, Box 108, Excelsior 55331. **CONSERVATION AND RESOLUTIONS:** Dr. Bruce Keyworth, 1926 South Lane, St. Paul. **THOMAS S. ROBERTS AWARD:** Mrs. Herbert Richardson, 5215 Thrid Ave. S. Minneapolis. **FINANCE AND ENDOWMENT:** Ross Wagner, Box 171, Mountain Lake. **HOTLINE:** Donald Bolduc, 4211 Blaisdell Ave., Minneapolis 55409. **SLIDE FILE LIBRARY:** Wally Jiracek, 5814 Portland Ave., Minneapolis 55417. **HISTORIAN:** Mrs. Harvey Putnam, 1407 Woodland, Duluth 55803.

AFFILIATED CLUBS OF THE MINNESOTA ORNITHOLOGISTS UNION

ALBERT LEA AUDUBON SOCIETY:

President: Bill Bryson

Route 2, Alden, Minn. 56009

M. O. U. Representative: Mary Kampen

AUDUBON SOCIETY OF FARGO-MOORHEAD

President: Mrs. Leslie Welter Jr.

Box 579, Moorhead, Minn. 56560

M. O. U. Representative: Mrs. Wm. Wyatt

AVIFAUNAL CLUB

President: Mr. Harding Huber

2109 Squire Lane

New Brighton, Minn. 55112

M. O. U. Representative: Mr. Robert Janssen

COTTONWOOD COUNTY BIRD CLUB

President: Lester Rupp

Mountain Lake, Minn. 56159

M. O. N. Representative: Ross R. Wagner

DULUTH AUDUBON SOCIETY

President: Mrs. Janet C. Green

9773 N. Shore Dr.

Duluth, Minn. 55804

M. O. U. Representative: Mrs. Marjorie M. Carr

ECOWAY AUDUBON OF PINE RIVER

President: Ray Erickson

Pine River, Minn. 56474

GRINDSTONE LAKE AUDUBON SOCIETY

President: Michael Sammer

100 Third Ave. N.E.

Pine City, Minn. 55063

HIAWATHA VALLEY BIRD CLUB

President: Mr. Jay Hamernick

1297 W. Wincrest

Winona, Minn. 55987

M. O. U. Representative: Dr. Donald Mahle

MINNEAPOLIS AUDUBON SOCIETY

President: Miss Theodora Melone

2601 Sunset Blvd.

Minneapolis, Minn. 55416

M. O. U. Representative: Mrs. George Stanley

MINNEAPOLIS BIRD CLUB

President: Miss Jane Spence

125 E. Broadway

Osseo, Minn. 55369

M. O. U. Representative: Mr. Walter Jiracek

MINNESOTA BIRD CLUB

President: Mr. Manley Olson

1974 W. Summer St.

St. Paul, Minn. 55417

M. O. U. Representative: Dr. W. J. Breckenridge

MINNESOTA RIVER VALLEY AUDUBON CLUB

President: John Rehbein

512 Portland Place

Bloomington, Minn. 55420

M. O. U. Representative: Horace Chamberlain

ST. PAUL AUDUBON SOCIETY

President: Gary Ash

Route 1, Newport, Minn. 55055

M. O. U. Representative: Kathy Engstrom

THE PRESIDENT WRITES . . .

As we reflect on 35 years of MOU activity we are forced to ask - what has made the MOU the great state-wide organization that it is? There is only one answer. People make the MOU!

We are joined together by a common interest in birds and the preservation of their environment. Our special interests are as varied as our backgrounds. Some of us "live" for the spring warbler migration, others revel in studies of the birds of prey. We have listers, banders, counters, feeders, photographers, "big-day" enthusiasts, and those passive souls who are happiest when perched on a comfortable log being entertained by those birds who happen to come their way.

The MOU is our common ground. As an organization it provides for organized group activities for all our members, — our North Shore winter trip, our spring field trip, and the hawk count at Duluth. The novice has the opportunity to learn more about his hobby from the "old-pro" beside him. Our December annual meeting and program puts emphasis on current research in ornithology, on in-depth reports on regional birding areas, and on factors affecting our natural environment. Our annual meeting banquet is the social event which closes the past year, recognizes special efforts (the Roberts Award), and launches us on a new year of birding.

Our publications, — The LOON and the MOU Newsletter, are superb. The Newsletter keeps our members informed of club activities, field trips, and coming events. The LOON is one of the finest state ornithology publications in the country. Our MOU bird slide file is fast becoming another effective media for promoting birding in Minnesota.

Our Research and Records files hold the most complete records of birds in Minnesota. Our Hot Line provides a means of knowing of unusual or interesting bird sightings while the birds are still in the area and hopefully may be seen by Hot Line participants.

All these activities are dependant on the dedication and hard work of our editors, committee chairman, and officers. They can succeed only with the assistance and participation of our members. People, the members, make the MOU great. We can make it even better!

Happy 35th birthday, MOU.

BILL BRYSON

THE LOON COVER PHOTO CONTEST

Over 100 entries of slides and prints were received for the cover photo contest. The judging of these slides and prints took place on September 13, 1973 and was done by Dr. W. J. Breckenridge and Robert B. Janssen.

The winners are as follows:

1st Place - Steve Blanich of Crosby, Minnesota for his photo of the Bohemian Waxwing. The photo was taken on December 1, 1971 in Crosby. The bird photographed with a Hasselblad 500c camera with a 250mm Sonnar lens, exposure 1/250th at F.8, using 120 high speed Ektachrome film. The picture is reproduced on the front cover of this issue.

2nd Place - A Common Loon on

nest, a photo print taken by Dr. Paul W. Harrison and Paul Wilson. The photo was taken in 1967 on Long Lake near Park Rapids.

The 2nd place photo is reproduced on the inside back cover of this issue.

3rd Place - Virginia Rail taken by Mr. W. H. Wyatt of Fargo, North Dakota. The slide was taken on the M. O. U. 1973 Spring field trip at Pelican Lake near Ashby.

4th Place - Singing Yellowthroat print by Bernard P. Friel. The photo was taken during July, 1973 near Mendota Heights. The 3rd and 4th place photos will appear on future "Loon" covers in black and white.

EDITORIALS

SHOULD THE MOU HAVE A 300 CLUB

As we all know, there has been a growing interest in bird-watching and specifically bird-listing as promoted by the American Birding Association, (A.B.A.). With more people "playing this game" just for the fun of it and the joy of looking at birds, I have been thinking that the M.O.U. ought to participate.

Many of us are listers keeping U.S. lists, year lists, state lists and many other kind of lists. There are a number of people in the M.O.U. and around the state who keep Minnesota life lists, at least 21 people reported their lists to the A.B.A. last year. There are probably many more than that keeping Minnesota lists, possibly over 100

TO LIST OR NOT TO LIST

As a geologist concerned about Americans' rapid use of nonrenewable natural resources - and as a naturalist interested in how entire natural communities are interrelated - I have

developed a somewhat different perspective on the rather recent but increasingly popular pastime among birders known as "listing". It is a point of view that I believe to be valid and I hope worthy of consideration by

people. Interest in the M.O.U. could be increased if somehow these people were recognized.

I would suggest that a 300 Club be formed to give these people recognition. There would be no dues, the only requirement being that the person belong to the M.O.U.

Members of the club would be listed in "The Loon" once per year giving their list totals. Once per year at the M.O.U. paper session new members to the club could be recognized by reading a list or recognized in person. Once per year an article could be carried in "The Loon" giving highlights of members observations and other interesting news about the club.

Your thoughts and comments would be appreciated.

BOB JANSSEN, Editor

M. O. U. members as a possible alternative to proposals for actively supporting competitive listing as an M. O. U. activity. (Nothing I say here should be construed as reflecting - or influencing - my dear wife's behavior).

Let's look at several of the most significant reasons why birders are organized in a group such as the M.O.U. The M.O.U.'s pamphlet describing its activities lists three basic purposes: contributing to scientific knowledge through bird observations; stimulating public interest in birds; and working to preserve bird life and bird habitat. How does competitive listing fit into these purposes, and what are the advantages of listing that deserve its support by the M. O. U.?

The M. O. U.'s purposes as mentioned above could be called socially beneficial in that they provide benefits beyond the individual who contributes - benefits to science, benefits to the public, and benefits to the birds themselves. Listing, on the other hand, is an every-person-for-himself matter, benefits accruing only to the individual. Luckily, birders seem to be a pretty good bunch, and though listing competes individual against individual, cooperation and mutual help are the rule rather than the exception. But the scientific benefits are minimal, since most birds added to one's State list as the magic number of 300 is approached or exceeded will come from tip-offs on a bird that someone else has found accidentally. Listing and its rewards of satisfaction are confined to those infected, thus it doesn't "stimulate public interest in birds". Nor does it contribute in the slightest toward preserving bird life or bird habitat.

There is no doubt that for those hooked on competitive listing, it is stimulating, fun, and provides motivation to get out there in the woods, fields, or marshes under a wide variety of not always comfortable conditions. However, we could also ask what are the skills or qualities that competitive listing develops? I suggest that these are mainly (a) persistence and (b) tole-

rating long trips without much sleep. What are the requirements for being a serious lister? Here are some: (a) money for travelling - and this will become more of a consideration as gas prices continue to rise - (b) relatively few constraints on one's time, so that at the drop of the "hot line" receiver one can zap off to Salt Lake, Knife River, or Rochester for the latest goddie, and (c) a sympathetic and understanding family, which I imagine is not always easy to come by.

In contrast, let's look at some alternative activities available to the enthusiastic birder, by which he can contribute to bird knowledge or to birds themselves. In particular, I am thinking of studying a particular area or habitat type thoroughly, perhaps the year round, for many years, preferably near one's home. Many of the real, substantial contributions to our knowledge and understanding of Minnesota bird life have come and are still coming from people who have done intensive work in limited areas - for instance, Nestor Hiemenz in Stearns and Sherburne Counties, Brother Theodore in Winona County, and Terry Savaloja in Aitken and Crow Wing Counties. There is still a great deal to be discovered about the year-round distribution and especially breeding of birds in Minnesota, as the soon forthcoming book by Green and Janssen will attest. Listing tends to dissipate, with minimal scientific results, useful birding skills and energies. Furthermore, it is a very human characteristic that when one wants very much to see a particular bird in a particular place (especially if you know others have seen it), one can sometimes be persuaded by an imperfect observation more readily than if that motivation were "not operative". And as for other personal benefits of local birding versus state-listing, I believe that one can build up a better ecological understanding of plant and animal communities in whatever part of the State one is birding in, than when one is simply dashing here and there picking off goodies, that some-

one else has found, to add to one's list.

Finally, to get back to my original idea, driving from Minneapolis to Thief River Falls, from Duluth to Heron Lake, or other such jaunts just to benefit one's personal list is in my eyes a profligate use of some of the world's never-to-be-replaced fossil fuels. Don't stop birding, but stick

closer to home - and learn more!

JOHN C. GREEN
9773 North Shore Drive
Duluth, Minnesota

Editors Note: Your comments and opinions are solicited on the above editorials. Send them to the editor.

THE M.O.U. 35th ANNIVERSARY STORY

As part of our 35th anniversary issue your editorial staff thought it would be interesting to reprint two articles written by Thomas S. Roberts. These articles give an idea of what birding was like in Minnesota during the "good old days." The first article is reprinted from "Conservation Topics" February, 1941. This journal was the forerunner of the present "Volunteer" published by the then Minnesota Department of Conservation, now the Department of Natural Resources. The second article on "Early Rambles of a Bird Lover in Minnesota" is reprinted from "The Flicker" of October, 1944. Read the articles and compare them with your own experiences of today.



T. S. Roberts

A great ornithologist recounts the amazing waterfowl population that made Heron Lake famous

HERON LAKE THROUGH THE YEARS

Bird life in the "Good Old Days"

Thomas S. Roberts

Far out on the Jackson county prairies of Southwestern Minnesota lies a large shallow lake. It is in two parts, a northwestern and a southeastern. Altogether it stretches some 14 miles with a varying width of from two to three miles.

The northern part is a vast expanse of

aquatic vegetation, mostly quill reeds or "white cane" (Phragmites), with little open water visible from the low shore line. The southern part is different. Low bluffs with sandy and stoney beaches form much of the shore line, and from wooded groves here and there glimpses may be had of a wide

expanse of open water—an attractive prairie lake.

The two parts of the lake are connected by a great marsh through which winds a sluggish stream moving northward by an almost imperceptible current. Under normal water conditions two streams enter the northern lake from the west, Okabena and Jack Creeks, and an outlet leaves the northeastern corner to enter the Des Moines River which flows southward not far to the east. In common with all of the shallow prairie lakes, the water level is subject to great variations, and at times considerable areas of the northern lake are practically dry for a season or two, as at present. Duck Lake— as the extreme northern part of the lake is called, suffers most during these periods of drought and was so dry some years ago as to be partially under cultivation.

Such is Heron Lake in Jackson county, so called because of an immense colony of nesting black-crowned night herons that has existed there since before the advent of man. But the night herons were by no means the only early denizens of this unspoiled lake which was to become more famous as its marvelous wildlife became known. As man trekked westward across the prairies in advance of the railroads, he marveled at what he found here.

Such an early comer was a Mr. Peters who settled on the east side of the northern lake well down toward what was later to be known as Winzer Bay. From him the writer heard of the lake's bird life during the early fifties of the last century. From early spring until late fall waterfowl of all native species filled the air and the water, and the clamor of bird voices was incessant day and night. Countless canvas-backs and redheads mewed and purred without ceasing as they pulled wild celery from the muddy bottom and rose for their exercise flight with a noise like thunder. The celery grew in such profusion that it was difficult to force a boat through it.

Canada geese breeding in numbers added their honking to the general clamour. Trumpeter swans made the marsh land between the lakes their home and the cygnets disported themselves on its open water. The

last pair of nesting swans was reported as late as 1883. These were the trumpeters which are now almost extinct. The migrating swans seen today are the whistlers, which always nested in the far north.

White pelicans and cormorants (black loons) sailed back and forth over the whole lake and nested together on a long rocky point that projects far into the southern lake from its western shore. The bugling notes of the cranes, the sandhill and the whooping were heard from the adjoining lowlands, for both species bred thereabouts. Vast flocks of shorebirds came and went and some that no longer know Heron Lake nestled on the uplands, among them the long-billed curlew, the willet, and the avocet. Each spring vast flocks of the now extinct Eskimo curlew passed northward. Such and many more were the stories related by old man Peters.

Many years later, but still at an early period, there came to the lake a canny Scotchman, Thomas Miller, who with his family settled on a sandy, sparsely wooded point at the northwest end of the lake— since that time called Miller's Point. He had a lively, intelligent interest in birds, especially water birds. For years he sent W. W. Cooke of the U. S. Biological Survey copious migration records from which Cooke quoted freely in his various publications. Miller farmed, bred fine horses, and shot for the market from the spring of 1883 until his death in 1899, a date that coincided with the abolition of spring shooting. At the writer's request, Miller prepared a description of the duck conditions at Heron Lake when he came in 1883. Brief extracts are of interest:

"When I first settled on the shores of Heron Lake, its water teemed with vast numbers of ducks and geese, and on some nights sleep was impossible owing to their continual clamor. The honking of the Canada goose, the mewing call of the canvas-back, redhead, and bluebill— usually uttered while feeding, mingled with the whistling call of the pintail and widgeon, mixed with the coarse quacking of the mallard and the more feeble call of the gadwall made a strange medley of sounds. The first spring I lived here (1883) the water came up to

within 25 yards of the house and during March, until the migrants moved on north, we had a noisy concert every night. When day broke a sight was to be seen that would make a sportsman's heart thrill with delight. Ducks to the right and ducks to the left everywhere you turned. In 1883 Heron Lake was indeed a sportman's paradise. But the repeating shotgun and an influx of hunters from all over the United States made sad havoc."

In the spring of 1883 and again in 1885 the lake and vicinity were visited by a Mr. J. W. Preston in the interest of bird study. He kept a detailed diary. A transcript of the Minnesota portion is in the library of the Minnesota Museum of Natural History. Here we find records of the nesting of the whooping and sandhill cranes, of many Canada geese, pelicans, curlews, and ducks without end. Preston was the first man to publish a full account of the Heron Lake nesting of Franklin's rosy gull which has always, even to this day, been such a spectacular feature of this lake. Many thousands of gulls assemble annually to form a compact breeding colony somewhere among the reeds and coarse vegetation around the lake. It is a sight worth going many miles to see. In 1916 the writer estimated that there were at least 50,000 nests in the colony.

As soon as the wildfowl conditions at Heron Lake became generally known, hunters from the east and hunters from the south pushed in numbers across the trackless prairie and very soon the pristine peace and plenty were shattered and scattered by the roar of the invader's firearms. As time passed these alien hunters formed themselves into groups or clubs and established living quarters on land leased from the settlers. It was not long before the entire shore line of the northern lake was thus occupied, and Heron Lake became, and still is, a club-controlled shooting preserve.

One of the earliest was the Winzer club on the southeastern corner of the north lake the membership of which consisted largely of a group of St. Paul physicians. Prominent among them were Dr. Charles A. Wheaton, the eminent surgeon of that day, Dr. Alexander Stone, and other leaders in the profession. It was

somewhat later when Minneapolis hunters discovered Heron Lake. Mr. Russell M. Bennett was one of the first of those who used to bunk in primitive fashion with old Tom Miller. Soon others followed and clubs were formed. The Heron Lake club at Miller's Point with Mrs. Dazell, Tom's sister, looking after the needs of the members, and the Ranch, presided over by the Reeves family, appeared. These and others were on the west side with Peter's next to the Winzer and still others on the east and north. When the weather was right, the birds were moving and the clubs active, the whole northern lake resounded with salvo after salvo as the circling flocks of canvas-backs and redheads came in successively to the banks of decoys.

The thousands upon thousands of ducks that thus fell to the clubs, added to the vast numbers taken earlier by the market hunters, inevitably resulted in a steady decline in the number of birds. In the middle eighties a market hunter might easily get 90 or 100 redheads and canvas-backs in a morning's shoot. The writer has a letter dated in 1893, from a man who shot for the market, in which he complains that the shooting is getting poor and then goes on to relate how he and two companions killed 97 redheads and two canvas-backs one day in mid-September of that year.

Soon after the middle of the nineties such men as these who had been guilty of the greatest slaughter woke up to the fact that their resources were failing them, and the more enlightened decided something must be done to stem the depletion. A leader in this group, Tom Miller, who had slain his thousands, wrote in 1898 to Mr. Sam F. Fullerton, then head of the State Game and Fish Department, proposing certain radical changes in the game laws which with one exception have since been adopted.

Miler proposed: "(1) Abolish decoy shooting. Unless this is done our wildfowl are doomed. (2) If possible prohibit the use of repeating shotguns. When one man has killed 24 ducks out of a flock of 25 it cannot be called anything but slaughter. (3) No spring shooting. (4) Non-residents to pay a tax of \$25." Mr. Fullerton sent an approving reply, but doubted that decoy

shooting could be prohibited though he himself thought it might be a wise move. Miller always shot over decoys, largely at canvas-backs and redheads, birds easily lured. Miller did not live to see the amended laws.

The clubs about the lake employed local men, mostly farmers' sons, as guides, for under conditions existing at Heron Lake a guide or boatman was absolutely essential. As the shooting became poorer and poorer, these guides banded themselves together and drew up an "agreement," the conditions of which provided protection for the birds. It was printed as a circular and widely distributed among those who hunted at Heron Lake. It is dated October 24, 1906, and after listing some of the reasons why the shooting opportunities at Heron Lake were diminishing pledged the undersigned to observe the following rules:

"1. We will leave the lake and not shoot on or near the same after two p.m.

"2. We agree not to get into or start our boats from the landings until six a.m. by correct railroad time.

"3. We will not cross the open water at any time in boats, and, as far as possible, will travel to the rear of parties that may be shooting at the open water line."

The copy of this agreement in the possession of the writer has 36 signers, including all the well-known guides. A footnote states that "ducks will not decoy to a location

where they are not allowed to feed undisturbed during the afternoon and night," and "long range wild shots cost the other fellow many a good duck." It might be added such shooting also results in many a lost cripple. This agreement was generally approved and accepted, and as the writer can testify, Heron Lake, was thereafter on afternoons and evenings as quiet as a graveyard. It was unquestionably a wise and beneficial move and to a certain extent is reflected in our present duck shooting regulations.

The writer's first visit to Heron Lake was in May 1893 for the purpose of studying the birdlife, especially the Franklin's gull and night heron colonies. In subsequent years museum trips were made both spring and fall, the last in 1919, which afforded an opportunity to witness changing conditions. With the coming of the carp and the depletion of the wild celery, (if that is the true sequence), the great fall gatherings of redheads and canvas-backs largely ceased, and to many duck hunters this spelled the doom of the lake. Its glory was gone—"The good old times" were past.

Heron Lake, however is still a wonderful and fascinating place to the bird student and satisfying to the hunter who is content with recent conditions. Up and down our western prairies there are numerous similar places but nothing quite like Heron Lake.

EARLY RAMBLES OF A BIRD LOVER IN MINNESOTA

by Thomas S. Roberts

Just when the writer became a "bird-lover" is not quite clear. It must have taken definite form sometimes between the ages of 12 and 15. Whether or not there was any external stimulus or whether it just happened, like Topsy, it is now too late to determine. Perhaps some latent or developing interest was aroused and fostered by an

early acquaintance with a Mr. W. L. Tiffany, a gentleman who played a part in the infant milling industry of the city. He was a friend of Mr. Wm. H. Dunwoody who was a friend of my father, and this led to a mutual acquaintance that developed into an intimacy and companionship which continued for several years. Mr. Tiffany was a large, rugged man, adorned with a big mustache and goatee, possessed of a loud voice and hearty manner, and was usually so engrossed in the subject at hand that he was entirely oblivious to all else. He was a thorough out-of-door man, fond of hunting

This paper was written a number of years ago at the request of certain members of the Minneapolis Audubon Society and read before the society.

and fishing, and had come from the shores of New Jersey where, he was wont to say, he had been a "longshoreman." But he was well-read, had traveled extensively, and associated with literary and artistic people, and was withal an interesting and stimulating personality though generally considered a bit odd by the ordinary run of folk, which is the usual fate of a man or woman with a "hobby." Before we knew him he had become associated with Dr. P. L. Hatch, the father of Minnesota Ornithology, in his earlier bird studies, and together they worked out the many problems that came up frequently in those days of few books and scattered writings. Tiffany had known Spencer F. Baird, Director of the Smithsonian Institution, and was the happy possessor of one or two Pacific Railroad Survey publications on birds. An anecdote of the time that used to be told on these two bird-men illustrates the single-mindedness and enthusiasm of at least one of them when interest ran high. An unknown bird, which neither could place, had been taken on Sunday afternoon. The following morning Mr. Tiffany, having run down the stranger, searched the town for the Doctor and at last located him in his accustomed pew at church listening to the morning sermon. Nothing daunted, the excited Tiffany rushed up the middle aisle and, seizing the astonished Doctor by the shoulder, said in a loud stage whisper "Come, come out. I've found it." Having known the man, I can believe it really happened. Such total absence of self-consciousness is to be envied.

It is more than likely that the kindly interest of such a man over a series of years had a strong influence on a growing boy who already had a sympathetic bias, due, in part at least, to living constantly in the open with an invalid father. At all events it was a great help to be able to go to this friendly man and his co-worker, Dr. Hatch, to check up on new "finds" and talk things over. Dr. P. L. Hatch was the leading homeopathic physician of those early days, was the recognized bird authority and the official state ornithologist of Minnesota. He came to Minneapolis in May, 1858, from western New York, already interested in birds, and had the wonderful experience of witnessing the bird-life of the

region in almost its pristine condition. He was a most enthusiastic student and lover of birds, going much a-field armed usually with field glasses rather than with a gun. He would drop everything, even his professional work, to engage in a rapturous bird talk. I have known him when called to see a patient who was a bird-lover, to talk birds for an hour or more, and leave without once referring to the subject of the visit! Perhaps if more doctors would do this it would be quite as helpful as the neglected physic. Unfortunately Dr. Hatch, in spite of his calling, was not possessed of a scientific mind or orderly habits of assembling and preserving information. He made no permanent collections and apparently kept no notes or records as none could be found after his death. He was credulous to an extreme and believed all that was told him even when it did not fit in with current knowledge. Thus his first list of the birds of Minnesota, published in 1874, and subsequent annual reports to the Minnesota Academy of Natural Sciences, while they were surprisingly full for the time, contained many in-accuracies that might have been avoided. And when, much later, he prepared a volume to be printed as a "Report on the Ornithology of Minnesota," the lack of manuscript records caused many of the biographies to be little more than fading memories of the past. When it comes to scientific book making, enthusiasm and credulity will not take the place of recorded observations, carefully sifted data, and a knowledge of previous publications on the subject. But much valuable information may be culled from the well-phrased writings of Dr. Hatch, and, while he was not one of those cold-blooded, critical doubting mentors who must be shown things, he was a genial, warm-hearted nature-lover whom all of us, who knew him well, liked and honored. It is to be regretted, however, that it was not within his power to put accurately on record experiences that were his alone, never to be repeated.

On February 12, 1875, a group of seven high school boys formed themselves into a nature study club with the rather presumptuous name of "The Young Naturalists," and met frequently for three years thereafter. Each was interested in some phase of natural history, and the association was

a stimulating one. Papers were read and records kept. The annotated list of some six hundred species of plants was later incorporated in Warren Upham's "List of Minnesota Plants." One of the members, Clarence L. Herrick, was a talented young man who, in after years did much valuable scientific work along several lines, and during the last ten years of his life, while afflicted with pulmonary tuberculosis, organized and served as President of the University of New Mexico, dying while still in the service of that institution. Robert S. Williams, another member, primarily a bird student, was for many years the moss expert of the Bronx Botanical Gardens, New York City. Leon E. Lum, the faithful secretary and general all-around helper, recently died at his summer home near Brainerd, after having been a prominent attorney at Duluth for many years.

The Minnesota Academy of Natural Sciences was organized in 1873, and we boys were always made welcome at its monthly meetings. Perhaps some of the earlier papers on "The Antiquity of Man," "Did Life Originate by Law," and so on, were somewhat academic and ponderous for youngsters interested in birds, eggs, and flowers, but still there was a sense of being in august company that was inspiring and helpful at this impressionable age. Prof. N. H. Winchell was an active member, and as State Geologist always presented matters of interest. He was a man of great personal energy and enthusiasm, and always had an encouraging word for any and all beginners in natural science studies. Dr. Hatch was a regular attendant and his earlier papers were presented at the Academy and may be found in the published Bulletins.

In June, 1874, there came to Minneapolis on a collecting trip a young man—Mr. Franklin Benner—from New York City, who had had contact with eastern scientists and who was versed in the details of making collections. From him the writer learned the art of making bird skins and preserving birds' eggs, and from that time a private collection of bird skins and birds' eggs rapidly took shape. This collection became in after years the nucleus of the present study collection of the Minnesota Museum of Natural History, the maker little dreaming that they would be handled and ponder-

ed over by successive groups of University students and Audubon Society members. Collecting and preserving specimens, as was done by every bird student of those early days, is the only way of laying a safe and permanent foundation for accurate records.

And now, having pictured something of the human background and environment of those early days in respect to nature study, we may turn to a brief survey of the natural conditions as they then existed in these parts. It was in the fall of 1867 that the writer came to Minneapolis, a boy of nine years. From that date until 1874 no written record was kept, but a fairly good memory still keeps alive many of the conditions and incidents of even that early period. When not in school, almost the entire time was spent in exploring the woods, fields and lakes, which were then near at hand, in company with a companionable father who had been ordered to live out of doors and who had come to Minnesota for that purpose. A patient horse, an open buggy, an old muzzle-loading gun, a friendly shepherd dog, and the man and the boy completed the outfit that went afield on all possible occasions. Game was plentiful and near at hand, and needless to say the boy had an ideal existence such as it would be difficult to duplicate today. Minneapolis was little more than a village, with St. Anthony on the opposite side of the river. The falls were in their primitive condition, and on quiet evenings the roar of the falling water could be heard throughout the town. The old government suspension bridge hung low over the river at the foot of Hennepin Ave., and Nicollet Island was a wild beauty-spot and good collecting ground. Bridge Square was full of oak trees and was the place where farmers gathered with their loads of hay, wood, and grain, and waited and visited until purchasers came. The streets were deep in mud or dry, as the weather determined. Nicollet, below Fourth, and Washington Avenues were the business streets. Hennepin beyond Seventh Street still contained portions of the original prairie sod, and rail fences still inclosed certain undivided areas. Dwellings of New England type straggled along out Hennepin to about Twelfth Street. The oak woods that is now Loring Park was in the country, and

the lake nearby, now largely artificial, was deep, spring-fed, and full of fish of many kinds. It had a considerable outlet—deep enough for bass and pickerel to come and go— which crossed Hennepin, the old territorial road, about where Harmon Place now joins that avenue. This stream ran into a weedy lake which, with the surrounding meadow, occupied most of the present Parade Ground. Ducks bred here and in 1877 it was still a meadow and at least one pair of LeConte's sparrows nested there which, with most of the young, are now in the Museum collection. "The Bluffs," as they were called, lay just beyond this low land. They were rough and much broken, densely wooded in the hollows, and, in the minds of the school children of those days, harbored many fearsome wild creatures—perhaps even Indians, who in the recent past had created such a terror in the state. Hennepin Avenue, a narrow trail, went steeply up the Bluff about where it is now, having been then but recently straightened from a winding course through the thick woods. Over the Bluffs the road wandered across open prairie with good duck ponds on either side, past two or three low one-storied farm houses to what is now called Lake Street, where the hinderlands began in which deer still lived and hunting was good. As one reached the crest of the Bluffs a glimpse could be had of an open lake, called Powderhorn Lake, which lay where Lyndale Avenue now runs between Franklin and 24th Street. This was a good duck lake, and the boys caught sunfish and bullheads. No one would ever suspect today that the streets and houses are over an old lake bed.

Horseshoe Lake (now Brownie Lake), Cedar Lake, Lake of the Isles, Calhoun, and Harriet were almost as they were made - - - beautiful, clear-water lakes - - - full of black bass and other fish, and the resort of myriads of ducks both nesting and migrating. The causeway between Calhoun and Lake of the Isles was a good "duck pass" - - better than most of those in the state today.

The woods on the west and south of Lake Calhoun were little disturbed, except for the small openings overgrown with sumach marking the sites of the Indian villages of former years. On the high bluff to the east of Calhoun were numerous shallow depres-

sions and many sumach, indicating the spot where was located a Sioux village and the cabin and farm of the Pond brothers in the middle 30's. Similar evidences of the larger settlement and the Mission of the late 30's still exist at the north end of Lake Harriet.

Between Calhoun and Harriet ran a good-sized stream bordered by tamarack, which was excellent birding-ground and a favorite haunt of the few bird students of that time who got so far afield. Here the writer made many new acquaintances and secured many specimens.

Unknown to the writer at that time, a noted nature student and now celebrated author had roamed through these same Calhoun-Harriet woods not very many years earlier. The early road around the south shore of Calhoun just as it left the lake climbed a gentle hill and then turned abruptly toward Harriet. Right at that angle, about where the Ueland home now stands, was a small white house behind a picket fence. Here lived a family named Hamilton, and here Henry Thoreau spent a brief period in early June, 1861, and searched the country about and between the lakes for flowers and birds. He visited the swamp between Calhoun and Harriet, circled the lakes including Lake of the Isles and made a list of the plants and birds, including several passenger pigeons' nests. The detailed journal records that he made here and throughout his stay in Minnesota were never elaborated into book form as he intended but have been published in somewhat garbled form and the original journal is preserved in The Henry E. Huntington Library in San Marino, California. Years later on perusing Thoreau's journal and noting the familiar names of places where he had found and described birds' nests and rare flowers, it added a new and thrilling interest to the old scenes to realize that I had been following closely in the footsteps of the illustrious poet-naturalist.

It may be of interest to state that the woods about Calhoun and Harriet were still the home of many deer. They lived and bred there and were not finally driven out until 1874 and 1875, when a man living down near Minnehaha, armed with a rifle and aided by hounds, killed 17 deer in this limited area and so exterminated, for good and all, the Calhoun-Harriet band of deer.

The present Minikahda Golf links and the lowlands lying south and east were the chief dwelling places, and many a deer have I chased through that now thickly populated district.

Out where Bryn Mawr stands today was a wonderful tamarack swamp, reached by a trail through the woods that ran about where Hawthorne Avenue is located. It was a paradise for birds, especially warblers, and a place where many interesting plants could be found, difficult to locate today.

The Fort Snelling Reservation and where Shoreham is today were almost virgin prairie and the summer homes of hundreds of pairs of upland plover, or, as we called them then, Bartramian tattlers. The latter locality was known as Sandy Lake Prairie and was the favorite hunting-ground for this bird. Until the middle 70's large numbers were killed there every year, usually in July and August. They were excellent eating and so were much sought after.

The Steel and Machinery Plant in South Minneapolis stands right in the midst of what was the chosen feeding and resting place of thousands of golden plover that came each spring and fall until the early 70's. While the plover were here they received the same deadly welcome that they encountered everywhere during their travels in settled lands.

The Lake Johanna and Lake Amelia (Nokomis) regions were little altered, and the oak woods that adjoined them were the resorts of myriads of passenger pigeons that arrived every April and settled there to feed on the acorns.

Minnehaha was a beauty spot, and the glen below secluded and full of interesting birds and flowers. Except by a few fishermen who came to fish in the pool down near the river, it was rarely invaded below the old grist mill, long since gone. Here I found my first and only blue-winged warbler, and discovered a nest of the golden-winged warbler.

When the writer first visited Lake Minnetonka, about 1869, a single small, stern-wheeled, flat-bottomed steam boat was making laborious trips daily between Wayzata and Excelsior, for these villages were in existence at that early date. The shores of the lake had been little disturbed and the upper lake was wild and far away.

Throughout the 70's game laws were much less stringent than now, and there were no restrictions on spring shooting or the sale of game. So the butcher-shops afforded fine places for the study of game birds both spring and fall. Great bunches of ducks of all kinds, geese and several species, grouse, and, most interesting of all, considerable numbers of cranes, both sandhill and whooping, were exposed for sale, hanging outside and in. It was my custom to explore these places on my way to and from school and occasionally to purchase a specimen for closer study.

Such, in brief, were some of the conditions in and about Minneapolis in those days when the bird-lover was first beginning to ramble. Out in the state, northwest, things were just beginning to emerge from the early settlers stage, with railroads and villages forcing the frontier onward and conditions developing that were already working havoc with the original wildlife inhabitants. The fate of the wild pigeon, of the whooping crane, of the eskimo curlew, and of the golden plover, was already being determined. The buffalo had gone from Minnesota some time before. The elk and the caribou were retreating and with them were going the trumpeter swan, the long-billed curlew, the nesting pelicans, the avocet, and others that could not withstand the advent of man. With the exception of Thomas Say, the entomologist who was with the Long Expedition in 1823 up the Minnesota River to its source and thence north to the Canadian Boundary, no real naturalist visited this region that is now Minnesota before settlement began, and so we are without an accurate account of real primitive conditions. It is only from the random jottings of early explorers, voyageurs, and trappers that the picture can be imperfectly constructed.

There is no period in the life of a student of nature which is more filled with true delight and real thrills than when his eyes and understanding are first opened to the things about him. If it comes early, so much the keener the enjoyment and the more lasting the impressions made. Everything, even the most commonplace, is new and wonderful, and it is hard to believe that the things were there before, unseen, and that they are not, in truth, new discoveries.

Well can the writer recall the sensation produced by the first bald eagle seen circling high over the city on a late March day in 1874 and described in the journal, begun at that time, as a big new hawk with pure white head and tail; by the first northern shrike or butcher bird collected on April 2nd of the same year; by the vast, whirling flocks of snow buntings seen the following day beyond the Bluffs; and, most thrilling of all, by the sudden and mysterious appearance in the city of a great influx of a little chirping bird that filled all the trees and shrubbery, and which proved to be the yellow-rumped or golden-crowned warbler—myrtle warbler, as we call it today. It was a banner-day for a beginner, and, as memory goes back to the 15th of April, 1874, it really seems as though never since have myrtle warblers come in such vast numbers. But the **great day** was May 9th of that year. It was a windy but warm day with the early leaves just appearing on the willows and poplars, as the spring had been cold and late, and we went on a collecting-trip over to Lake Johanna. The journal says "We had a very pleasant day and saw a little of everything" which included wild pigeons, upland plover, chewinks, yellow warblers, and several early nests; but the event was the taking of two handsome strange birds late in the afternoon. These were duly submitted for identification to Dr. Hatch and Mr. Tiffany, who were plainly "stumped" but who, after much searching, pronounced them to be the then little-known Harris's finch. To this day I never see a Harris's sparrow without harking back in memory to that wonderful trip to **Lake Johanna**. Such are the joys of the tyro!

Nests of the scarlet tanager and orchard oriole were memorable events of that first year, and during a camping-trip to upper Lake Minnetonka the nest of a bald eagle containing young birds was discovered in a large white oak tree about where Spring Park is located today.

The swallow-tailed kite was fairly common at that time and nested in the forest about Lake Minnetonka. During migration little parties of a half-dozen or so might be seen sweeping along in graceful flight, and never ceased to be a joy. The entire disappearance of this beautiful bird, from our state, is difficult to explain.

The following winter of 1874-75 was a very severe one with heavy snows toward spring, four or five feet deep, blocking all the roads even for the sleighs then in use. Temperatures of 18 and 20 degrees below zero occurred in the third week in March. Pine grosbeaks appeared in February and March in considerable numbers—flocks of 50 or 60—feeding largely on sumach berries out about Lake Calhoun. They were new and strange to us beginners. Snow buntings were abundant in late March—flocks of many hundreds, their wings making a noise like a flock of pigeons as they rose and whirled about—at least so says the journal. They frequented the prairie east of Lake of the Isles and Calhoun on both sides of Hennepin.

During these early winters a flock of ducks always remained in the boiling pool below St. Anthony Falls and occasioned much speculation and some attempts at shooting them. They proved to be the American golden-eye and not Barrow's as had been conjectured.

On May 14, 1875, a mated pair of snow buntings in full nuptial plumage was taken near the city. The male bird was blind in one eye, at least. It has always been a matter of wonder whether or not they would have nested here if they had been spared. As it is, these specimens are among the choice things in our collection.

The springs of 1875 and 1876 brought many new acquaintances, with records of 61 and 109 new arrivals respectively. It was a period of active collecting, and, despite the demands of high school, many specimens were secured and prepared which may be found in the trays of our study collection. Sometimes we build better than we know.

On the 23rd of October, 1875, while driving through the thick woods near Lake Harriet we were startled by a beautiful red bird that flew up by the roadside. It proved to be a cardinal and at time was considered probably an escaped cage-bird. Now we know differently and look upon it as a fore-runner of the northward movement in the range of this species that has been taking place in the last fifty years. The skin of this first bird is still in good condition in our collection.

The winter of 1875-76 was the great Bohemian waxwing year. They came in

great numbers and remained until late in April. Large flocks, like flocks of black-birds, could be seen daily moving about through the city. They fed on berries of all kinds, and toward spring, when food ran low, sought out the back yards of grocery stores where decayed apples had been thrown out. These they ate greedily. The ground where the Art Institute now stands was thickly covered with wolfberry bushes. Here they congregated and spent much of their time devouring the withered and dried berries. Never since has there been such an invasion of this beautiful bird.

In those early years there were always many evening grosbeaks in and about Minneapolis, as is still the case in some other cities in the state. Our city streets were then full of box-elders with abundant fruit, which was what attracted them. Towards spring they assembled in large numbers on the upper end of Nicollet Island, where they fed on the ground on the fallen keys of the many sugar maple trees. They could always be found there in the mornings, but afternoons they were absent and apparently went visiting around. They were little known to ornithologists at that time and were regarded as a mysterious and specially interesting bird. Their nesting-habits are still but imperfectly known, and it is only recently that we have learned positively that they breed in northern Minnesota. We used to believe that they went far north in the summer. Not a few specimens of this bird in our collection were taken on Nicollet Island, for, in the days of which we write, little or no attention was paid to a man who might choose to go hunting in the middle of the city.

The winter of 1877-78 was the phenomenally mild winter. There was little snow so there was no sleighing all winter, a most unusual thing in those times. Spring opened early and the ice went out of the Mississippi River above the Falls on March 5th. The lakes began opening on the 7th, and wild geese and a bluebird were recorded on that date; on the 8th, robins, mallard ducks and wild pigeons; maples were in full bloom on the 9th; fox and swamp sparrows came on the 12th; pasque flowers were in bloom on the 17th; on the 18th, a horned lark's nest

contained young birds; and by April 1st most of the early spring flower were in full bloom. Thereafter April was more like May, except that it is interesting to note that the warblers, vireos, and other far-migrating birds did not arrive until about the usual time in May, uninfluenced by the early spring. **Minnesota Museum of Natural History, Minneapolis.**

A Brief History of Minnesota Ornithologists Union 1938 to 1973

Organization

The Minnesota Ornithologists' Union (MOU) originated in April 1938 when members from the Minnesota Bird Club of Minneapolis, the T. S. Roberts Ornithology Club of St. Cloud, and the Duluth Bird Club met in St. Cloud to join forces to further ornithology in Minnesota through the combined efforts in publishing a single magazine, sponsoring a state wide meeting, and promoting field trips. Organizing of the MOU began October 10, 1937 at St. Cloud when several members of the first two clubs met to discuss preliminary plans. The Duluth group was contacted by correspondence.

The first officers were:

President - G. N. Rysgaard, St. Paul - 2 years.

Vice-President - Miss Mary Elwell, Duluth - 1 year.

Secretary-Treas. - Richard Voth, St. Cloud - 1 year.

Editor - Charles Evans, M.D., Minneapolis - 1 year.

For eight years the annual meeting rotated between St. Cloud, Minneapolis and Duluth. In 1943 and 1944 there were no meetings because of the war. The gatherings were a combination of field trips and indoor meetings for business, presentation of papers, and movies.

What is the M.O.U.?

Those of us who belong to the M.O.U. and have such a good time at the meetings and field trips are apt to take for granted that non-members know what this organization is all about. M.O.U. stands for Minnesota Ornithologists' Union. It is a state-wide group dedicated to the conservation of our natural resources and all wildlife, with a particular emphasis on birdlife. It is composed of a wide range of nature lovers from seriously scientific, professional ornithologists and biologists to amateurs like you and me who just like to observe the birds. The amateurs far outnumber the professionals in the group.

We get together four times a year. In December we have an annual Paper Session at the Bell Museum of Natural History at the University of Minnesota. At the meeting a series of short talks are given which bring us up to date on interesting new developments in Minnesota ornithology. There is always a social hour which is hosted by the various local bird clubs in turn.

In May, usually the third weekend, we have a series of field trips and a dinner. The locality changes each year so that we go to see some good birding areas in other parts of the state. In September there is the week end jaunt to Duluth at the time of the hawk migration. There are also many warblers and interesting shore birds to be seen at Minnesota Point at this time. The past few years we have had our dinner meeting at the Endion

Methodist Church and those church ladies really can cook! They put on a buffet dinner that is out of this world. An interesting program follows the dinner.

In late January we all head for the North Shore and Grand Marais to see the winter land birds, unusual ducks and other water birds that can be seen on Lake Superior only during the winter. We get together for dinner and a program on this trip with the members of the Thunder Bay Field Naturalists' Club.

In addition to the interesting field trips and get-togethers we have an excellent magazine, **The Loon**, formerly called **The Flicker** until it was decided to name it after our state bird. This magazine is wonderfully informative about interesting and unusual experiences that other birders have had throughout the state and it also tells us of ongoing research programs in terms we amateurs can understand. **The Loon** is published four times a year, once in each of the four seasons. Recently a newsletter has been added which supplements **The Loon**. Those of us who belong to the M.O.U. feel that belonging to the state organization is an ideal extension of our local club membership. It widens our circle of acquaintances and friends as well as expanding our knowledge and service.

(This fine article was written by Isabel Goldberg, President, St. Paul Audubon Society and printed in the Cardinal, January 1965, Volume 13, Number 5).

Seasonal Report

The spring season did not appear in this issue because of the space used for the MOU 35th Anniversary material. We will resume printing the season in the December issue. With the printing of the Spring Season at that time we hope that the material will be more useful for the 1974 spring migration.

Editor



G. N. Rysgaard
First MOU President
1938-40

Minnesota Ornithologists' Union Past Presidents

- 1938-39-40 - G. N. Rysgaard, 1400 Capitol Ave., St. Paul and now located at Medical Arts Bldg., Northfield, Minnesota 55457.
- *1940-41 - George W. Frederich, Teachers College, St. Cloud, Minnesota.
- *1940 - T. S. Roberts, Honorary President, Director of Museum of Natural History, University of Minnesota
- 1941-42 - Milton D. Thompson, Public Library, Minneapolis, now director of State Museum, 15 Inverness Road, Springfield, Illinois 62704.
- 1942-45 - Mary I. Elwell, State Teachers College, Duluth now 1321 East First St., Duluth 55805.
- 1945-46 - Dr. W. J. Breckenridge, former Director of Minn. University Museum of Natural History. Home, 8840 W. River Road, Minneapolis 55430, Presently lecturer on National Audubon Screen Tours.
- *1946-47 - Mrs. George Lehrke, St. Cloud, who upon her death willed the M. O. U. the sum of \$5,000.
- 1947-48 - Kenneth D. Morrison, Minneapolis.
Editor of Conservation Volunteer Magazine.
Representative of Nat'l. Audubon to Minnesota.
Editor of National Audubon Magazine, New York.
Director Bok Singing Tower Sanctuary, Florida
- 1948-49 - Joel K. Bronoel, 1921 Hartley Road, Duluth 55803.
Also past secretary of the M. O. U.
- 1949-50 - Harvey L. Gunderson, Museum of Natural History, Univer-

- sity of Minnesota, Minneapolis, now University Museum, Lincoln, Nebraska.
- *1950-51 - Fr. Adelard Thuente, St. John's University, Collegeville, Minnesota.
 - 1951-52 - Whitney H. Eastman, Executive Offices, General Mills, Inc., Now 7000 Valley View Drive, Minneapolis 55435. Formerly on board of National Audubon Society.
 - *1952-53 - J. H. Reisinger, 849 Totum St., St. Paul 55104.
 - 1953-54 - Ole A. Finseth, 4901 Grand Ave., Duluth, 55807.
 - *1954-55 - Lewis Barrett, 2737 Ulysses St., N. E., Minneapolis.
 - *1955-56 - Robert Hanlon, Sr. High School, Mankato, Left in summer to teach in Bahama Islands. Later director of National Audubon Camp at Sarona, Wisconsin.
 - 1956 - Charles Flugum, Vice-president, Route #1 Albert Lea, Minnesota 56007, Succeeded Robert Hanlon in summer of 1956.
 - *1957 - Arnold B. Erickson, Minn. Dept. of Conservation, in St. Paul.
 - 1958 - William Luwe, 309 State St., Mankato, Minnesota 56001.
 - 1959 - Dana Struthers, Rt. #5, Box 548 Shady Wood Rd., Wayzata, Minnesota 55391.
 - 1960 - Douglas Campbell, 4917 Russell Ave. S., Minneapolis 55410.
 - 1961-62 - Rev. Forest V. Strnad, Stewartville, Minnesota 55976.
 - 1963-64-65 - Dr. Pershing B. Hoflund, University of Minnesota, Duluth 55803. Past Secretary and President of Wilson Ornithological Society.
 - 1966-67-68 - Fred Leshner, Minneapolis, now 509 Winona St., LaCrosse, Wisconsin 54601.
 - 1969-70 - Robert Turner, Box 66, Shafer, Minnesota 55074.
 - 1971-72 - Marvin Borell, 5808 Portland Avenue, Minneapolis 55417.
 - 1973 to present - Bill Bryson, Rte. #2, Alden, Minnesota 56009

* Deceased.

From 1938 to 1956 Presidents served from May to April and from 1957 to present, from January to December.

These are the early presidents of the Minnesota Bird Club, meeting at the Museum of Natural History at the University of Minnesota. They were forerunners of our Minnesota Ornithologists Union.

- 1929-30 - Gustav Swanson
- 1931-32 - Donald Fischer
- 1933-34 - Gustav Swanson
- 1935 - Alden Risser
- 1936 - Charles Evans
- 1937 - Ralph Woolsey

Minnesota Ornithologists Union Editors 1938 - 1973

- 1938-1939 - Charles Evans, M.D., Minneapolis
- *1939-1945 - Arnold B. Erickson, University of Minnesota, St. Paul
- *1945-1949 - Miss Severena C. Holmberg, Minneapolis
- 1950-1951 - Dr. Dwain W. Warner, University of Minnesota Museum of Natural History, Minneapolis
- 1959-1969 - Robert B. Janssen, Minneapolis
- 1970 - Robert Turner, Shafer, Minnesota
- 1971 to present - Robert B. Janssen, Hopkins, Minnesota

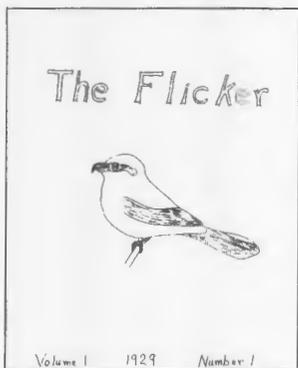
* Deceased

The Minnesota Ornithologists Union Publications

The official publication was "The Flicker" started with Volume 10 in 1938. Why? We learned that the Minnesota Bird Club, meeting at the University Museum of Natural History had been publishing "The Flicker" for nine years and they had instigated forming a union of clubs. So MOU adopted this magazine with plans to print it for the four seasons. Often-times two seasons were combined in

one magazine due to lack of material, lack of time of editors, or change of printers. The first printing was done at the St. Cloud reformatory. In 1944 four separate issues were printed for the first time. They were sent to all members and later exchanged with national and international libraries and schools.

Throughout its life "The Flicker" and "The Loon" have had seven different styles of covers for the publication. These are reproduced below.



The name of the magazine became "The Loon" in 1963 after our legislature made the Loon our legal state bird in 1961.

Newsletters started in 1963 were printed by the Tylers of Winona four times a year to bring news of meetings, news of unusual birds seen, action wanted, and about people.

In addition to "The Loon" the MOU has published a pamphlet on the Common Loon, our state bird. Field checklists are printed on a regular basis and are available to birdwatchers throughout the state by the MOU.

We also make available a brochure explaining the MOU to interested people. This brochure contains an order blank for use by people interested in joining the organization.

Affiliated Clubs of the M.O.U.

A list of the present affiliated clubs of the M.O.U. is printed inside the front cover of this issue. At one time or another, the following clubs have been affiliated with the M.O.U.

- T. S. Roberts Ornithology Club - St. Cloud
- St. Cloud Bird Club
- Lakeview Branch of Duluth Bird Club (to 1948)
- Rochester Audubon Society
- Mankato Bird Club
- Cloquet Bird Club (1942-1951)
- Range Naturalist Club - Hibbing
- H. J. Jager Audubon Society - Owatonna (to 1956)
- Upper Hiawatha Valley Audubon Society - Red Wing
- S. W. Minnesota Nature Club - Mountain Lake
- West Central Bird Club - Willmar

Membership

Dues were originally collected by the affiliated clubs and sent in to the M. O. U. treasurer. In 1951 the Policy Committee made a decision to have the treasurer send out yearly notices and have dues paid direct to the M.O.U.

In 1938 dues were \$.75 for adults

and \$.25 for students. It was not till 1950 that dues were raised to \$1.00 and a sustaining membership of \$5.00 established. In 1952 Honorary Memberships were established, the first being given to George Frederick of St. Cloud. At this same time, a Life Membership at \$50.00 was created. In 1957 Patron Membership at \$100.00 was established and dues were raised to \$2.00 per year. In 1959 dues were raised to \$3.00 and in 1966 to \$4.00. Beginning in 1974, dues will be \$5.00 per year.

Over a period of years other classifications of membership have been created including Family and Sustaining and the Life Membership was raised to \$100.00

Affiliated clubs have paid dues to the M.O.U. on a yearly basis depending on their membership. If 25 or less members, \$5.00, 25 to 100 members \$10.00 and over 100 members, \$100.00.

Membership in the M.O.U. has fluctuated over the years. In 1951 it stood at 551, in 1960 - 600, in 1966 - 848. At present it stands at approximately 850.

North Shore Winter Trip

Now for a little history on how this trip became an annual affair. In August 1941, I, Evelyn Jones, was on a trip with three other teachers along the North Shore of Lake Superior. At Silver Islet in Canada we visited with a lady in the next cabin to us, Mrs. Claude Philpot, and learned she was a member of the Thunder Bay Field Naturalist Club from Fort William. At Rosspport we hired a guide to take us out fishing and he, Claude Garton, was a president of the Thunder Bay Field Naturalist Club and from Port Arthur. I was president of the Duluth Bird Club at that time. So we decided when World War II was over we'd have joint meetings.

In 1947 the Duluth Bird Club was invited to come to the May 30-31 field trips of the Thunder Bay Club. Each couple took two people as their guests and furnished them a delicious picnic

lunch.

In 1948 the Duluth Bird Club reciprocated and invited the Thunder Bay Club to our field trip on Minnesota Point. In May 1949 ten Canadians came to the M.O.U. spring meeting in Duluth. Dr. A. E. Allin of Fort William and Director of the Federation of Ontario Naturalists gave a talk "Field Notes from Canada".

In our Duluth Bird Club minutes I found a letter from Bruce Hayward, a student at the Museum of Natural History. He invited the Duluth Bird Club to join the members of the Minnesota Bird Club in February 1949 for the trip to Grand Marais. It seems they had been there before and discovered birds that wintered in this area, as the Oldsquaw, Snowy and Great Gray Owl. About the same crowd met there in 1950.

Then in 1951 the MOU members and Canadian birders agreed to have a joint meeting at Pigeon River with a dinner catered from Fort William. This was continued through 1954.

By 1955 the Shore Line Motel was built in Grand Marais so we had room now for the Canadians to come there for dinner and the night, though some returned home. All were seated the first year, but we had to have two sittings the second year and we were

crowded for a meeting. On inquiry we found ladies of the Congregational Church could serve the dinner at the High School social room.

The Canadians would have charge of a program one year and the MOU the next. We are still meeting at Grand Marais but trying late January instead of February, hoping the lake won't be frozen over.

Canadians in September 1956 invited MOU people to come to Canada for field day. Some of the stopping places along the way were: John Bero home in Duluth where there were many birds at many feeders especially Purple Finches and Evening Grosbeaks; Two Harbors, Encampment Forest at the Penner's feeders; Half Way House at Beaver Bay for lunch; Star of the North cabins for chickadees to feed from your hand; Temperance River; Funk's place at Lutsen where he feeds the deer; Fenstad's feeders in Grand Marais; up the Gun Flint Trail to Walker's to see birds, and enjoy their hospitality with tea, coffee and sweets. In early days near Hovland we hiked into Dr. Abbot's place on a rocky point.

In 1969 the Canadians again invited MOU members to a May meeting in Thunder Bay and Sibley Park.

Annual Spring Field Trips

YEAR	DATE	LOCALITY	AREA SURVEYED
1938	5 - 21	St. Cloud	St. John's University Campus at Collegeville
1939	5 - 27	Duluth	Minnesota Point
1940	5 - 18	Minneapolis	Izaak Walton League Bass Ponds Long Meadow Gun Club
1941	5 - 17	St. Cloud	State Teachers College, Talahi Lodge Mississippi River Islands
1942	5 - 16	Minneapolis	Izaak Walton League Cabin on Mississippi River Near Anoka
1943)			
)			
1944)			
) No Meetings Because of Travel Restrictions During World War II			



M O U Spring Field Trip Duluth — 1945

1945	5 - 19	Duluth	Minnesota Point
1946	5 - 18	Minneapolis	Theodore Wirth Park
1947	5 - 17	St. Cloud	St. John's University Campus at Collegeville
1948	5 - 15	St. Paul	Minnesota River Bottoms Fort Snelling Grounds
1949	5 - 21	Duluth	Minnesota Point, Harbor Island Gull Island at Knife River
1950	5 - 13	Minneapolis	T. S. Roberts Bird Sanctuary Minnesota River Bottoms
1951	5 - 12	Collegeville	St. John's University Campus
1952	5 - 17	Frontenac	Methodist Camp Grounds Mississippi River Trails
1953	5 - 16	Frontenac	Methodist Camp Grounds
1954	5 - 22	Duluth	Minnesota Point, Fond Du Lac Schultz Lake, Lester Park Normanna Road
1955	5 - 28	Itasca State Park	Forestry and Biological Station
1956	5 - 19	Albert Lea	Big Island, Twin Lakes Farm of Charles Flugum
1957	6 - 13	Duluth	Minnesota Point, Ely - Buyck Area
1958	5 - 16	Whitewater State Park	Same
1959	5 - 30	Itasca State Park	Douglas Lodge

YEAR	DATE	LOCALITY	AREA SURVEYED
1960	5 - 21	Albert Lea	Helmer Myre State Park Buckeye Woods, Nelson's Mink Farm
1961	5 - 20	Whitewater State Park	Same
1962	5 - 19	Madison, Minnesota	Madison Lake
1963	5 - 18	Winona	Prairie Island Deer Park Knopp's Valley, Agaghmimg Park
1964	5 - 23	Morris	University of Minnesota, Morris Campus, Sloughs, Woods and Prairies
1965	5 - 22	Hibbing	Northern Forests, Open Pas- tures, Lake Shores, Echo Trail
1966	5 - 7	Frontenac	Methodist Camp Grounds
1967	5 - 20	Duluth	Jay Cooke State Park
1968	5 - 12	Caledonia	Beaver Creek Valley State Park
1969	5 - 17	Willmar	Monson Lake State Park Sibley State Park
1970	5 - 16	Albert Lea	Helmer Myre State Park
1971	5 - 15	Mountain Lake-Windom	Kilen Woods State Park, Heron Lake Indian Petroglyphs
1972	5 - 20	Bloomington	Hyland Park Nature Center Wood Lake Nature Center
1973	5 - 26	Fergus Falls	Frog Lake, Pelcan Lake

Hawk Migration Over Duluth

Learn to scan the skies during bird migration times especially in the fall. Learn the best places to stand. That's what Duluth bird watchers did. With the organization of the Duluth Bird Club in 1937 by Dr. Olga Lakela of the State Teachers College, club members and her students were fast becoming acquainted with areas to visit on their field trips. Interest and knowledge were increasing. So it was in 1946 we became aware of the hawk migration and the shooting of hawks and other birds as they sailed over the city.

In 1945 I began teaching science to pupils in Washington Junior High, and I naturally stressed wildlife in our area and protection of them and their habitat. Pupils were soon telling me of many dead hawks found on the hill-top by a valley a mile west of the Col-

lege of St. Scholastica. Dead and injured hawks were arriving in our classroom.

Bird Club members picked up cartons of dead birds (not all hawks). A picture of my pupils holding up the specimens was put in the Duluth newspaper. Thus an educational program was started for the public to inform them on what was going on in the city limits, about the new laws passed in 1945 protecting most hawks and owls, and the value of these birds in our environment.

Dr. W. J. Breckenridge, director of the Museum of Natural History at the University of Minnesota in Minneapolis heard of this slaughter and asked the Bird Club to send some cartons of dead birds for study of stomach contents, etc. and some of them were made into study skins. Some injured birds were kept until they could be

released on recovery.

Some of the men in our club were given police badges and deputized to take away guns from boys and men who were shooting protected birds, especially in the city limits. They also put up No Hunting signs.

In 1949 P. B. Hofslund, joined the staff of the University of Minnesota, Duluth. In 1951 he and a group of students started keeping records of the hawk flight passing over Duluth each fall. This keeping of daily records from late August to November, has continued to the present time and has added much valuable information on the movements of these magnificent birds.

The third week in September has been the traditional weekend chosen by the M. O. U. for the annual Hawk Count. This was first started in 1951

and has grown to be the largest event of the M. O. U. year. At the last meeting in September, 1973, over 500 people attended the evening banquet and program. People come to Duluth from all over the country to observe this spectacle.

Due to the efforts of the Duluth Audubon Society, Hawk Ridge Nature Preserve was established to insure that the hawks and other migrants will have a safe passage over Duluth. The Nature Preserve provides people with an excellent location for viewing the hawk migration. Nature trails have been established and more land is being acquired to increase the size of the preserve. The M. O. U. was instrumental in setting up Hawk Ridge through their donation of \$5,000 made available from the will of Mrs. George Lehrke, a past president of the M.O.U.



Hawk Count at Duluth 1952

Winter Paper Session

The first winter paper session was held December 4, 1954 at the University of Minnesota Museum of Natural History, later called the James Ford Bell Museum, in Minneapolis. People at the May Spring Field Trips decided they just didn't want to give up any outdoor pleasure to come inside for talks and reports at that time of year. So the paper session was started and continues at the same location.

Banquets are held at the Student Union Building with a speaker and movies afterwards. At this meeting the T. S. Roberts Memorial Award is presented to some person or persons for their outstanding contributions to Minnesota Ornithology.

Winners of the T. S. Roberts Memorial Award are as follows:

- 1963 - Mary Lupient
- 1964 - Dr. W. J. Breckenridge
- 1965 - Ernie D. Swedenberg
- 1966 - A. C. Rosenwinkel
- 1968 - Brother Theodore Voelker F.S.C.
- 1969 - Dr. P. B. Hofslund
- 1970 - Jane C. Olyphant
- 1971 - Evelyn Putnam
- 1972 - Karen & Whitney Eastman

Other Club Meetings

On October 10, 11 and 12, 1950, many of our members had the opportunity to attend the American Ornithologists Union in Minneapolis at their 68th meeting held at the Minnesota Museum of Natural History, University of Minnesota.

In June 1966, the hosts for the

American Ornithologists Union Meeting in Duluth were the Duluth Bird Club, the Minnesota Ornithologist Union, and the University of Minnesota, Duluth Branch where the meetings and banquet were held.

On June 13 to 16, 1957 the 38th Annual Meeting of the Wilson Ornithological Society on invitation of the same three groups as mentioned above, met at the Science Building of the University in Duluth.

The National Audubon Society has not met in Minnesota but has influenced the lives and services of many of our bird club members. Members have attended national meetings held around the United States. Affiliated MOU clubs have also become chapters of Audubon and have helped raise funds for the Audubon Camp stationed near Saronia, Wisconsin which was opened in 1955 for personal enjoyment and training of leaders. Many attend the North Central Audubon Council with Ed Brigham as the director of our region. He gives help with our ecology problems and nature centers.

Another regional organization many of our members belong to is the Inland Bird Banding Association. On May 17, 1952, they had a meeting in Frontenac on the Mississippi River and invited MOU members to attend. On November 18-20, 1966, they had a joint meeting with MOU at the Museum of Natural History in Minneapolis. This year, 1973, on September 14-16 they had a joint meeting with the Minnesota Ornithologists Union at their fall meeting in Duluth. Hosts were the Duluth Audubon Society and the College of St. Scholastica where lodgings, indoor meetings and the banquet was held for 350.

THE MONK PARAKEET

by James A. Baumhofer

Minnesota birders should be on the lookout for a newly introduced bird species that may soon be invading the state. The new species is the Monk Parakeet or Parrot, originally from South America, which has recently been reported in the eastern half of the country. With its spread comes widespread concern from conservationists and others. According to Gardiner Bump, former head of the New York Bureau of Game, the Monk Parakeet may become another Starling, competing with native birds for food and nesting sites, as well as destroying valuable crops. Reports from the government of Argentina alone indicate that it sometimes destroys as much as 45% of that country's crops of corn, sunflower seed, millet, and fruits. They are very prolific breeders. One pair of these birds in New York is known to have raised 40 young in a single season. Thus, it has a much higher potential for being a nuisance than do the Starling or House Sparrow. Also, they have been described by a New York resident who had fed birds for years as being "two to three times more aggressive toward other birds than the Starling."

It was at first suggested that the bird would not become a problem because it would not be able to tolerate the severe climate extremes of the northern portion of the United States. It was soon found, however, that, with the aid of suburban bird feeders, the Monk Parakeet could adjust quite easily to the climates of upstate New York and Milwaukee, both of which are quite similar to Minnesota.

In its native range, it easily adapts to the moderately severe winters of southern Argentina. Following its South American pattern, the Monk Parakeet at first nested during the northern winter. Most of the winter-laid eggs were either infertile or winter killed. Perhaps responding to changes in temperature, the New York

birds began correlating their nesting with the northern summer during 1971. This is when the first nestlings were successfully hatched. So far, at least, there seems to be little indication of successful reproduction outside of New York city, and some portions of New Jersey and Connecticut. This may soon change, however, as the species is continually expanding its range and becoming more abundant.

Many ornithological and birding organizations throughout the country are now recommending control of the bird. Among groups advocating the eradication of this potential menace are the New York Federation of Bird Clubs, and the state organization of bird clubs in Connecticut. In Virginia there is already an active program of control of these Parakeets in the wild, and the New York State Department of Environmental Conservation has also taken a stand against it. According to Richard L. Plunkett, Assistant to the Vice President for Biology of the National Audubon Society, it may already be too late to control the Monk Parakeet in the wild. However, because the species often congregates in large numbers at feeders, general eradication may still be feasible. National Audubon is one of the few organizations that has continued to refuse to take stand for or against this species.

As beautiful as they may be, I feel strongly that the MOU and the Minnesota Department of Natural Resources should take official stands in favor of the general control of the Monk Parakeet as soon as it begins to invade the state. The people, such as those in New York who favor the bird, who enjoy having Monk Parakeets at their feeders, and appreciate their beauty will, I believe, change their minds when they watch native birds being bullied from their feeders and crops being destroyed. Isn't it enough that we already have the Starlings, Com-

mon Grackles, and House Sparrows to contend with?

At any rate, if the Monk Parakeet is not already present in the state by the time this article is printed, it is almost certain that it is only a matter of time until it will be. In addition to the breeding populations in New York and New Jersey, it has also spread to almost all of the eastern states, as well as to Houston, Omaha, Phoenix, and even to Grand Forks.

So, if you sight a chattering, squawking flock of pigeon-sized, grayish-green parakeets with yellow breasts and abdomens, you are not in South America, but right here in Minnesota, watching your state being gradually overrun by a new invader. The Monk Parakeet should not be confused with the common parakeet or Budgeriger, which is occasionally noted as an escape in this area, but cannot survive our winters. The difference in size as well as coloration should serve to distinguish the two. The species can also be easily detected by its loud, raucous screeches, which

have caused many of the owners of these birds as pets to release them, thus adding greatly to the problem.

Any MOU member who sights the Monk Parakeet in the wild in the state should report them to the editor of the seasonal reports, Janet Green, and also to the Bureau of Sport Fisheries and Wildlife, Federal Building, Fort Snelling, St. Paul, Minnesota 55111. You are also urged to make your feelings regarding this introduced species known to either myself, Mrs. Green, or the editor of **The Loon**, Robert Jansen. 1884 Berkley Ave., St. Paul, Minnesota 55105.

Editors Note: During September 1973 a report of six Monk Parakeets was received from Two Harbors, Lake County. The possibility of these being local released birds seems remote because of the number seen, but one would have to ask where did they come from? For identification of the Monk Parakeet see the September 1973 issue of "The Wilson Bulletin" which contains a color painting of the species.

notes of interest

THE LOUISIANA WATERTHRUSH STILL NESTS IN CHISAGO COUNTY—

Lawrence Creek rises, as they say, in northeast Chisago County, near the town of Shafer. Then a couple of miles to the southeast it begins to fall. Mostly the creek is dry in the upper reaches except after rains and during the spring run-off. Highway 8 crosses the Lawrence Creek ravine just east of Shafer and hurries on north to Taylors Falls. The creek finds its way south toward Franconia, dropping lower and lower through the forest which lines the gorge walls and bottom. The forest is of hardwoods - - hard maple, yellow birch, elm, and ash - - and a good portion is of pines, white pine and red. Gushing springs in the bottom of the gorge make a clear and lasting, tiny stream. Here in the narrow confines, 150 feet below the plateau, moisture hangs in the air on a spring morning and drenches luxuriant ferns and Equisetum. This is the perfect setting for the Louisiana Waterthrush. Five years ago I located six singing waterthrushes along the 3/4 mile of stream above Franconia and, since no nests of these birds had been recorded in the intervening years in Minnesota, I went back on June 9, 1973. Reaching the old cart-bridge about 7:30 a.m. (CDST) I immediately heard the "chink" calls of two Louisiana Waterthrushes. A quiet fisherman had disturbed them. Fifty yards downstream I found the two birds carrying food in their beaks.

So, sending my wife ahead, I stood still against a tree. Hardly more than a minute passed before one of the birds flitted to a cavity in the stony, vertical wall three feet above a swirling whirlpool. Only shoe-top deep most of the way, the creek was just over a foot deep below the nest. A young cowbird stood on the edge of the nest, nearly filling the entrance of the cavity. Behind him cowered a second young cowbird. A little disheartened I removed them both, but out fluttered a smaller bird straight down into the water. Already, though probably a week old, this little one had a bright white line over its eye. Also in the nest was an addled waterthrush egg. Somewhat elated over finding my second waterthrush nest (and my first since 1948) I searched upstream and saw one bird. On a return visit, July 4, I heard a waterthrush singing briefly but saw no birds. The last report of Louisiana Waterthrush nesting in Minnesota was in 1965, an adult feeding a young cowbird in the Whitewater State Park. Among other birds found in the Lawrence Creek Valley on June 9 were Black-throated Green, Chestnut-sided, and Mourning Warblers, plus a Winter Wren. **William H. Langley, 532 W. Broadway, Forest Lake, Minnesota 55025.**

EVIDENCE OF SOLITARY SANDPIPER BREEDING — On July 11, 1973, I was driving along Aitkin County Road #10 which runs along the Mississippi River from Jacobson to Palisade. In the SE¼ of Section 15 of Verdon Township, I stopped to look for a Song Sparrow nest after a sparrow had flown across the road with a bill full of food. When I got out of my car, I heard what I first thought was a Spotted Sandpiper scolding. Flying above me and above the river next to the road was a pair of Solitary Sandpipers. I got back into my car from where I could see the river with my spotting scope. The pair landed on the opposite shore, and a half-grown downy young sandpiper came out of some weeds near the adults and followed them along the shore. I spent some time watching these three birds because I thought it would be a new record for Aitkin County and for this far south. I did not at the time realize this was the only known breeding evidence of the Solitary Sandpiper in Minnesota. This area is mainly bog, which is the nesting habitat of the Solitary Sandpiper. Next summer I will be looking for that first Minnesota nest and I hope that any birders in northeastern Minnesota will keep an eye open for this sandpiper which uses old bird nests in trees. **Terry Savoloja, Box 244, Deerwood, Minn. 56444.**

EUROPEAN WIDGEON IN AITKIN COUNTY — At about 7:00 A.M., on June 5, 1973, I stopped near a bay at Big Sandy Lake in Aitkin County to check some ducks. There were Lesser Scaups, one American Widgeon and what I first thought was a Redhead. I found that it was not a Redhead, but my first European Widgeon. The bird was a male and spent most of the time with a male American Widgeon. It had gray sides and a red head with a buffy cream crown. I watched the bird for about a half hour with a 15-60 power "zoom" spotting scope and it was seen and photographed later in the day by Lloyd Paynter of Aitkin, Minn. That evening, Steve and Joe Blanich and I went back to see the bird and while we were watching, it got up and flew away leaving the American Widgeon and the Lesser Scaups. I checked the bay for the next couple of days but never saw it again. **Terry Savaloja, Box 244, Deerwood, Minn. 56444.**

NESTING PINE SISKINS — We have not been without Pine Siskins at our feeders for several years now. Their number greatly increases toward spring for a period of about a month and then decreases again. This winter (1972-73) about 30 of these birds remained with us constantly. In March I noticed some

of these birds courting and mating. I thought this was very early but read in one of the Bent series that they are very early nesters. In April we noticed young siskins appearing at our feeders, with the parents feeding them. On Easter Sunday, in particular, we noticed a group of them in a bush. One was especially small, with hardly any tail. He looked too young to be off the nest. The next day I looked for him again in the yard but was sorry to finally find him dead.

At times when I was cleaning the yard, I thought I noticed small birds darting into by Bluebird nesting boxes. However, I was always distracted by something else and never followed up. When we went to clean the nesting boxes out for the arrival of the Tree Swallows in May, we found that several contained small, very neat, nests of fine grasses, lined with soft materials. One such nest contained four dead baby birds, which I am sure were siskins. Upon looking up the description of a Pine Siskin's nest in a nesting guide, we were convinced that we had Pine Siskins nest in our boxes. If this same group remains throughout the summer and until next spring, I will watch them more carefully next spring to see if they use these nesting boxes again, and I will be sure to record dates, etc. I might add that these baby siskins hopped on my hand readily whenever I came near them with sunflower hearts. My husband took several colored slides of such events. **Mrs. Sheldon F. Nelson, 4213 Grimes Avenue North, Robbinsdale, Minnesota 55422.**

NESTING AVOCET IN BIG STONE COUNTY — A grea variety of wildlife exists in the prairie marsh ecosystem of western Minnesota. Among the most unusual species found is the American Avocet. Throughout recent years, avocets have occasionally been reported during the summer period. On June 28, 1973, a brood of two downy young and an adult were observed and photo-



graphed (see attached photo) on a federal wetland four miles west of Graceville, Minnesota. The brood and adult were again observed on several return visits to the area.

Other unusual shorebirds observed include a Hudsonian Godwit seen on July 8 on a prairie marsh five miles north of Ortonville, and a brood of two downy Marbled Godwits with adult seen one mile south of the new Big Stone National Wildlife Refuge. **Donald J. Peterson, Assistant Refuge Manager, Big Stone National Wildlife Refuge, 25 NW 2nd Street, Ortonville, Minnesota 56278.**

183 SPECIES SEEN ON 1973 BIG DAY — In the Spring 1973 issue of "The Loon" appeared a summary of the rules, strategy and totals of our first three Minnesota Big Days. On May 19, 1973 Paul Egeland, Henry Kyllingstad, Terry Savaloja and I took a fourth count and totalled no less than 183 species. This is the largest Big Day count ever on record for inland U. S. by a wide margin. Only favored spots along the Atlantic coast, the Texas Gulf coast and southern California have ever achieved higher totals. The reason for our success is not entirely clear since we did not have "ideal" weather conditions (that is, a cold front on and before count day to concentrate migrants). But we were helped to a certain extent by the full moon and light winds that made listening conditions favorable, especially at night. For the first time we started at midnight which gave us more time, and for the first time we had four observers instead of two or three. Also we learn our route better every year, leaving out unproductive spots and adding better ones (this year for the first time we birded at night south of St. Cloud along the Mississippi River and added three or four new species).

I will not give a complete run-down of our day, but some of the highlights are interesting. We had about 60 species by sunrise, we left St. John's at 11 a.m. with 122 (our previous high at the point had been 110), and we broke our old record of 166 by 5:30 p.m. with still over four hours of birding time left. Two of us had individual lists of 180, while the other two had 179; this worked out to 174 species being seen by all four observers. We drove 379 miles, walked another six miles, and were out for 21 hours and 45 minutes. Some of the better birds counted were: Little Blue Heron at L. Johanna, 26 species of shorebirds including three—Knots, an out-of-range Blue-gray Gnatcatcher, a late Golden-crowned Kinglet, 27 species of vireos and warblers, and LeConte's Sparrows at two locations. Our "misses" included: Ring-necked Duck, Gray Partridge, Greater Yellowlegs (fourth year in a row), Eastern Wood Pewee, Loggerhead Shrike (fourth year in a row), Golden-winged, Cape May, Pine and Connecticut Warblers, Dickcissel, and Rufous-sided Towhee (fourth year in a row). I am only guessing but I would say that the worst we could ever do on this route would be 150, while the best under perfect weather conditions would be 190-195. Our four-year cumulative list now stands at 209 species since we added 11 new species this year; 29 species have occurred only once, 27 have been seen twice, 40 have been seen three times, and 113 have been recorded all 4 years.

Following is a summary by families of our 1973 Big Day and of our 4-year cumulative list. I would again like to invite interested birders to start planning now for May 1974, either in joining us or trying a new itinerary. I would be glad to offer advice, receive suggestions, or hear of your plans or results. The Big Day can and should be as much a part of your birding calendar as the Christmas Census.

	1973	4-yr. cum.
Loons, grebes, pelican, cormorant	7	8
Hérons, etc.	7	7
Swan, geese, ducks	16	22
Hawks, etc	6	8
Gallinaceous birds, rails, coot	5	5
Shorebirds	26	30
Gulls, terns	6	8
Doves, cuckoos	4	4
Owls	3	4
Goatsuckers, swift, hummingbird, kingfisher	5	5
Woodpeckers	7	7
Flycatchers	6	8
Horned Lark, swallows	7	7
Jay, crow, chickadee, nuthatches	4	5
Wrens	3	4
Mimic thrushes, thrushes	8	8
Kinglets, waxwing, Starling	5	5
Vireos, warblers	27	29
House Sparrow, Bobolink, meadowlarks, blackbirds, orioles	11	11
Tanager, finches	7	9
Sparrows	13	15
TOTAL	183	209

Kim R. Eckert, 3301 W. Brooke Lane, Sioux Falls, South Dakota 57106

BREWSTER'S WARBLER BANDED IN WASHINGTON COUNTY — As a bird bander, I serve on the staff of the Lee and Rose Warner Nature Center, a division of the Science Museum of Minnesota. During the summer session conducted by the Nature Center, I work at Camp Wilder whose property is adjacent to the Nature Center. Specifically, I trap and band birds at the various camp sites of Camp Wilder and with a bird in my hand, I demonstrate the banding technique to the hundreds of children who attend Camp Wilder each summer. While talking to the youngsters as I'm banding a bird, it is my ultimate hope and goal that I can enrich their experience of the wildlife around them, and to help them become a little bit more aware of the value and the role that birds play in our environment. On July 13, 1973, the children at Camp Wilder's Square Lake campground and I had quite a surprise. About 200 feet west of the west shoreline of Square Lake, I trapped a bird that I had never seen before. A mist net had been set up at the edge of an abandoned field bordered on the south by a narrow woodland consisting of young aspen, birch, a few mature red and white oak and a large stand of dwarf sumac. At 11 a.m. just prior to speaking to the children about the birds I had captured that morning, I checked the net and came face to face with my first Brewster's Warbler. The upperparts strongly resembled the Golden-winged Warbler's plumage (bluish-grey crown, back, and wings, with a well defined bright yellow crown patch and broad yellow wing patch.) The underparts were white with no trace of a yellow wash on the breast. Through the eye was a well defined dark stripe. The bird was held just long enough after

banding to "run down" Donald Beimborn, Naturalist, for the Nature Center, who kindly took photographs. Don said that this particular Brewster's Warbler "had to be the most classic example of this hybrid that he had ever seen". Despite the Brewster's Warbler being in apparent breeding condition, Don Beimborn stated that this hybrid according to the literature, is not accepted by either the Blue-winged or Golden-winged Warblers as a mate. **Jane C. Olyphant, 8609 Hidden Bay Trail North, St. Paul, Minnesota 55109.**

WOODCOCK DISPLAY — On May 7, 8, and 9, 1973, myself and two other boys in the Ornithology class at Princeton Senior High School, made evening observations of the American Woodcock performing its courtship display. We had found earlier an open area three miles NW of Princeton that a Woodcock used for his "peenting ground."

On May 7, the Woodcock began "peenting" at its feeding spot at 8:37 p.m., before flying to its display ground about 50 yards away. After recording the birds 561 "peents" and its 12 display flights, (each one minute long) all which lasted 61 minutes, we left the area with a recording of the Woodcock's "peents" on a tape recorder. The next evening the Woodcock began its "peenting" at 8:45 and ended its display at 9:33. After the birds seven display flights and its 505 "peents," the Woodcock discontinued its display. After waiting 15 minutes to make sure that he was finished, we tried an experiment . . . The recording of the Woodcocks "peents" were played back to the bird in the middle of the display ground, and after the first "peent" came from the recorder, the Woodcock replied immediately with a "peent" of his own. For 25 minutes we continued our experiment as the Woodcock walked to within four feet of the tape recorder and me. Since the bird was so close, I took my camera and flash cube and took a picture of him which sent him flying into the air. The bird landed 25 feet away and began walking toward the tape recorder once again. The bird despite the previous flash of light, again came close enough for a fine portrait. We left the curious Woodcock at about 10:20 that night. On May 9, the Woodcock began its display at 8:55 p.m. and ended at 9:39 p.m. The Woodcock "peented" 542 times. Again the experiment was a success as the Woodcock came extremely close to the recorder and me. Once the bird took off and landed behind me and walked past the feet of my motionless partner on its way to the recorder. One thing that we discovered from our data is that the Woodcock "peents" the most number of times when the bird first reaches the display ground or before its first display flight. **Mark W. Enger, 206 13th Ave., Princeton, Minnesota.**

CATTLE EGRETS NESTING AT PELICAN LAKE — On August 4, 1973, I was photographing at the rookery on Bird Island in Lake Pelican near Ashby, Minnesota, when I noticed an adult Cattle Egret fly from a Box Elder tree. I investigated and found a nest with three fledglings in the nest. The nest was approximately 15 feet above the ground. As I observed the fledglings, they became disturbed and moved out of the nest onto the limbs nearby and I was able to photograph them. I was unable to locate pictures or descriptions of fledgling Cattle Egret to verify the identification. However, I took the slides to Duluth to the Hawk Count where Bob Janssen tentatively identified the fledglings as Cattle Egret. Bob took a slide and was able to get a positive identification. While in the Pelican Lake area on two different occasions we observed small groups of Cattle Egrets on the ground among cattle and observed them eating insects off the cattle. The largest group included 10 adult birds. **W. H. Wyatt, 205 Oak Manor Court, Fargo, North Dakota.**

BALD EAGLE - HAWK INTERACTION — On May 20, 1973, I observed a Bald Eagle-Marsh Hawk interaction at the Crex Meadows Wildlife Area, Grantsburg, Wisconsin, near the southwest end of the refuge. It was nearly dark as I observed the Marsh Hawk gliding low over the marsh, as I was watching the hawk, an adult Bald Eagle swooped down on the hawk from a position above and behind the hawk. Although no actual physical contact was apparent in the air, the hawk took immediate evasive action by rapidly twisting and turning in flight. The eagle's greater speed, as a result of its short dive at the hawk, carried it in front of the hawk. As this occurred, the hawk dropped into the marsh grass, immediately the eagle dropped into the grass also and I could see the upraised wings of both birds as the eagle pursued the hawk on the ground. After a pursuit of only seconds, the eagle took flight and immediately dropped into the marsh grass where it remained, out of sight, for 15-20 seconds. The eagle then took flight again and circled the area six to eight times in widening circles before flying off in a westerly direction. The Marsh Hawk was not observed again either on the ground or in the air. **Ralph Mogenweck, Department of Entomology, Fisheries and Wildlife, University of Minnesota, St. Paul, Minnesota 55101.**

BALD EAGLE - HAWK INTERACTION — On May 3, 1972, while flying with pilot Mark Shough on an aerial check of nesting Bald Eagles on the Bena District of the Chippewa National Forest, an interaction between a female Goshawk and an immature (2nd year or older) Bald Eagle was observed. The aircraft was flying northwest along the southwest shore of Lake Winnibigoshish in Cass County, Minnesota, approximately 100 yards offshore in T 145 N., R 28 W. Northwest of Richards Townsite an immature Bald Eagle was sighted flying approximately 0.1 mile inland and preparing to land in a tall pine in a plantation in the south-central portion of Section 18. At that moment the hawk stooped on the eagle, striking it and then pursuing it. This chase and attack continued northwesterly coursing through sections 18, 12, 11, 2 and 3 in that order. Straight-line pursuit distance was approximately 3.5 miles with the hawk the persistent aggressor. The Mississippi River appeared to be the physical feature associated with cessation the hawk's pursuit. An immature eagle had been regularly seen previously that season in the area of Section 18 and was observed there repeatedly later that summer. However, the Goshawk was not observed again in that area. **L. D. Frenzel and Joel Kussman, Department of Entomology, Fisheries and Wildlife, University of Minnesota, St. Paul, Minnesota 55101.**

BOOK REVIEW

Twilight Over the Wilderness is written with considerable sentiment for the wilderness, but is flawed by the author's loathing of wolves. According to Mr. Wallo, when a fox or coyote kills a gopher, it is done quickly so the creature does not suffer. But when a pack of hungry wolves wants moose meat, the moose will be viciously maimed before dead. Okay, let us assume for the argument that this is the case. Therefore, according to the author, wolves are not to be allowed to hunt in packs, but their numbers reduced so far that they must kill only what one or two of them can kill, say a mouse or rabbit. Okay again, let us say. But then what if that one wolf or two can't find a mouse or rabbit? Does he starve? Yes, it seems to me, unless he can find

alternate prey, such as a weak or sick moose—or a cow—and we're back where we started. And that is that the author can't stand wolves, and doesn't want them to be wolves, and hunt in packs, when it is necessary for their survival.

It would not be pleasant to watch an animal torn apart by wolves. (Though one recalls all those Christians supposedly fed to the lions by the civilized Romans. It seems some humans enjoy inflicting torment on their "enemies," and that so called normal human attitudes toward others' suffering is conditioned a great deal by social, political and economic conditions.) However, I'm not sure that every kill by a fox or coyote is quick either, as the author implies. When you try to make over the animal world after a pattern based on supposedly human values, you get into serious difficulty. You set up models designed to support your biases, like quick killing fox, to throw into bad light those creatures you dislike—wolves in the author's case. So, what about hyenas, turtles, and crayfish? Recent studies have shown hyenas to hunt large prey in packs, and maim before killing. And the turtles and crayfish that ate the small northern pike my son carelessly left in the lake on a stringer overnight certainly was not killed, then eaten, but if I must think about it, cruelly disemboweled.

Isle Royale is the focus of the author's dislike for wolves. I hiked Isle Royale for four days last summer. I saw plenty of moose. If the wolves are killing off calves, how is it there is such a large moose population on Isle Royale? The present policy of maintaining a "balance" between moose and wolves on Isle Royale may not be perfect or pleasant, but I'll stick with it.

The book has some valid criticisms of American ignorance of and indifference to wildlife, but I feel the author has painted the situation blacker than it is in order to provoke action. Action, by the way, that is being taken.

The paintings by Roger Preuss are bright and crisp, but his birds lack precision in body bulk, contour, and feather detail.

Twilight Over the Wilderness. Olav Wallo, T. S. Denison & Company, Minneapolis. 1971. 27 full color paintings by Roger Preuss. \$7.95. hard.

REPORT COLOR MARKED EAGLES

"Assistance from field personnel of wildlife agencies and the general public is requested in reporting color-marked immature Bald Eagles banded and marked by Dan Frenzel, Joel Kussman, and Steve Fagerlie this past summer on the Bena District of Minnesota's Chippewa National Forest. Birds have been marked on one wing with orange, blue or white colors, or

combinations of these colors. Please report any sightings by calling Frenzel's office (612) 373-1715 or at his home (612) 644-0348, or contacting the local or nearest wildlife or conservation officer. Thank you for assisting in this request." Of 23 previously marked eagles, reports or returns have been made on six - a very good return. Thirteen eagles have been color-marked this past field season.



Common Loon on nest — photo by Dr. Paul W. Harrison and Paul Wilson. 2nd place winner in Loon cover photo contest.

PURPOSE OF THE MOU

The Minnesota Ornithologists Union is an organization of both professionals and amateurs interested in birds. We foster the study of birds, we aim to create and increase public interest in birds and promote the preservation of birdlife and its natural habitat.

We carry out these aims through the publishing of a magazine, **The Loon**; sponsoring and encouraging the preservation of natural areas; conducting field trips; and holding seminars where research reports, unusual observations and conservation discussions are presented. We are supported by dues from individual members and affiliated clubs and by special gifts. The MOU officers wish to point out to those interested in bird conservation that any or all phases of the MOU program could be expanded significantly with gifts, memorials or bequests willed to the organization.



SUGGESTIONS TO AUTHORS

The editors of **The Loon** need articles, shorter "Notes of Interest" and black/white photos. Photos should be preferably 5x7 in size. Manuscripts should be typewritten, double-spaced and on one side of the sheet with generous margins. Notes of interest should be generally less than two typewritten pages double-spaced. If reprints are desired the author should so specify indicating number

required. A price quotation on reprints will be sent upon receipt of information.

Club information and announcements of general interest should be sent to the Newsletter editor. See inside front cover. Bird-sighting reports for "The Season" should be sent promptly at the end of February, May, August and November to Mrs. Janet Green. See inside front cover.



TABLE OF CONTENTS

BOHEMIAN WAXWING

Color Photo by Steve Blanich Front Cover

THE PRESIDENT WRITES 71

THE LOON COVER PHOTO CONTEST 72

EDITORIALS 72

THE M.O.U. 35th ANNIVERSARY STORY

Compiled by Evelyn Putnam and Mary Elwell

HERON LAKE THROUGH THE YEARS

Reprint of T. S. Roberts article 74

EARLY RAMBLES OF A BIRD LOVER IN MINNESOTA

Reprint of T. S. Roberts article 77

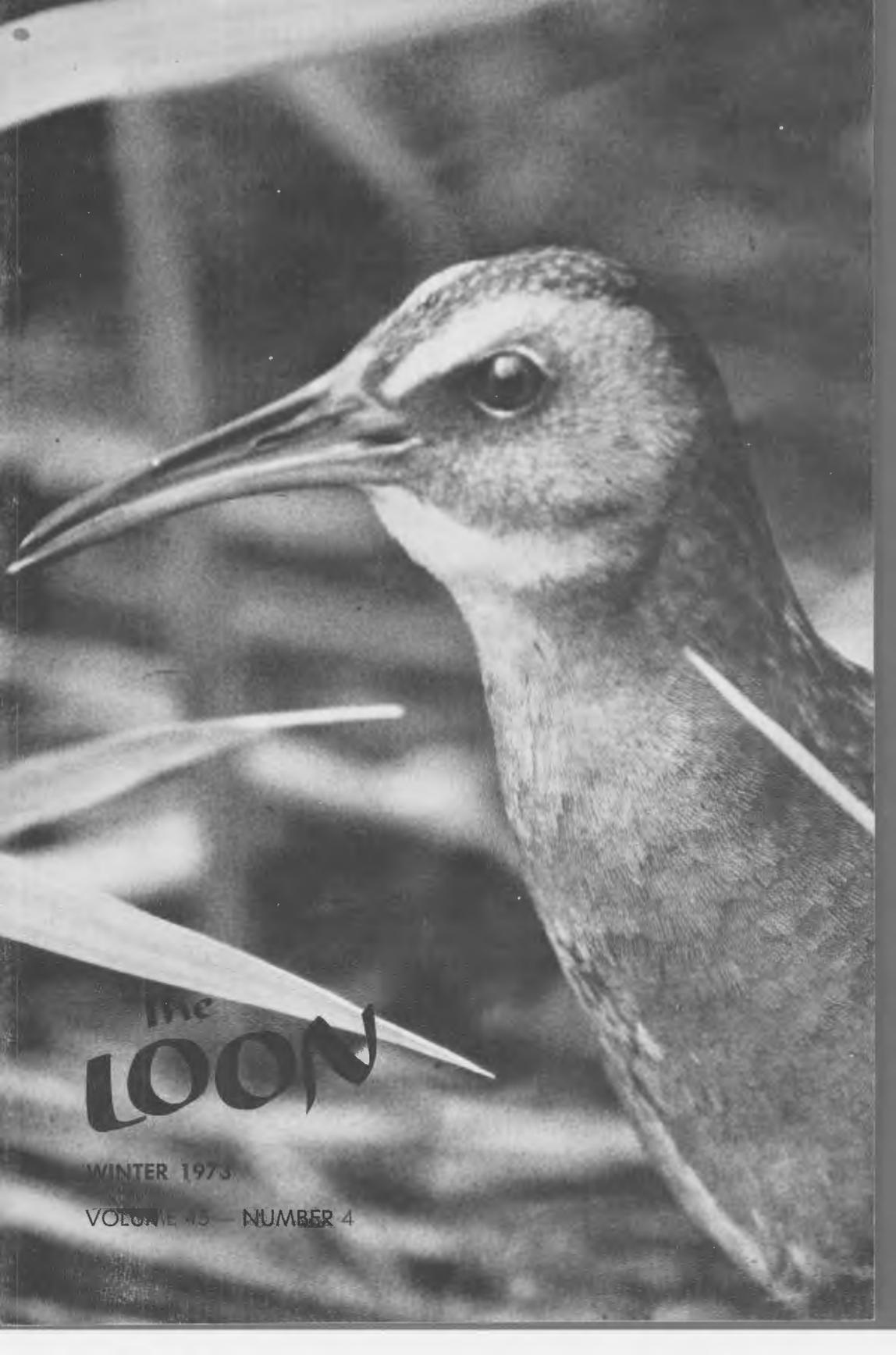
- A Brief History**
- Presidents**
- Editors**
- Publications**
- Affiliated Clubs**
- Membership**
- North Shore Winter Trip**
- Spring Field Trip**
- Hawk Migration Over Duluth**
- Winter Paper Session**
- Other Club Meetings**

THE MONK PARAKEET

by James A. Baumhofer 94

NOTES OF INTEREST 95

BOOK REVIEW 101



The
LOON

WINTER 1973

VOLUME 45 — NUMBER 4

The LOON

Minnesota's magazine of birds and nature, is published four times each year by the **Minnesota Ornithologists' Union**, the statewide bird club. Permanent address: J. F. Bell Museum of Natural History, University of Minnesota, Minneapolis 55455. Anyone interested in birds and nature may join. Any organization with similar aims may affiliate. All MOU members receive our two quarterly publications: **The Loon** and the **MOU Newsletter**.

MEMBERSHIPS AND SUBSCRIPTIONS: Karol Gresser, 8850 Goodrich Ave., Bloomington, Minnesota 55437. To join the MOU and receive both MOU publications, send Mrs. Gresser \$4 for a regular yearly subscription. Or other classes of membership that you may choose are: Family \$5 yearly; Sustaining \$25 yearly. Life \$100. Also available from Mrs. Gresser: back issues of **The Loon** (\$1 each ppd.) and MOU checklists of Minnesota birds (20 for \$1 ppd.). Gifts, bequests, and contributions to the MOU Endowment Fund should also be sent to Mrs. Gresser.

EDITOR OF THE LOON: Robert B. Janssen, 14321 Prince Place, Hopkins, Mn. 55343. (phone 938-7464). The editor solicits articles, short notes, and black/white illustrations about birds and nature. See back cover for details. Associate Editors, Kim R. Eckert and Paul Egeland.

"The Season" section of **The Loon** publishes reports of bird sightings throughout Minnesota. We particularly desire reports from parts of the state that have been neglected or covered lightly in past reports. To become a contributor to "The Season," request the report forms from the **EDITOR OF "THE SEASON," Mrs. Janet Green, 9773 North Shore Drive, Duluth, Mn. 55804.** (area 218, phone 525-5654).

EDITOR OF THE MOU NEWSLETTER: Mrs. Marilyn Mauritz, Route 4, Box 886, Excelsior, Minn. 55331. Publishes announcements and reports about activities of the MOU and its affiliated clubs. (Club officers should keep both MOU editors informed.)

MOU OFFICERS

PRESIDENT: Bill Bryson, Route 2, Alden, Minn. 56009

FIRST VICE PRESIDENT: Jack Mauritz, Route 4, Box 886, Excelsior, Minn. 55331

SECOND VICE PRESIDENT: Pepper Fuller, 14505 McGinty Road, Wayzata, Minn. 55391.

SECRETARY: Jo Blanich, Box 96, Crosby, Minn.

TREASURER: Karol Gresser, 8850 Goodrich Ave., Bloomington, Minn. 55437 (phone 612-831-5714).

MOU COMMITTEE CHAIRMEN

RESEARCH AND RECORDS: Mrs. Janet Green, 9773 North Shore Drive, Duluth, 55804.

FIELD TRIPS: Roy Zook, 5520 Warwick Place, Minneapolis 55436. **MEMBERSHIPS:** Mrs. Josephine Blanich, 101 Birch St., Crosby 56441. **EDUCATION:** Mike Link, Sandstone 55072. **NOMINATIONS:** Mrs. George Stanley, 213 Janalyn Circle, Minneapolis 55416. **UNIVERSITY COORDINATION:** Dr. Harrison Tordoff, Bell Museum of Natural History, University of Minnesota, Minneapolis 55455. **NATIONAL AUDUBON COORDINATION:** Edw. Brigham, Route 4, Red Wing 55066. **PUBLICITY:** Kathy Heidel, Route 5, Box 108, Excelsior 55331. **CONSERVATION AND RESOLUTIONS:** Dr. Bruce Keyworth, 1926 South Lane, St. Paul. **THOMAS S. ROBERTS AWARD:** Mrs. Herbert Richardson, 5215 Thrid Ave. S. Minneapolis. **FINANCE AND ENDOWMENT:** Ross Wagner, Box 171, Mountain Lake. **HOTLINE:** Donald Bolduc, 4211 Blaisdell Ave., Minneapolis 55409. **SLIDE FILE LIBRARY:** Wally Jiracek, 5814 Portland Ave., Minneapolis 55417. **HISTORIAN:** Mrs. Harvey Putnam, 1407 Woodland, Duluth 55803.

AFFILIATED CLUBS OF THE MINNESOTA ORNITHOLOGISTS UNION

AGASSIZ AUDUBON SOCIETY

President: Mr. Gladwin Lynne, 404 East Prairie Ave Warren, Minn. 56716

M. O. U. Representative: Douglas Sanstrom

ALBERT LEA AUDUBON SOCIETY:

President: Bill Bryson, Route 2, Alden, Minn. 56009

M. O. U. Representative: Mary Kampen

AUDUBON SOCIETY OF FARGO-MOORHEAD

President: Mrs. Leslie Welter Jr.

Box 579, Moorhead, Minn. 56560

M. O. U. Representative: Mrs. Wm. Wyatt

AVIFAUNAL CLUB

President: Mr. Harding Huber, 2109 Squire Lane New Brighton, Minn. 55112

M. O. U. Representative: Mr. Robert Janssen

COTTONWOOD COUNTY BIRD CLUB

President: Lester Rupp, Mountain Lake, Minn. 56159

M. O. U. Representative: Ross R. Wagner

DULUTH AUDUBON SOCIETY

President: Mrs. Janet C. Green, 9773 N. Shore Dr. Duluth, Minn. 55804

M. O. U. Representative: Mrs. Marjorie M. Carr

ECOWAY AUDUBON OF PINE RIVER

President: Mrs. Judy Petrich, Route 2, Box 93 Backus, Minn. 56435

GRINDSTONE LAKE AUDUBON SOCIETY

President: Michael Sommer, 100 Third Ave. N.E. Pine City, Minn. 55063

M. O. U. Representative: Mike Link

HIAWATHA VALLEY BIRD CLUB

President: Mr. Jay Hamernick, 1297 W. Wincrest Winona, Minn. 55987

M. O. U. Representative: Dr. Donald Mahle

MINNEAPOLIS AUDUBON SOCIETY

President: Miss Theodora Melone, 2601 Sunset Blvd. Minneapolis, Minn. 55416

M. O. U. Representative: Mrs. George Stanley

MINNEAPOLIS BIRD CLUB

President: Miss Jane Spence, 125 E. Broadway Osseo, Minn. 55369

M. O. U. Representative: Mr. Walter Jiracek

MINNESOTA BIRD CLUB

President: Mr. Manley Olson, 1974 W. Summer St. St. Paul, Minn. 55113

M. O. U. Representative: Dr. W. J. Breckenridge

MINNESOTA RIVER VALLEY AUDUBON CLUB

President: John Rehbein, 512 Portland Place Bloomington, Minn. 55420

M. O. U. Representative: Horace Chamberlain

ST. PAUL AUDUBON SOCIETY

President: Jon Belisle, 2040 Wilson Ave. St. Paul, Minn. 55119

M. O. U. Representative: Kathy Engstrom

ZUMBRO VALLEY NATURE CLUB

President: Ervin Schmidt, 3920 Kahoun Ct. S. E. Rochester, Minn. 55901

M. O. U. Representative: Carl Johnson

THE PRESIDENT WRITES . . .

One of the worst things that could possibly happen to one of our Minnesota lakes, according to many people, would be the classification of that lake by the Minnesota Department of Natural Resources as a "Waterfowl and Furbearing Mammal" lake and the management of that lake accordingly. Yet, this move could transform many of the shallow, uninteresting basins of water in the southern part of Minnesota into havens for wildlife. At the turn of the century these lakes were true jewels on the prairie, teeming with waterfowl and other wildlife. Agriculture, the breaking up of the prairie sod, led to soil erosion and these lakes became the repository for some of the silt. Once sandy lake bottoms were covered with several feet of mud. The introduced carp completed the carnage, destroying the remaining aquatic vegetation. Now unrestrained wave action keeps the muddy bottom churned up and the shorelines bare of most vegetation.

The DNR classification and management plan is probably the very best that can be done for a bad situation. The basic management practice is the manipulation of water levels in the lake to encourage the growth of desirable aquatic vegetation, plants that will provide food and cover for wildlife and hold down the wave action. The rooted plants also utilize the heavy nutrient levels of the water, greatly reducing the algae growth. After the desirable plant balance is returned the water loses its murky green soup-like qualities and actually gets so clear you may watch tadpoles and sunfish on the lake bottom, a few feet below.

The wildlife community bounces back almost as rapidly as the plant life. Mallards and teal, puddle ducks that instinctively nest in meadows some distance from water, do adjust to nesting in cover nearer the lake. The rest of the shallow lake birds, from bitterns, rails, coots, grebes, redwings and Yellow-headed Blackbirds to marsh wrens soon provide a varied fare for the birdwatcher. A canoe provides especially pleasant access.

Before a lake may be designated as a special use management lake public hearings must be held in the area of the lake. DNR biologists point out the capabilities and limitations of the lake for various uses such as hunting, fishing, pleasure boating, water skiing, and (incidentally) birdwatching. Then comments are solicited from the public. Here is where MOU members may fit in with brief but convincing statements of the value of bird life and the amount of recreational use birdwatchers may make of the area. Most vociferous supporters of the "Waterfowl and Fur-bearer" classification are, naturally, the duck hunters and a few trappers. Opponents are the bullhead fishermen (and Joe Blow who speared a 10 lb. "pickeral" (northern pike) there back in the winter of 19-some time or other and wants the lake kept just as it was then) and two or three powerboaters whose teenage sons water-ski once or twice a year in the local lake even if they do get mud-spattered doing it. Some express concern that management may accelerate eutrophication, others are sure that the DNR is simply out to "drain our lake." If the public hearing indicates public support for lake designation the commissioner of the DNR then makes the appropriate designation and future management is in accordance with this classification.

Not all of our shallow southern Minnesota lakes may be successfully managed for wildlife. Each is different. But many of these lakes in name only that are now practically lifeless basins of water do have great potential as

wildlife lakes. These lakes deserve the support of MOU members for wildlife lake designation and management. The results will be surprising. Bear Lake, southwest of Albert Lea Freeborn County, even had successful nesting of Western Grebes in 1973.

WILLIAM H. BRYSON

CORRECTION

Due to a typographical error in the last issue of "The Loon" (Vol. 45, No. 3) on page 86 P. B. Hofslund, editor from 1951 to 1958 was inadvertently left out of the listing of past editors. My apologies to "Jack" for this error.

Editor

THE BIOLOGY OF OSPREYS IN MINNESOTA

by Thomas C. Dunstan

Introduction

The Osprey, a species of cosmopolitan distribution, has been studied intensively in some areas of North America. However, little information other than that on productivity (Dunstan, 1968a; Mathisen, 1973) and nest site selection (Dunstan, 1967; Mathisen, 1968) exists for this species in Minnesota. In 1963, I initiated a study about the biology of Ospreys in Itasca County and the Chippewa National Forest in Minnesota and have continued portions of the study through 1973. Some of the information I have gathered during these 10 years is presented here.

Chronology of Activities

Spring migration.—Spring migration begins during April and early May at or about the time that ice is melting from lakes and streams in the northern counties. The first birds are seen along open water of the Mississippi and St. Croix rivers about April 2 to 15.

Courtship.—Courtship begins in late April and the first week of May and copulation attempts began within a week of nest repair. I saw copulation by three different pairs three times at nests and once at a favored perch on

May 5, 7, 13, and 14, 1968. In order of occurrence, the sequences of precopulatory and copulatory behavior at the nests were: (1) the female layed flat on the nest breast down and wings out-stretched and quivering, and head and beak up; (2) the male flew circles around and over the nest while giving high-pitched whistles and stooped and swooped at the female; (3) the female gave longer ascending whistles with head down and wings still quivering; (4) the male flew to the nest edge, landed, and flapped his wings while positioned behind the female and continued whistle calls; (5) the female raised her tail and the male mounted and balanced with outstretched wings during copulation. These sequences are similar to those described by Moll (1962) for Ospreys in Europe.

Egg laying and incubation.—Eggs are laid, usually one to three per clutch, about May 6 to 15 and incubation is usually by the female (distinguished from the male by her more pigmented breast feathers, louder calls, and more defensive behavior at the nest). Paul Spitzer (pers. comm.) told me that in Connecticut male Ospreys sometimes incubate about 10 to 20 percent of the time. The incubation period for Ospreys is a moot point and sources in the literature give periods from 21 to 28 days (Gill, 1901) to 35

days (Kuhk, 1928). Eggs hatched about June 15 and young remained in the nest until fledging about August 11 to 19. Care of Minnesota nestlings is similar to that described by Abbott (1911), Ames (1964), and others.

Nesting

Nest dispersion.—I have found no nesting colonies such as described for Ospreys in the East Coast regions of the U.S.A. The greatest density that I found was five nests (three active) in an area of 2.4 km. All my other nests were well separated. Nests seem to be randomly dispersed but are closely associated with water. The location of six nests in relation to lakes fished upon is shown in Fig. 1. Occasionally nests are built on man-made structures such as powerline support poles (9 of 132), but are usually on the tops of dead or partially dead conifers.

Nest structure.—The platform nests are round in shape, about one and one-half meters across, with relatively straight sides sometimes two and one-half m deep and are easily distinguished from the cone-shaped nests of Bald Eagles. The mean height of 77 nests was 16 m (min. 9 m; max. 27 m). These nests are much higher than those of colonial nesting Ospreys at Fletcher Pond, Michigan, the nests along the East Coast (Ames, 1961; Bent, 1937), and those in Florida Bay (John Ogden, pers. comm.). The nest cup is round, about six to 12 cm deep and 60 cm across, and lined with pendulous lichens. Sticks for the nest are broken from dead trees by birds in flight or are picked up from the water or shoreline. Nest repair and remodeling continues through the incubation and brood period.

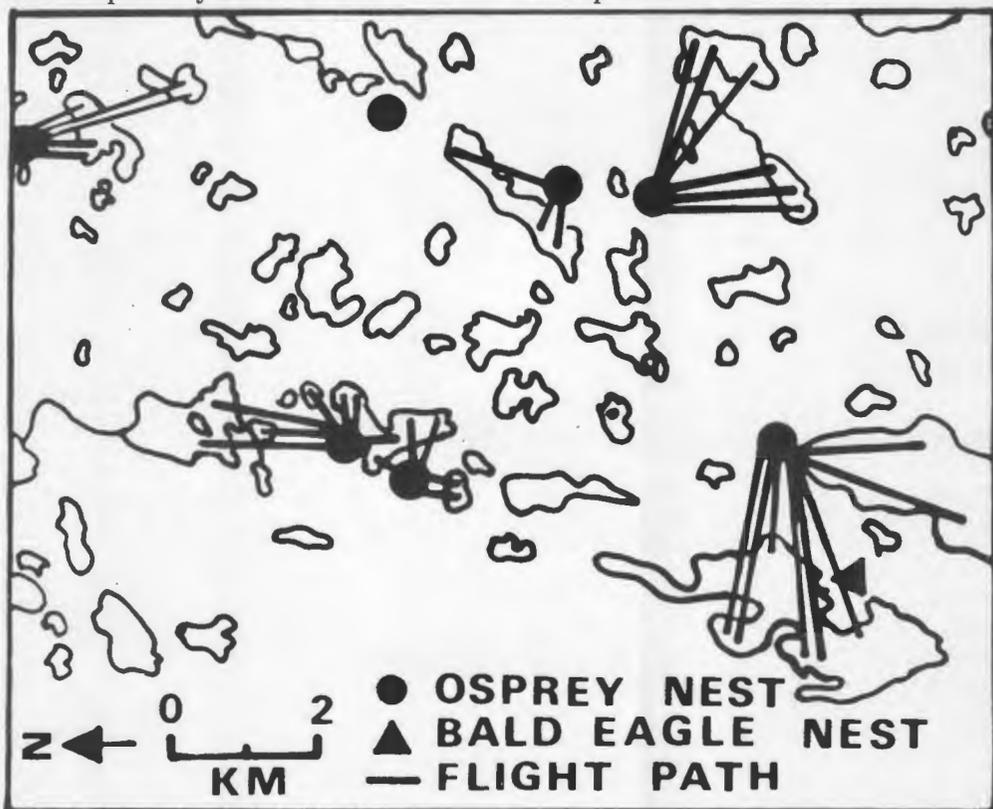


Fig. 1. The location in Chippewa National Forest area of seven active Osprey nests, one active Bald Eagle nest, and 34 fishing flights of six adult male Ospreys from six nests to the fishing area.

Behavior at the nest

After many hours of observation from blinds placed near nests I can add little new information to that already reported for Ospreys from other areas (Abbott, 1911; Ames, 1964; Waterston, 1966, and others). Ospreys in Minnesota do behave like those in different regions of the world. Behavior such as the female tending the nestlings is typical.

One example of nest or nestling defense by Ospreys other than and including the parent birds took place on July 12, 1966 when I walked below a nest 14 m above while collecting prey remains. As I appeared from the woods and walked into the opening of a bog the female flew toward me and gave a typical whistle call and a metallic "cack" call. The latter call is usually given only during times of extreme aggression and often accompanied with stooping, swooping, or low circling flights. The male, who is much less defensive, flew from a nearby perch around the nest in wide circles and also called. Two other Ospreys appeared and flew seven wide circles outside those of the parent birds but they did not call, swoop, or stoop. I knew of no other active nest within 6 km of this nest. A similar sequence of events happened at one other nest.

Behavior away from the nest

Little information appears in the literature about the behavior of breeding Ospreys when they are away from their nests. In 1967 and 1971 I made extensive studies on feeding behavior and food habits of breeding males using the usual method of direct observation and also newly developed radio telemetry techniques (Dunstan, in press, a).

Fishing.—The males did the fishing for the family and fished from before sunrise until after sunset, at times returning to the nest to deposit fish or to roost nearby well after sunset and in the dark. The seven flights and landings in the dark that I saw were well coordinated.

Very few reports of Osprey fishing methods have been published. I found that Ospreys in Minnesota feed on fish, primarily centrarchid species, and hunt from perches along lake-shores or while flying, depending on the weather. Both live or dead fish are taken. The feeding methods that I noted are described elsewhere (Dunstan, in press, b). In general, on windy days Ospreys fish by soaring over lakes with no sharp onshore dropoffs often flying over more than one lake. They also fish from perches near shores protected from wind and with sharp dropoffs and usually catch live fish that swim along vegetation near the surface. On June 15, 1966 an Osprey perched on its favored perch during a hail storm and later took three fish after each fish came up to bite at large, floating hail from the storm seven minutes before. On July 10, 1966 while canoeing along the shore of a deep lake I heard the high-pitched fishing calls of an Osprey and upon coming around a point of land I saw a male Osprey hovering over one particular area. When I approached the bird increased the intensity of its calls and made a gentle swoop at me. I found a 33-m-long trotline that extended from a depth of one-half to seven meters over a sharp drop off and was baited by a poacher every one and one-half m with live blue-gills.

In 1971 miniature radio transmitters were placed in floating fish so that Ospreys could pick them up and carry them to nests or feeding perches. I then located the marked fish and found new or known nests, or feeding perches from which I collected prey items for food analysis. This technique is discussed in another paper (Dunstan, in press, a). The spatial relationship of nests in regard to feeding areas is also shown in Fig. 1.

Fledgling flights.—Throughout the breeding season fledglings remained closely associated with the nest for feeding, loafing, and roosting even into mid-August when the young were practicing fishing techniques. On August 19, 1969 one family of Ospreys

performed elaborate flights of long duration over favored fishing areas. One young bird followed each parent through aerial maneuvers that included high loops, and swoops low over the water. The adult male gave high-pitched calls similar to the calls given when fishing and circled upward carrying a fish in his talons and then descended on half-folded wings and flew low over a bay often fished. A fledgling followed throughout the maneuvers and gave calls similar to those given by Osprey nestlings when food is brought by the adults. This same procedure inter-mixed with short flights continued for about 56 minutes. The female performed similar maneuvers and one young followed her also. All four birds returned to the nest and each of the fish the adults carried were eaten by the fledglings. Whether or not young raptors need to be taught to hunt is also a moot point. On one other occasion I saw an adult perched along with a fledgling in a sheltered bay used often for fishing. The adult stooped and caught a fish and the young bird followed immediately behind and grabbed feet fulls of coontail and no fish. The adult flew to a feeding perch and gave the young the fish after the latter called vigorously. I feel that if the young do leave the home range by late September as mentioned in the Chronology and are alone they then must learn to hunt within a month after fledging and perhaps vigorous "training" is necessary. However, if the young disperse and migrate with the adults, which is likely because they do follow the adults closely each day after fledging, the young may then have additional time to practice with food provided before having to fend for themselves. Members of families leave the home range about the same time. The one-month hunting practice of Ospreys is in contrast to the three and one-half month fledging flights and practice of Bald Eagles from the same study area.

Productivity and mortality

Productivity.—Productivity was dis-

cussed by Dunstan (1968a) and Mathisen (1973). Survey methods varied. Dunstan watched from the ground, used a camera (Dunstan, 1968b), and used aerial surveys. Mathisen used aerial surveys in May and August. The Minnesota Osprey population is doing much better than some populations on the East Coast and just about maintains itself based on the number of young produced per **active nest** (a nest with adult in incubation position for a number of days or eggs present). Productivity in Minnesota varied from 1.0 to 1.7 (Dunstan, 1968a) and from 0.5 to 1.2 (Mathisen, 1973). Henny and Wight (1969) state that in order to balance demonstrated mortalities a breeding age female in a population must produce each year between 0.95 and 1.30 young per nest. On this basis it would appear that Ospreys in Minnesota are bordering on maintaining the population. Dunstan (1968a) stated that from 1961 to 1968 the brood size varied annually from 1.35 to 1.69 young per **successful nest** for 16 to 132 nests. A successful nest defined here as a nest at which at least one young was raised to late fledging stage. During this period 60 to 100 percent of the nests observed were successful. The best successes were from small samples and nests that I watched during the early years of the study when only successful nests were studied for behavioral purposes, thereby creating a bias. Mathisen (1973) stated that from 1968 to 1972 the brood size varied from 1.5 to 1.8 young per **successful nest** for 73 to 104 nests. During this period 32 to 57 percent of the nests observed were successful.

Mortality.—Mortality factors such as shooting, electrocution, and human disturbances were discussed previously (Dunstan, 1968a) and I have little to add at this time.

Environmental contaminants and human disturbance

Environmental contaminants.—In 1970 prey remains were collected from below active nests and feeding

perches and were analyzed for the presence of chlorinated hydrocarbons and polychlorinated biphenyls (PCB). Two favored prey species, blue-gills and yellow perch, were analyzed by the Fish-Pesticide Research Laboratory, Columbia, Missouri in March of 1971. The results were minimal contamination by DDE, DDD, DDT, and PCB 1248-52, or 1260 (Table 1). From this sample it appears that if our Ospreys do have pesticides in their eggs

or bodies the source may be from prey eaten along the migration routes rather than from prey on the breeding ranges in Minnesota.

Human disturbance.—The effect of human disturbance on productivity is a difficult factor to evaluate. Dunstan (1968a) pointed out one case of persons building an observation blind during the incubation period near a nest containing three eggs and the nest was abandoned. Another person

TABLE 1

Whole Fish Analysis of Osprey Prey for Chlorinated Hydrocarbons and Polychlorinated Biphenyls

Species	I. D. No.	p, p' isomers ¹			PCB (Aroclor) ²		
		DDE	DDD	DDT	1248-54	1232	1160
Bluegill	B-1	0.002	—	—	—	—	—
"	B-2	0.002	—	—	—	—	—
"	B-3	0.005	0.002	—	0.03	—	—
"	B-4	0.020	0.007	—	0.04	—	—
"	B-5	0.007	—	—	—	—	—
Yellow Perch	P-1	0.006	—	—	0.11	—	—
"	P-2	0.002	—	—	—	—	—
"	P-3	0.002	—	—	—	—	—
"	P-4	0.002	—	—	0.37	0.09	—
"	P-5	0.008	—	—	0.10	0.04	—

¹ Minimum detectable limits for DDT groups was 0.0003 micrograms/gram

² Minimum detectable limits for PCB groups was 0.005 micrograms/gram

climbed to a nest containing one egg and this nest was abandoned immediately after this experience. In the first case Ospreys did nest successfully the following year at the same nest. However, in the second case the nest has gone unused since 1966. J. E. Mathisen and I agree that the incubation period for Ospreys and Bald Eagles is a precarious period in regard to disturbance and nest abandonment or death of embryos.

Since 1963, seven nests that were used regularly (four on islands and three on lakeshores) have been abandoned for at least three years. The islands are small and are now used heavily by humans, and two of the three nests on the shorelines now have much foot traffic by them from about May 15 through the summer. A dirt road was bulldozed within 16m of the third lakeshore nest. New nests have been found nearby but inland

from these seven nests which may indicate a trend for movement away from lakes used by Ospreys for fishing. This movement is probably due to the annually increasing human pressure in the form of summer recreation of these areas. Today many campers and fishermen use these islands. Evidence indicates that human disturbance is present but the effect on productivity is not yet determined. Because Ospreys prefer to nest in lowlands (bogs and marshes) persons with off-road vehicles other than watercraft have not had any noticeable effect on Osprey productivity.

Summary

In Minnesota Osprey spring migration begins in late April followed by nest building or repair in early May. Courtship and copulation occur in early May and eggs are laid. Eggs are incubated by the female who also

tends the young until fledging in August. The male provides food. Nests are widely dispersed and are built in lowlands on the tops of dead conifers an average of 16 m high. Males fish from favored perches along sheltered bays on windy days or while soaring from early morning until after sunset. Chlorinated hydrocarbons and polychlorinated biphenyls in prey expressed in micrograms per whole fish were DDE (.002 to .02), DDD (.002 to .007), PCB 1248-54 (.03 to .37), and PCB 1232 (.04 to .09). DDT and PCB 1160 were not detected. Productivity was reviewed and ranged from 0.5 to 1.7 young per active nest. Adults and fledglings leave the home range about the same time in fall. Human disturbance has caused nest abandonment, and may have influenced seven pairs of Ospreys to build nests further from lakeshores and islands used previously.

Acknowledgments

The author acknowledges the guidance of B. E. Harrell, and the assistance of J. E. Mathisen. The U.S. Fish-Pesticide Research Laboratory, Columbia, Missouri conducted the pesticide and PCB analysis. The Frank M. Chapman Memorial Fund Committee provided funding for travel and collection of prey.

LITERATURE CITED

Abbott, C. A. 1911. The home-life of the Osprey. London, Witherby and Co.

Ames, P. L. 1961. A preliminary report on a colony of Osprey. *Atlantic Nat.*, 16:26-33.

..... 1964. Notes on the breeding behavior of the Osprey. *Atlantic Nat.*, 19:15-25.

Bent, A. C. 1937. Life histories of North American birds of prey, pt. 2 *U.S. Natl. Mus. Bull.*, 195:352-379.

Dunstan, T. C. 1967. A Study of Osprey in Itasca County, Minnesota. M. A. Thesis, Dept. of Zoology, University of South Dakota. 66p.

..... 1968a. Breeding success of Osprey in Minnesota from 1963-1968. *Loon*, 40:109-112.

..... 1968b. A camera research apparatus for investigating nests of canopy nesting birds. *Loon*, 40:115-117.

..... (in press, a) The application of radio-telemetric techniques to Osprey research. *Proc. First N. Am. Asprey Res. Conf.*, Williamsburg, Virginia.

..... (in press, b) Feeding activities of Ospreys in Minnesota. *Wilson Bull.*

Gill, T. 1901. The Osprey or fish-hawk; its characteristics and habits. *Osprey*, 5:11-12, 25-28, 40-42, 60-61, 73-76, 92-93, 105-106, 124-125, and 141.

Henny, C. J., and H. M. Wight. 1969. An endangered Osprey population: estimates of mortality and production. *Auk*, 86:188-198.

Kuhk, R. 1928. Uber die brutdauer von *Pandion h. haliaetus* L. *Orn. Monatsb.*, 36:148-149.

Mathisen, J. 1968. Identification of Bald Eagle and Osprey nests in Minnesota. *Loon*, 40:113-114.

..... 1973. Bald Eagle-Osprey status report, 1972. *Loon*, 45:15-16.

Moll, K. H. 1962. Der Fischadler (*Pandion h. haliaetus*). Wittenberg Lutherstadt. A. Ziemsen Verlag.

Waterston, G. 1966. Ospreys in Speyside. Bedfordshire, Royal Society for the Protection of Birds.

Department of Biological Sciences, Western Illinois University, Macomb, Illinois 61455.

OVERWINTERING SAW-WHET OWLS IN CLAY COUNTY

by Tim L. McCabe

Due to their seclusive habits, Saw-whet Owls are seldom encountered as is indicated by the scarcity of sightings in the MOU yearly sight records. I believe these owls are more abun-

dant than the records indicate and this situation could be remedied if birder's were more famaliar with their habits. The following is a record of overwintering Saw-whet Owl behavior with special consideration given for locating Saw-whet Owls.



Saw-Whet Owl Sightings

On Dec. 12, 1972 I located three Saw-whet Owls at different locations on a twenty mile stretch of the Buffalo River and Hay Creek in Clay Co., Minnesota. All three owls were located in Alder stands. The locations are: 2.5 miles west of Downer, six miles south of Glyndon and one mile east of Georgetown. The Glyndon sighting, known as the 'Deer Section' was chosen as representative of Saw-whet Owl wintering habits due to its accessibility. It was only one-half mile from the nearest road. The Saw-whet Owl pre-

fers desolate stretches with lots of alder. This owl had four roosts that were regularly used. Sightings are listed in Table I.

Roosts are readily located by searching for defecation and pellets on the surface of the snow in Alder patches. The photograph illustrates this as well as showing a layering effect caused by a buildup of pellets and defecation with intervening snowfalls. Pellets can be collected and separated layer by layer and then compared with weather data to determine approximate expulsion period.



Defecation and Pellets found under roost #2

Table I

Date (1972-73)	Owl present	Owl absent	Roost site #
Dec. 12	X		2
Dec. 26		X	
Jan. 6	X		2
Jan. 13		X	
Jan. 20	X		4
Jan. 27	X		4
Feb. 3		X	
Feb. 11	X		4
Feb. 16	X		4
Feb. 24	X		2
Mar. 16	X		4
Mar. 18		X	
Mar. 20		X*	

* Continued absence of fresh pellets after this date indicates that the owl moved out of the area.

Night Stands and Day Roosts

As seen from Table I, only Roost site #2 and 4 were actually occupied during the day. On this basis, and because pellets were not found under roost 1 and 3, the term 'night stand' and 'day roost' are designated at this juncture for convenience. A day roost

is where the owl sits during the day and where he regurgitates his pellets, usually just before he starts to hunt (Craighead, 1956). I can just guess at the use of night stands, but logic tells me that these are rest stops when the Saw-whet Owl is munching on a mouse or just tuckered out. Large amounts

of defecation are found under both types of roosts, but no pellets are ever found at night stands.



Day Roost #3

The day roosts and night stands were located on a high bank with a 70 meter long ridge of Alder. Immediately to the east is an island formed by backwash and veritably choked with Alder. The owl prefers to sit 8 - 14 feet in height and is very docile during the day. Day roost #2 has a snowmobile trail directly underneath!

The owl won't take flight until he is within two feet of your grasp! Once flushed, he seldom goes more than 30 feet before realighting. The Saw-whet Owl prefers to sit in trees four inches in diameter or greater. He sits so close to the trunk that he almost touches it. The disruptive markings make him almost impossible to spot directly, but by locating pellets and directing the line of vision upwards at each roost, he is easy to locate. The photo of day roost #2 shows guano on the limbs below the owl as well.

At dusk he becomes restless in my presence and with oncoming darkness he flushes very quickly, like a Ruffed Grouse, but without the clamour. He quickly flies through the alder and is gone in a flash.



Day Roost #4

Feeding Habits

Owl pellets were collected to determine feeding habits. Table II shows the results of the data obtained. Driver's paper (1949) was used in determining skulls. Huber (1960) reported

Table II

Date (1972-73)	Approximate Period	# Pellets	Species
Nov. 1?- Dec. 12	45 days	8	6 <i>Peromyscus</i> sp 5 <i>Microtus pennsylvanicus</i> 4 <i>Clethrionomys gapperi</i>
Dec. 13- Jan. 6	25 days	5	2 <i>Peromyscus</i> sp 4 <i>M. pennsylvanicus</i> 4 <i>C. gapperi</i>
Jan. 7- Jan. 21	15 days	3	3 <i>M pennsylvanicus</i> 1 <i>C. gapperi</i>
Jan. 22- Feb. 11	20 days	3	3 <i>M pennsylvanicus</i> 3 <i>C. gapperi</i>

From Table II, it appears that the owl was feeding primarily on *Peromyscus* early in the winter. After we received considerable snow cover the *Peromyscus* dropped off sharply. This probably indicates mouse behavior rather than a hunting selection change. I frequently observed *Microtus* on the surface of the snow, but haven't seen *Peromyscus* do this, but they probably do so at a lesser frequency. Another possibility is that they change hunting areas and begin to hunt areas low in *Peromyscus*. Craigheads' (1956) observations indicate that owls hunt an area for a week and may then move on, keeping the same roosts.

Doing some simple arithmetic, the number of pellets left are found at a rate of 1 per 3 days. However, only a fraction of the pellets formed are found at the day roosts. Each pellet typically contains two mice. The pellets are approximately two inches long and ½ inch in diameter.

After March 16th, the Saw-whet Owl apparently moved out. This was verified by an extensive search of the alder patch and the old river bed area. All woodpecker holes were checked for occupancy as the 16th approaches the nesting date for owls. Two separate locations had a single pellet beneath

one Masked Shrew in a Saw-whet Owl pellet in Hennepin Co., Minnesota on March 15, 1959. No shrews were found in my samples, possibly because shrews utilize snow cover and by March 15th this protection is gone.

(possibly ejected in flight), but no defecation was present. Two more visits with no success terminated the study.

Summary

Saw-whet Owls frequent Clay County in the winter, but it is doubtful if they nest on the wintering grounds. They feed almost entirely on mice, taking *C gapperi* and *M pennsylvanicus* most commonly as these spend a lot of time on the surface of the snow compared to *Peromyscus*. Forbush (1955) indicates that the Saw-whet Owl may not migrate southward as extensively every year.

References

- Craighead & Craighead. 1956. **Hawks, Owls & Wildlife**. Wildlife Management Institute, Washington D. C.
- Driver, E. C. 1949. **Mammal Remains in Owl Pellets**. Midland Naturalist, 41:139-142
- Forbush, E. H. & May, J. B. 1955. **A Natural History of American Birds of Eastern and Central North America**. Bramhall House, New York. p. 278-9.
- Huber, R. L. 1960. **Owl Pellet Studies from Three Areas in Hennepin and Scott Counties**. The Loon, 32:13-14.
- 101 1st Avenue S.W., Dilworth, Minnesota 56529.

A BIRD TRIP ON THE ZAIRE RIVER

by John Hart

Between March 19 and March 28, 1973, I had the opportunity to travel by barge on the Zaire (ex-Congo) River from near its mouth at Kinshasa to the city of Kisangani more than 1000 miles upstream.

During the day the African sun drives many birds and all bird watchers to the shelter of a shady roost but in the cool of early morning and late afternoon I donned my binoculars, spread my bird books before me on the deck and hung over the side of the barge, hoping to catch a glimpse of some of the bird life as we passed by.

For many of my fellow passengers I must have been a curious spectacle as I alternately gazed out over the water, rapidly jotted notes and paged thru my thick, heavy bird books. By the end of our long trip, however, they were all pointing birds out to me and my binoculars were in continual circulation.

The Zaire River is truly immense. Its waters drain most of central Africa, an area about half the size of the continental U.S. Since the river straddles the equator, with tributaries feeding from the north as well as the south, the greater portion of the Zaire below Kisangani experiences two different periods of high water corresponding with the opposing rainy seasons in the northern and southern tropics. During my trip the water was fairly low, but northern tributaries, swelling from the "spring" rains were already raising the river's level. During the later summer months the river will be very low but during November and De-

ember it will mount again quickly as it is flooded by tributaries watered from the south.

The fluctuations of the river level are as important to bird life as the changing seasons in our temperate climate. The migrations and nestings of many water birds are correlated to the seasonal appearances of sand bars, mud flats and low-lying swamps.

During the course of our trip we passed thru several distinctly different environments and terrains. From Kinshasa to Bolobo, a distance of about 200 miles, the Zaire cuts thru low, rolling hills which sometimes rise several hundred feet above the river's bed. The channel here is very deep and up to two miles across. The hills are covered with grassy savannah, sometimes grown up with bushes and scattered low trees. From the valleys and protected flanks of hills a low, thick jungle stretches upward and merges with the savannah.

As we pass northward, galleries (strips of high forest located along water courses) replace the low jungle in the valleys. The forest is succeeded by a belt of brushy savannah and finally almost open grassland on the hill-tops. In many spots this savannah was being burned by local hunters in order to rouse game and undoubtedly these fires are important in determining the boundary between forest and grass.

Near Bolobo the river channel begins to widen and soon we are moving up a vast sheet of water marked by many low, flat islands which are covered with a variety of vegetation including thick stands of head high grass, papyrus beds, brushy thickets, stands of rafia palm and patches of open forest. In these inundated regions large trees are widely spaced and many are partially dead. Their bare branches provide perches for some of the larger birds.

All the way to the region of Basoko,

EDITORS NOTE: John Hart, resident of Morris, Minnesota, M.O.U. member and contributor to past issues of "The Loon" is now in Africa doing studies on several native tribes. I felt this article about his trip up the Zaire River would be of unusual interest to readers of "The Loon".

a distance of about 700 miles, the boat passes thru a complicated maze of channels and islands. The landscape offers no relief. As far as one can see there is water, dotted by bits of land and seperated from the sky by a thin, jagged and broken line of dark green. We pass the confluences of many great rivers: the Sanga, the Ubangi, the Ruki and Lulanga, but it is never possible to observe their mouths. The river varies from a jade colored olive green to the color of slightly milky tea.

As we approach Basoko the river's channel diminishes considerably. The swamp vegetation or *tingi tingi* as it is known to the local fishermen, is confined to islands or to a narrow strip along the river banks. Occasionally I can catch glimpses of the solid, dark green wall of the primary forest beyond.

By the time we arrive at our destination, Kisangani, there are many fewer channel islands and the forest comes right down to the water's edge.

Throughout the course of the voyage I was able to identify 36 species of birds, almost all of them large or distinctive non-passerines, recognizable at some distance.

Even though the water level was fairly low and there were numerous exposed sand bars, birds were not abundant. I found the paucity of ducks and geese, so characteristic an element of our temperate waterways, particularly striking. I spotted only a single Knob-billed Goose (*Sarkidornus melanotus*), though seven other resident and four European migrant species might have been expected.

Unlike the *Anseriformes*, the *Ciconiiformes* were well represented. Herons, bitterns and egrets were common along the whole river. Lone Great White Herons (*Casmerodius albus*) and Little Egrets (*Egretta garzetta*) patrolled the sand bars. The Goliath Heron (*Ardea goliath*), Purple Heron (*Pyrherodia purpurea*), Black-headed Heron (*A. melanocephala*) and the migrant Grey Heron (*A. cinerea*) from Europe often perched conspicuously on dead

stubs, while the Green-backed Heron (*Butorides striatus*), the European Squacco Heron (*A. ralloides*) and the White-crested Bittern (*Tigriornis leucolopha*) skulked amidst the water side thicketry. Flocks of the highly adaptable Cattle Egret (*Bubulcus ibis*) occurred on floating mats of hyacinths, on the exposed sand bars and in the thicker mass of *tingi tingi*.

I also spotted three species of storks. All of these birds are highly migratory though the patterns of their movements are little known. The Open-billed and Woolly-necked Storks (*Anastomus lamelligerus* and *Disoura episcopus*) often perched high in the branches of dying trees. I saw two different flocks of Wood Ibis (*Ibis ibis*) on distant sand bars.

Of the true ibises I was only able to identify one species, the Hadada (*Hagedashia hagedash*), although I could have expected four other species.

Members of both the *Pelicaniformes* and *Charadriiformes* were unexpectedly scarce. I usually saw several different Anhinga (*Anhinga rufa*) each day, but the Long-tailed Cormorant (*Phalacrocorax africanus*), the common inland representative of its genus in Central Africa, occurred only in widely seperated locals along the forested and *tingi tingi* stretches of the river.

Two unidentified, small *Laridae* stayed well out of binocular range ahead of our chugging barge while one medium-sized, migrant "peep" hugged the river's edge.

Several birds, though not water birds as such, are found in the close vicinity of rivers and lakes. Most striking of these is the Bald Eagle-sized Fishing Eagle (*Cuncuma vocifer*) which I saw regularly the whole distance from Kinshasa to Kisangani. During the morning and evening I usually spotted one or two birds along every eight to eight and a half mile stretch of river. Once we passed a large stick nest high in the fork of a dead, water-side tree. As one adult perched nearby, another, standing in

the nest, bent down toward some invisible object.

Kingfishers are well represented in Africa. Both water frequenting species and land lovers are to be found. I was able to identify three of the larger and more characteristic species: Pairs of the Woodland Kingfisher (*Halcyon senegalensis*) were always prominent by their continual chatter, their bright blue plumage and their striking red and black bills. I often saw the Pied Kingfisher (*Ceryl rudis*) hovering over a backwater or quiet eddy and once I saw the Giant Kingfisher (*Megaceryle maxima*), a bird of about the same size as our Minnesota kingfishers.

Perhaps my biggest surprise of the trip was a bird I expected but did not see. Not once did I identify the African River Martin (*Pseudochelidon eurystomina*, a red-eyed, red-billed, all black, aberrant swallow which, migrating from the Atlantic coast of Gabon, is a characteristic nesting species of the sand bars of the middle Zaire River. Whether I simply overlooked distant birds or whether they were truly absent I can not say.

Hopefully I will have the opportunity to make further trips on the Zaire and its tributaries over the next year. This vast and unpolluted watershed is still almost totally undeveloped. It presents today nearly the same aspect it presented Henry M. Stanley, who first explored it a century ago and its hydrology and natural history have only recently begun to be known.

But big changes are in store for the Zaire. Like the rest of developing Africa, the Zaire Republic must have power and already two of the world's largest damming projects are being planned for the river. Without a doubt, problems of energy distribution and resource exploitation will continue to be an important concern for Central Africa throughout this century. Just how the interplay of resources, politics and economics will affect the Zaire River remains unknown, but the future of central Africa will be closely tied to the fate of its great river system.

Consulate Americaine
B. P. 1943
Kisangani, Haut Zaire

BLACK-BILLED MAGPIE NESTINGS IN CLAY COUNTY

by David F. Parmalee, John R. Tester
and Richard J. Oehlenschlaeger

On May 29, 1972, Field Ornithology and Vertebrate Ecology classes, under the supervision of David F. Parmalee and John R. Tester respectively, set out from the University of Minnesota Forestry and Biological Station at Lake Itasca to study and explore prairie habitats west of Waubun. While most of us were concentrating on a colony of Chestnut-collared Longspurs on a nearly treeless ridge of short-grass prairie about five miles southeast of Felton in Clay County, Tom Carlson and Rick Schultz reported seeing a Black-billed Magpie flying

off across the prairie. The bird evidently had flown from several peach-leaved willows just east of the longspur colony.

A short search later disclosed a large but well hidden magpie's nest with four naked young (eyes closed) and one unhatched egg (no embryo) about seven feet up in one of the willows. In searching further we found an old magpie's nest in another willow, indicating nesting in 1971, though we had failed to note even adult birds in the area that year. In 1973 the same classes with new students returned to the longspur ridge on May 29. In still another willow was a fresh magpie's nest eight feet from the ground with

four young so well developed that many of their feathers only had remnants of sheaths. All four were far from fledging, however, and none attempted to bolt when returned to the nest. As was the case a year earlier, the adults were extremely shy, never approaching closely and giving us only occasional glimpses while flying a long way off.

Magpie nests usually are durable structures, but those of the Felton prairie evidently are not. By 1973 there were no visible remains of the presumed 1971 nest, and the one occupied in 1972 had deteriorated badly. Whether magpies used this site before 1971 is speculative.

Though nesting evidence is mostly lacking, magpie sightings in northern Minnesota are not uncommon. Indeed, we saw one magpie flying only a few miles north of Itasca State Park in Clearwater County on May 29, 1972 —

the same day we had discovered the nesting near Felton. Burger and Howe (Loon, fall 1971:78-79) described three successful magpie nestings for Marshall County in 1971. They concluded that the only confirmed nesting record for Minnesota prior to their observations was one reported by Leo Manthei for Beltrami County in 1951 (see Erickson in *The Flicker* 29 (3) 1957:95-99).

No doubt the species breeds in a number of counties in Minnesota, probably more commonly than heretofore believed. One likely breeding area is Roseau County where on May 23, 1973 the Field Ornithology and Vertebrate Ecology classes observed two adult magpies behaving like paired birds in the Roseau River Wildlife Management Area.

James Ford Bell Museum of Natural History, University of Minnesota, Minneapolis, Minnesota 55455.



Nesting site of Black-billed Magpie in Clay County. Photographed by Michael Johnson, May 29, 1972.



Nest of Black-billed Magpie. Photographed by Michael Hamas, May 29, 1973



Nestling Black-billed Magpie. Photographed by Michael Hamas, May 29, 1973

THE 1973 SPRING SEASON

by Robert B. Janssen

Species accounts compiled by
Oscar L. Johnson and John Mehaffy

Weather Data - March was warm and dry, in fact it was the warmest March on record. Rainfall in the Minneapolis-St. Paul region was only 1.11", 1/2" below normal. The unseasonably warm weather brought many early migrants during the first part of the month. Robins were singing and much in evidence by the 13th. A large migration of ducks occurred the same day south of Minneapolis including Redheads, Canvasbacks and Ring-necked Ducks, plus Red-breasted Mergansers. The latter species was 8 days earlier than ever recorded in 25 years of Twin Cities records. Ice had retreated from the Twin City lakes by

month end, several weeks earlier than usual. In spite of this mildness, the migration by the end of the month did not indicate an early spring. The last week in March produced little bird movement across the state, in fact, many of the newly open water areas were practically deserted. April was characterized by cloudy, cool and exceptional windy conditions. For example, on the 9th one inch of snow fell with winds 20 - 25 MPH and gusts to 40 MPH. The temperature did not get above freezing that day. These factors make for poor bird observation. Rainfall was approximately 1/2" over normal in the Twin Cities. With the strong north winds, birding activity was curtailed and birds appeared to arrive in "bits and pieces" with lulls in the winds. It was not till the 29th that any real "wave" of migrants was

noted, that along the Minnesota River in the south central part of the state. Some migrants were on time, a number of normal April migrants had not shown up by month end and many others had not shown up in normal numbers. May produced a variety of weather with the strong winds continuing especially out of the north. Clouds and rain were prevalent especially from the middle of the month to the end. The first May wave was recorded on the 5th but generally birds were late. Tennessee Warblers which are a good indication of migration in the area were at least ten days late. Another good migration was noted on the 19th and 20th. Few birds were early, many late and most trickled through in small numbers.

Loons, Pelicans, Cormorants, Herons

An adult Arctic Loon was observed on 5/3 on Lake Superior, near Duluth (JAB). This species may be occurring on Lake Superior with more regularity. Common Loons were early with the spring breakup of ice on lakes in the southern part of the state occurring in late March. A Common Egret was seen on March 13th in Wabasha County (RBJ) for the earliest spring date on record. Little Blue Herons again returned to the heron rookeries at Lake Johanna, Pope County (BAH) and Pelican Lake, Grant County (KRE). Cattle Egrets were also present at both locations. After establishing themselves as breeding species for the first time in Minnesota during 1973, it is hoped these two species will continue to expand in the state.

Swans, Geese, Ducks

Whistling Swans passed through the state in good numbers with a maximum number of 5100 in the Weaver marshes on 4/12 (JAB). The goose migration in the state was almost nonexistent, the fewest number of Snow/Blue Geese were reported that I can remember, in fact, the only report was of 6,000 in Lac Qui Parle County on 5/8 which is very late. The amazing total of 3,000 White-fronted Geese

were seen on the Big Stone National Wildlife Refuge on 4/12. Ducks were early with a heavy migration in early March. Puddle ducks were very scarce over the state in fact, the lowest in years in this writer's memory. However, diving ducks were in good numbers, especially Canvasbacks, 7,200 were at Ortonville on 3/28. Many other good concentrations were reported over the state.

Hawks

Ferruginous Hawks were seen on 3/25 near Barnesville, Clay County and on 5/26 near Dalton, Ottertail County (KRE). Bald Eagles wintered in the Read's Landing area again in good numbers and in early March their numbers were swelled by returning immatures. A maximum count of 35 was made on 3/17 with at least 20 of them being immatures. Marsh Hawks were recorded in encouraging numbers and several were seen daily from late March to late April on the Sherburne National Wildlife Refuge. Turkey Vultures were seen in early March which is unusual, the earliest record was 3/9 at Rice Lake Refuge, Aitkin County. Only two Peregrines were reported, one in Renville County on 5/15 and another on 4/19 at Agassiz National Wildlife Refuge (KRE).

Grouse thru Rails

Ruffed Grouse numbers "crashed" last fall in Minnesota and both Spruce Grouse and Ruffed Grouse numbers are low this spring, especially the Spruce Grouse. Ring-necked Pheasant numbers continue to decline in Minnesota due to clean farming practices. The only place one sees them regularly is in urban areas. A new location for Yellow Rails in the state was located in Aitkin County in late May. (TS).

Shorebirds

The migration of shorebirds in the eastern and central parts of the state was poor but excellent in the west. The Marshall sewage ponds in Lyon County were exceptionally good from early May through the month. On 5/15, 20 species were recorded with

White-rumps the most abundant, Wilson's and Northern Phalaropes, Dunlins, Hudsonian Godwits, Avocets, Piping Plovers, Least, Baird's and Spotted Sandpipers were all common. A Ruff was reported from Morrison County.

Gulls and Terns

The big news to Minnesota bird-watchers this spring was the discovery of 3 adult and 4 immature Little Gulls plus at least three Arctic Terns at Duluth on 5/27 (JCG). Both these species are new to the state list and were carefully identified and seen by many observers. The terns and at least one of the immature gulls remained in the area until June 4.

Doves thru Kingfisher

Great Horned Owls continue to be reported in good numbers from around the state. On 5/31 an immature Hawk-Owl was reported from near Duluth (JAB). Only one report of a Burrowing Owl was received, that of a single bird seen on 4/17 near Ortonville, one mile from the South Dakota border!

Woodpeckers thru Flycatchers

Yellow-bellied Sapsuckers were reported this spring in large numbers and by many observers. A Scissor-tailed Flycatcher, a casual bird in Minnesota, was reported on 5/25 near Onamina, Mill Lacs County.

Larks, Swallows, Wrens

After the winter invasion of Magpies none were reported this spring, most must have left the state to nest elsewhere. A Boreal Chickadee nest was found on 5/27 in Hubbard County (JAB). Red-breasted Nuthatches were very scarce this spring with only two or three reports received. A Carolina Wren remained at a feeder till 3/8 after spending the winter in Minneapolis.

Mockingbirds to Starlings

The migration of thrushes was very disappointing this spring with only one observer reporting any numbers. In this writer's opinion, it was the poorest migration of thrushes on re-

cord in this area. A Townsend's Solitaire was seen on 4/27 near Sunrise, Chisago County (WHL). This is the first report of this species in several years in the state.

Vireos and Warblers

Spring, 1973 was one of the better years for both warblers and vireos. The migration was sporadic and scattered until 5/19 when most species were seen in good numbers. Waves of Palms, Myrtles, Nashville's and Orange-crowns were seen at Frontenac on 5/5 (RBJ). Good numbers were next reported on the 19th (23 species at Frontenac (RBJ) and then till the end of the month throughout most areas of the state. Vireos were also in good numbers. Many people reported the Philadelphia Vireo. A Hooded Warbler (ETS) and Kentucky Warbler were recorded in Minneapolis on 5/23. The Hooded Warbler remained in the area for a week. Connecticut Warblers were on territory in Pine County on 5/31 (JCG).

Blackbirds thru Lark Bunting

This was the year of the Pine Siskin in Minnesota. It has to be the "bird of the year." The species was recorded from all corners of the state, birds remained at feeders through the spring and many reports of possible nestings were received from many localities. The numbers, frequency and localities recorded was unprecedented. Red Crossbills were also seen through many areas of the state including southern Minnesota. After their winter invasion birds remained at feeders and wandered about in small flocks across the state. Purple Finches were reported in poor numbers. A Baltimore Oriole on 3/1 at Deerwood, Aitken County in the northern part of the state is an enigma. If a wintering bird, it is the first successful attempt for the state. Brewer's Blackbirds seem to be on the increase, many more than usual, all to be seen along the highways. A Summer Tanager, another casual species, was reported from Minneapolis on 5/28 (CLH). A Western Tanager was

seen on 5/8 near Onamia, Mille Lacs County (MI).

Sparrows

The migration of this group was poor and sporadic. White-throated Sparrows were scarce and not reported in anywhere near normal numbers. Other species were also not reported with the usual frequency. Savannah Sparrows however, were abundant on the Rothsay prairie, Wilkin County on 4/21 (RBJ). A Baird's Sparrow was reported from Felton, Clay County on 5/26 (JAB). Longspurs, all Lapland, were in heavy migration at the Rothsay prairie on 4/21 (RBJ).

SPECIES ACCOUNTS

The following species accounts are the first attempt to compile your records by computer. Many hours of work were put in by Oscar Johnson and his student John Mehaffy. We would appreciate your constructive criticism and comments.

COMMON LOON: 33 REPORTERS REPORTING. EARLY SOUTH 3-08 WABASHA JAB 3-29 RANNEY REJ 3-38 HENNEPIN RBJ EARLY NORTH 4-18 BECKER TVR 3-31 MORRISON LSR 4-27 AITKIN CEPJ PEAK 5-17 ST. LOUIS (6) JCG 4-17 HENNEPIN (1) VL.

RED-NECKED GREBE: 11 REPORTERS REPORTING. EARLY SOUTH 4-08 MURRAY HCK 4-13 HENNEPIN ETSJ 4-14 CARVER RBJ EARLY NORTH 4-08 MORRISON LSR 4-22 MARSHALL AVR 4-25 ST. LOUIS JCG PEAK 4-23 MARSHALL (9) AVR.

HORNED GREBE: 25 REPORTERS REPORTING. EARLY SOUTH 3-24 HENNEPIN OLJ 3-25 GOODHUE JAB 3-28 HENNEPIN RBJ EARLY NORTH 4-14 MARSHALL AVR 4-15 CROW VING TSI 4-19 MARSHALL KREJ PEAK 4-26 ST. LOUIS (38) JCG 4-29 VINEY (18) BAJ LATE SOUTH 3-28 STEVENS KREJ 5-15 HENNEPIN VJ LATE NORTH 5-17 ST. LOUIS JCG 3-23 CROW VING TSI.

RARED GREBE: 13 REPORTERS REPORTING. EARLY SOUTH 4-08 LAC GUI PARLE HSI 4-22 HENNEPIN CKS 4-23 HOUSTON FELJ EARLY NORTH 4-23 MARSHALL AVR 3-24 CLAY JAB PEAK 5-13 MARSHALL (8) AVR 5-28 LYON (3) DRJ LATE SOUTH 4-08 LAC GUI PARLE HSI 4-23 HOUSTON FELJ 4-23 COTTONWOOD LRU LATE NORTH 4-28 HENNEPIN CKS 4-23 MARSHALL AVR 3-26 CLAY JAB.

PIED-BILLED GREBE: 37 REPORTERS REPORTING. EARLY SOUTH 3-23 DAKOTA RBJ 3-27 HENNEPIN ETSJ 3-27 DAKOTA VJ EARLY NORTH 3-28 ST. LOUIS JCG 4-23 AITKIN CEPJ 4-24 MARSHALL AVR PEAK 4-23 MARSHALL (68) AVR 4-14 NICOLLET (14) GJN.

WHITE PELICAN: 17 REPORTERS REPORTING. EARLY SOUTH 4-15 MURRAY HCK 4-28 RICE OAR 4-28 LAC GUI PARLE DBJ EARLY NORTH 4-17 TRAVERSE KREJ 4-18 MARSHALL AVR 4-21 TRAVERSE RBJ PEAK 5-18 LAC GUI PARLE (15) BAJ 4-21 TRAVERSE (18) HJ.

DOUBLE-CRESTED CORMORANT: 25 REPORTERS REPORTING. EARLY SOUTH 4-25 POPE REJ 4-27 POPE BAJ 4-14 OTTERTAIL KREJ EARLY NORTH 4-14 MARSHALL AVR 4-21 TRAVERSE RBJ 4-21 GRANT KREJ PEAK 4-21 TRAVERSE (18) HJ RBJ 4-28 LAC GUI PARLE (18) ETS.

GREAT BLUE HERON: 46 REPORTERS REPORTING. EARLY SOUTH 3-12 RICE OAR 3-12 HENNEPIN OLJ 3-13 SHERBURNE SVR EARLY NORTH 3-21 GRANT KREJ 3-22 BECKER TVR 3-27 MARSHALL AVR PEAK 4-23 MARSHALL (88) AVR 3-25 STEVENS (15) HJN.

GREEN HERON: 32 REPORTERS REPORTING. EARLY SOUTH 4-17 WABASHA KDK 4-28 GOODHUE JAB 5-21 WASHINGTON VJL EARLY NORTH 5-28 MORRISON LSR PEAK 5-28 WASHINGTON (9) VJL LATE SOUTH 4-17 WABASHA KDK 4-28 GOODHUE JAB 5-21 WASHINGTON VJL LATE NORTH 5-28 MORRISON LSR.

COMMON KESTR: 38 REPORTERS REPORTING. EARLY SOUTH 3-21 ANOKA HJ 3-24 WABASHA RBJ 3-25 LYON HCK EARLY NORTH 4-15 GRANT KREJ PEAK 4-28 VIREONA (38) JAB 5-14 ANOKA (8) SC LATE SOUTH 3-21 ANOKA HJ 3-24 WABASHA RBJ 3-25 LYON HCK LATE NORTH 4-15 GRANT KREJ.

BLACK-CROWNED NIGHT HERON: 21 REPORTERS REPORTING. EARLY SOUTH 4-24 RANNEY REJ 4-27 POPE BAJ 4-28 HENNEPIN ETSJ EARLY NORTH 4-23 GRANT KREJ 4-27 MARSHALL SVR PEAK 5-17 DAKOTA (15) DRJ LATE SOUTH 4-24 RANNEY REJ 4-27 POPE BAJ 4-28 HENNEPIN ETSJ LATE NORTH 4-23 GRANT KREJ 4-27 MARSHALL SVR.

AMERICAN BITTERN: 20 REPORTERS REPORTING. EARLY SOUTH 4-23 LAC GUI PARLE HSI 4-25 COTTONWOOD LRU 4-21 HENNEPIN PFJ EARLY NORTH 4-19 MARSHALL AVR 4-21 DOUGLAS RBJ 4-29 AITKIN CEPJ PEAK 5-15 MARSHALL (5) AVR 5-27 ANOKA (6) SC.

WISTLING SWAN: 28 REPORTERS REPORTING. EARLY SOUTH 3-14 POPE HJ 3-28 HOUSTON FELJ 3-21 WABASHA DMJ EARLY NORTH 3-27 CROW VING TSI 3-27 ST. LOUIS JCG 3-25 ST. LOUIS JCG PEAK 4-18 WABASHA (51) BAJ 3-27 LAC GUI PARLE (18) AFJ LATE SOUTH 4-27 SHERBURNE SVR 4-24 HENNEPIN RBJ LATE NORTH 5-15 MARSHALL AVR 5-15 AITKIN TS.

CANADA GOOSE: 26 REPORTERS REPORTING. EARLY SOUTH 3-28 HOUSTON FELJ 3-23 RICE BAJ 3-23 WREST BAJ EARLY NORTH 3-22 GRANT KREJ 3-22 TVR 3-18 MARSHALL AVR PEAK 3-28 MARSHALL (135) AVR 3-13 COTTONWOOD (58) LAF.

WHITE-FRONTED GOOSE: 1 REPORTERS REPORTING. EARLY NORTH 3-27 MARSHALL AVR PEAK 3-27 MARSHALL (1) AVR.

SNOW/BLUE GOOSE: 9 REPORTERS REPORTING. EARLY SOUTH 3-26 MURRAY ADK 3-22 LAC GUI PARLE HSI 4-26 OLSTED ETS EARLY NORTH 3-31 MORRISON LSR 4-17 TRAVERSE KREJ 5-28 MARSHALL AVR PEAK 4-17 TRAVERSE (28) KREJ 5-25 FREDRIM (18) AVR LATE SOUTH 5-21 MARSHALL AVR 5-18 ST. LOUIS HJN.

MALLARD: 26 REPORTERS REPORTING. EARLY NORTH 3-21 BECKER TVR 3-15 MARSHALL AVR 3-19 ST. LOUIS JCG PEAK 3-28 MARSHALL (74) AVR 4-18 SHERBURNE (18) SVL.

BLACK DUCK: 16 REPORTERS REPORTING. EARLY NORTH 3-19 ST. LOUIS JCG 3-28 AITKIN CEPJ 3-28 AITKIN TSI PEAK 5-23 MARSHALL (14) AVR 4-21 ST. LOUIS (18) JCG.

GADWALL: 18 REPORTERS REPORTING. EARLY SOUTH 3-28 WABASHA JAB 3-11 HOUSTON FELJ 3-17 VIREONA DRJ EARLY NORTH 3-18 MARSHALL AVR 5-21 CLEARWATER RCD 5-25 MARSHALL HSI PEAK 4-23 MARSHALL (345) AVR 4-19 ST. LOUIS (1) JCG.

PINTAIL: 28 REPORTERS REPORTING. EARLY SOUTH 3-27 DAKOTA ETSJ 3-27 HENNEPIN VJ 3-28 WABASHA JAB EARLY NORTH 3-18 MARSHALL AVR 3-28 AITKIN TSI 3-31 MORRISON BAJ PEAK 3-28 MARSHALL (178) AVR 3-26 WABASHA (5) DM.

GREEN-WINGED TEAL: 84 REPORTERS REPORTING. EARLY SOUTH 3-22 SHERBURNE SVR 3-21 WABASHA DMJ 3-21 LAC GUI PARLE DRJ EARLY NORTH 3-25 GRANT KREJ 3-21 AITKIN TSI 3-31 MORRISON BAJ PEAK 4-23 MARSHALL (1478) AVR 4-28 LYON (75) HJN.

BLUE-WINGED TEAL: 37 REPORTERS REPORTING. EARLY SOUTH 3-27 DAKOTA ETSJ 3-27 GOODHUE VJ 3-24 WABASHA DMJ EARLY NORTH 3-18 MARSHALL (64) AVR 5-27 CROW VING TSI 4-28 GRANT KREJ PEAK 5-23 MARSHALL (133) AVR 4-28 LYON (18) HCK ST. LOUIS (284) JCG.

AMERICAN WIDGEON: 26 REPORTERS REPORTING. EARLY SOUTH 3-28 HOUSTON FELJ 3-24 HENNEPIN DRJ 3-24 HENNEPIN VJ EARLY NORTH 3-27 MARSHALL AVR 4-21 ST. LOUIS JCG 4-17 AITKIN CEPJ PEAK 4-23 MARSHALL (118) AVR 5-27 ST. LOUIS (26) JCG.

SNOVLEER: 29 REPORTERS REPORTING. EARLY SOUTH 3-14 LYON HCK 3-24 DAKOTA DRJ 3-24 DAKOTA VJ EARLY NORTH 3-25 GRANT KREJ 3-25 BECKER TVR 4-28 GOODHUE HSI PEAK 4-23 MARSHALL (133) AVR 4-28 LYON (18) HCK.

WOOD DUCK: 45 REPORTERS REPORTING. EARLY NORTH 3-28 BECKER TVR 3-22 MARSHALL AVR 3-25 CROW VING TSI PEAK 5-23 MARSHALL (190) AVR 4-38 ST. LOUIS (1) JCG.

REDHEAD: 31 REPORTERS REPORTING. EARLY SOUTH 3-12 RICE OAR 3-13 HENNEPIN DRJ 3-13 DAKOTA RBJ EARLY NORTH 3-25 MORRISON LSR 3-28 BECKER TVR 3-31 MORRISON BAJ PEAK 4-23 MARSHALL (257) AVR 3-25 NICOLLET (58) DR.

RING-NECKED DUCK: 35 REPORTERS REPORTING. EARLY SOUTH 3-26 HOUSTON FELJ 3-18 WABASHA DMJ 3-11 VIREONA KREJ EARLY NORTH 3-24 MORRISON LSR 3-24 GRANT KREJ 3-27 BECKER TVR PEAK 4-23 MARSHALL (428) AVR 4-27 SHERBURNE (28) SVR.

CANVASBACK: 31 REPORTERS REPORTING. EARLY SOUTH 3-28 WABASHA JAB 3-18 HOUSTON FELJ 3-11 HENNEPIN VJ EARLY NORTH 4-23 AITKIN CEPJ 4-23 MARSHALL AVR 4-15 CROW VING TSI PEAK 3-28 WABASHA (728) JAB 3-26 WABASHA (38) RZ.

GREATER SCAUP: 12 REPORTERS REPORTING. EARLY SOUTH 3-26 HOUSTON FELJ 3-28 COTTONWOOD LRU 3-24 LYON HCK EARLY NORTH 3-25 GRANT KREJ 3-28 ST. LOUIS JCG 3-28 CROW VING TSI PEAK 4-22 LYON (1) HJN 4-15 CROW VING (3) TS.

LESSER SCAUP: 37 REPORTERS REPORTING. EARLY SOUTH 3-26 HOUSTON FELJ 3-28 WABASHA JAB 3-28 DAKOTA RBJ EARLY NORTH 3-25 ITAGA HSI 3-22 MARSHALL AVR 3-27 ST. LOUIS JCG PEAK 3-28 WABASHA (818) JAB 4-22 MARSHALL (728) AVR.

COMMON GOLDWING: 34 REPORTERS REPORTING. EARLY NORTH 3-22 ST. LOUIS JCG 3-16 MORRISON LSR 3-19 BECKER TVR PEAK 4-25 MARSHALL (174) AVR 3-28 HENNEPIN (18) JAB.

SUPPLEHEAD: 24 REPORTERS REPORTING. EARLY SOUTH 3-18 WABASHA DMJ 3-14 LYON HCK 3-14 DAKOTA VJ EARLY NORTH 3-21 ST. LOUIS JCG 3-24 MORRISON LSR 3-28 MARSHALL AVR PEAK 4-23 MARSHALL (69) AVR 3-28 WABASHA (24) JAB LATE SOUTH 5-28 HENNEPIN OLJ 5-12 LAC GUI PARLE HSI LATE NORTH 5-17 ST. LOUIS JCG.

OLDSQUAW: 6 REPORTERS REPORTING 2 INDIVIDUALS. 3-22 ST. LOUIS (1) JCG 3-23 COOK (4) DRJ 3-24 COOK (2) RBJ 3-18 WABASHA (1) JAB 5-28 ST. LOUIS (1) REJ 5-27 ST. LOUIS (8) JG.

WHITE-WINGED SOOTY: 6 REPORTERS REPORTING 6 INDIVIDUALS. 3-29 ST. LOUIS (4) TSI 5-27 ST. LOUIS (18) JCG 5-27 ST. LOUIS (18) JCG 5-18 ST. LOUIS (1) JG 5-19 ST. LOUIS (14) JCG 5-21 ST. LOUIS (5) JAB.

SURF SCOTER: 3 REPORTERS REPORTING 9 INDIVIDUALS. 5-17 ST. LOUIS (3) JCG 5-17 ST. LOUIS (3) JCG 5-21 ST. LOUIS (3) JAB.

MUDY DUCK: 19 REPORTERS REPORTING. EARLY SOUTH 3-15 LYON HCK 3-10 RICE OAR 3-19 WABASHA DMJ EARLY NORTH 3-25 MARSHALL AVR 4-17 ST. LOUIS JCG 4-21 ITAGA HSI PEAK 5-18 KANDITOH (75) BAJ 4-24 LYON (7) HCK LATE SOUTH 5-28 ST. LOUIS JCG.

HOODED MERRIMAN: 25 REPORTERS REPORTING. EARLY SOUTH 3-28 WABASHA DMJ 3-14 HENNEPIN PFJ 3-16 SHERBURNE SVR EARLY NORTH 3-27 AITKIN CEPJ 3-28 ST. LOUIS JCG 3-31 MORRISON LSR PEAK 4-23 MARSHALL (158) AVR 5-27 ST. LOUIS (28) JCG.

COMMON MERRIMAN: 31 REPORTERS REPORTING. EARLY NORTH 3-22 ST. LOUIS JCG 3-22 ST. LOUIS 3-22 ST. LOUIS 3-24 COOK REJ PEAK 3-15 WABASHA (358) JAB 3-15 WABASHA (28) DM.

RED-BELLIED MERRIMAN: 27 REPORTERS REPORTING. EARLY SOUTH 3-13 DAKOTA RBJ 3-15 LESLIE BAJ 3-15 WABASHA DMJ EARLY NORTH 3-24 GRANT KREJ 4-27 GASS HSI 4-18 ST. LOUIS JCG PEAK 4-25 ST. LOUIS (18) JCG 4-27 HENNEPIN (28) DR.

TURKEY VULTURE: 21 REPORTERS REPORTING. EARLY SOUTH 3-15 WABASHA JAB 3-18 GASS HSI 4-27 WABASHA DMJ EARLY NORTH 3-19 AITKIN CEPJ 4-16 ST. LOUIS JCG 4-18 ITAGA HSI PEAK 4-27 GOODHUE (17) JAB.

WOUNDING Doves: 41 REPORTERS REPORTING. EARLY NORTH 3-28 MARSHALL AVRZ 3-24 CROW VING TSI 3-28 PINE JOE PEAK 5-26 NICOLLET (48) GUNJ 3-21 STEARNS (18) KC.

YELLOW-BILLED CUCKOO: 9 REPORTERS REPORTING. EARLY SOUTH 5-19 STEARNS HCKJ 5-19 STEARNS KREJ 5-21 COTTONWOOD LAF.

BLACK-BILLED CUCKOO: 14 REPORTERS REPORTING. EARLY SOUTH 5-19 STEARNS HCKJ 5-19 STEARNS KREJ 5-19 HENNEPIN RE.

SNOW OWL: 4 REPORTERS REPORTING. LATE SOUTH 4-26 ST. LOUIS JGJ 4-28 MARSHALL AVR.

HAWK OWL: 8 REPORTERS REPORTING 11 INDIVIDUALS. 3-13 AITKIN (1) TSI 5-21 ST. LOUIS (18) JAB.

LOW-EARED OWL: 8 REPORTERS REPORTING. EARLY SOUTH 4-14 MCLEOD DBJ EARLY NORTH 4-18 ST. LOUIS JG.

SAW-WHET G.W.L: 3 REPORTERS REPORTING. EARLY SOUTH 5-19 WRIGHT BANJ EARLY NORTH 5-19 CROW VING TSI 4-19 ROSEAU KRE.

WIFE-POOR-WILL: 9 REPORTERS REPORTING. EARLY SOUTH 5-26 HOUSTON FELJ 5-10 SHERBURNE SVWJ 5-18 RICE KWJ EARLY NORTH 5-17 ST. LOUIS JGJ 5-21 MARSHALL SM.

COMMON NIGHTHAWK: 38 REPORTERS REPORTING. EARLY SOUTH 4-23 RANSEY JAB 5-29 HOUSTON FELJ 5-18 GOODRUE DBJ EARLY NORTH 5-28 MARSHALL AVR 5-25 MARSHALL SM 5-25 MORRISON LSRJ PEAK 5-25 STEARNS (28) HOK.

CHIMNEY SWIFT: 36 REPORTERS REPORTING. EARLY SOUTH 4-24 HOUSTON FELJ 4-24 HENNEPIN DBJ 4-29 RENWILLER RBJ EARLY NORTH 3-28 ST. LOUIS JGJ 5-21 MORRISON LSRJ 5-28 MORRISON LSRJ PEAK 5-28 ST. LOUIS (58) JGJ 5-24 COTTONWOOD (31) LAF.

MUFT-THROATED HUMMINGBIRD: 18 REPORTERS REPORTING. EARLY SOUTH 5-12 HOUSTON FELJ 5-18 NICOLLET GUNJ 5-14 STEARNS HMKJ EARLY NORTH 5-12 AITKIN CEPJ 5-13 CROW VING TSI 5-16 ST. LOUIS LTN.

MELTED KINGFISHER: 48 REPORTERS REPORTING. EARLY SOUTH 3-23 NICOLLET GUNJ 3-24 POPE WJ 3-17 WABASIA DBJ EARLY NORTH 3-29 MORRISON LSRJ 4-15 CROW VING TSI 4-17 AITKIN CEP.

YELLOW-SHAPED FLICKER: 45 REPORTERS REPORTING. EARLY SOUTH 3-23 RICE GANJ 3-24 LAC QUI PARLE AFEJ 3-24 COTTONWOOD LAFJ EARLY NORTH 3-24 GRANT KREJ 3-16 ST. LOUIS JGJ 3-25 AITKIN GUNJ PEAK 4-26 ST. LOUIS (58) JGJ 4-14 NICOLLET (33) GUNJ.

RED-HEADED WOODPECKER: 35 REPORTERS REPORTING. EARLY SOUTH 3-21 STEARNS HMKJ 3-29 SHERBURNE SVWJ 3-23 WASHINGTON VMLJ EARLY NORTH 3-18 HILLE LACS RBJJ 3-28 MORRISON LSRJ 5-25 ST. LOUIS HMKJ PEAK 5-21 STEARNS (4) KC.

YELLOW-BELLIED SAPSUCKER: 48 REPORTERS REPORTING. EARLY SOUTH 4-21 SWIFT HNJ 4-28 HENNEPIN DBJ 4-29 COTTONWOOD LRFJ EARLY NORTH 3-25 CROW VING TSI 4-14 MORRISON LSRJ 4-14 HILLE LACS RBJJ PEAK 4-17 STEELE (6) LR.

MAINT WOODPECKER: 23 REPORTERS REPORTING. BIRDS WERE REPORTED FROM THE FOLLOWING COUNTIES: HILLE LACS, RENWILLER, GASS, AITKIN, WRIGHT BANC, COTTONWOOD, STEARNS, LAC QUI PARLE, MORRISON, RICE, RANSEY, ANOKA, CLAY, ST. LOUIS, NICOLLET, SWIFT, OLNSTEAD, ISANTI, ISANTI, ISANTI, ISANTI, ISANTI, ISANTI, ISANTI, ISANTI.

EASTERN KINGBIRD: 34 REPORTERS REPORTING. EARLY SOUTH 4-29 SIBLEY JABJ 5-25 FILLMORE RBJJ 5-26 SHERBURNE SVWJ EARLY NORTH 5-18 AITKIN CEPJ 5-26 MORRISON LSRJ 5-18 CLAY ETSJ PEAK 5-26 LAC QUI PARLE (6) AFE.

GREAT CRESTED FLYCATCHER: 36 REPORTERS REPORTING. EARLY SOUTH 5-23 SHERBURNE SVWJ 5-29 HENNEPIN PTJ 5-11 OLNSTEAD HMKJ EARLY NORTH 5-19 AITKIN CEPJ 5-19 ST. LOUIS HMKJ 5-28 ITASCA NS.

EASTERN PHOENIX: 36 REPORTERS REPORTING. EARLY SOUTH 3-28 HOUSTON FELJ 3-24 SHERBURNE SVWJ 4-26 WATSON WAFJ EARLY NORTH 4-21 CROW VING TSI 4-16 ST. LOUIS JGJ 4-21 ST. LOUIS HMKJ.

YELLOW-BELLIED FLYCATCHER: 18 REPORTERS REPORTING. EARLY SOUTH 5-26 HENNEPIN GUNJ 5-29 COTTONWOOD LAFJ 5-18 HENNEPIN GUNJ EARLY NORTH 5-24 ST. LOUIS GUNJ 5-26 ST. LOUIS JGJ 5-18 CROW VING TSI PEAK 5-25 ANOKA (37) SC.

TRAIL'S FLYCATCHER: 14 REPORTERS REPORTING. EARLY SOUTH 4-18 WASHINGTON VMLJ 4-29 COTTONWOOD LRFJ 5-27 HENNEPIN ETSJ EARLY NORTH 5-25 MORRISON LSRJ 5-29 AITKIN TSI 5-29 CLEARWATER RDB.

LEAST FLYCATCHER: 36 REPORTERS REPORTING. EARLY SOUTH 4-24 HOUSTON FELJ 4-29 MORRISON LSRJ 4-28 NICOLLET GUNJ EARLY NORTH 5-24 ST. LOUIS LTNJ 5-26 GRANT KREJ 5-11 MORRISON LSR.

EASTERN WOOD PEVEE: 24 REPORTERS REPORTING. EARLY SOUTH 4-14 LAC QUI PARLE AFEJ 4-28 COTTONWOOD LRFJ 4-28 LAC QUI PARLE HCKJ EARLY NORTH 5-26 GRANT KREJ 5-23 CASS AFSJ 5-26 LAC CLYF.

OLIVE-SIDED FLYCATCHER: 14 REPORTERS REPORTING. EARLY SOUTH 5-23 NICOLLET GUNJ 5-29 HENNEPIN RBJJ 5-18 GOODRUE DBJ EARLY NORTH 5-28 ITASCA DBJ 6-28 ITASCA NS.

HORNED LARK: 21 REPORTERS REPORTING. EARLY SOUTH 3-21 CLAY LOFJ 3-23 AITKIN TSI 3-23 AITKIN RZJ PEAK 3-27 CLAY (3) LCF.

TREE SWALLOW: 28 REPORTERS REPORTING. EARLY SOUTH 3-27 WINONA FELJ 3-28 WABASIA DMVJ 3-31 HENNEPIN VMLJ EARLY NORTH 3-31 MORRISON BANJ 4-15 CROW VING TSI 4-15 MORRISON LSRJ PEAK 5-16 ST. LOUIS (58) JGJ 4-29 LESBUR (33) GUNJ.

BANK SWALLOW: 25 REPORTERS REPORTING. EARLY SOUTH 3-13 WABASIA DMVJ 4-21 SIBLEY RBJJ 4-21 GOODRUE DBJ EARLY NORTH 5-18 MORRISON LSRJ 5-13 CROW VING TSI 5-17 ST. LOUIS HMKJ PEAK 5-29 DAKOTA (28) VJL 5-18 NICOLLET (18) GUNJ.

ROBIN-WINGED SWALLOW: 23 REPORTERS REPORTING. EARLY SOUTH 4-24 NICOLLET GUNJ 4-24 STEARNS HMKJ 4-28 LAC QUI PARLE GUNJ EARLY NORTH 5-24 MORRISON LSRJ 5-27 CROW VING TSI 5-18 ST. LOUIS JGJ PEAK 5-14 ANOKA (18) SCJ 5-21 STEARNS (8) KC.

BARN SWALLOW: 31 REPORTERS REPORTING. EARLY SOUTH 4-18 SHERBURNE SVWJ 4-17 HENNEPIN PTJ 4-21 MURRAY ADJ EARLY NORTH 4-21 TRAVERSE RBJJ 4-28 MORRISON LSRJ 5-27 CROW VING TSI PEAK 4-28 LYON (16) HCKJ 5-23 WASHINGTON (28) VML.

CLYF SWALLOW: 25 REPORTERS REPORTING. EARLY SOUTH 4-26 SHERBURNE SVWJ 4-28 LYON HCKJ 4-28 LYON GUNJ EARLY NORTH 4-19 MARSHALL KREJ 4-23 CASS HMKJ 5-26 MARSHALL HMKJ 5-25 ST. LOUIS (28) JGJ 5-19 ITASCA (15) 5) DB.

PIPER MARTIN: 28 REPORTERS REPORTING. EARLY SOUTH 3-28 WABASIA DMVJ 3-31 WINONA FELJ 4-23 HENNEPIN VMLJ EARLY NORTH 4-18 CASS HMKJ 4-17 BECKER TRJ 4-17 ST. LOUIS HMKJ PEAK 5-26 LYON (48) HCKJ 4-29 LAC QUI PARLE (35) AFE.

BLUE JAY: 81 REPORTERS REPORTING. PEAK 5-15 ST. LOUIS (158) JGJ 5-28 COTTONWOOD (28) LAF.

BLACK-BILLED MAGPIE: 4 REPORTERS REPORTING 4 INDIVIDUALS. 3-16 SCOTT (1) KREJ 3-16 COTTONWOOD (1) LAFJ 3-16 GRANT (1) KREJ 5-28 CHISAGO (1) KRE.

COMMON CROW: 28 REPORTERS REPORTING. EARLY NORTH 3-21 MORRISON LSRJ 3-21 CASS AFSJ 3-28 ST. LOUIS JGJ PEAK 3-30 MARSHALL (187) AVRZ 3-24 DAKOTA (108) VL.

BOREAL CHICKADEE: 4 REPORTERS REPORTING 5 INDIVIDUALS. 3-21 HILLE LACS (1) WJ 3-14 RANSEY (1) REMJ 3-18 HILLE LACS (1) WJ 3-21 ITASCA (8) DB.

WHITE-BREADED NUTHATCH: 23 REPORTERS REPORTING. EARLY NORTH 4-15 ST. LOUIS JGJ PEAK 4-11 COTTONWOOD (3) LAF.

RED-BREADED NUTHATCH: 15 REPORTERS REPORTING.

BROWN CREEPER: 26 REPORTERS REPORTING. EARLY NORTH 3-27 CROW VING TSI 3-21 MARSHALL AVR 4-18 MORRISON LSRJ PEAK 5-28 ST. LOUIS (5) JGJ 3-24 CROW VING (4) TS.

HOUSE WREN: 39 REPORTERS REPORTING. EARLY SOUTH 4-28 SHERBURNE SVWJ 4-28 MURRAY ADJ 4-28 LAC QUI PARLE AFEJ EARLY NORTH 3-27 CROW VING TSI 5-26 LAC CLYF 5-26 GRANT KREJ PEAK 5-23 NICOLLET (32) GUNJ 5-26 LAC QUI PARLE (6) AFE.

WINTER WREN: 11 REPORTERS REPORTING. EARLY SOUTH 4-18 HENNEPIN ETSJ 4-19 HENNEPIN DBJ 4-27 HENNEPIN RBJJ EARLY NORTH 4-17 ITASCA VMLJ 4-28 ST. LOUIS HMKJ 4-28 COOK JGJ.

LONG-BILLED MARSH WREN: 9 REPORTERS REPORTING. EARLY SOUTH 5-14 HUSTON FELJ 5-14 NICOLLET RBJJ 5-15 RANSEY REMJ EARLY NORTH 5-28 MARSHALL AVR.

SHORT-BILLED MARSH WREN: 18 REPORTERS REPORTING. EARLY SOUTH 5-26 LYON HCKJ 5-12 BIG STONE BANJ 5-14 NICOLLET RBJJ EARLY NORTH 5-28 ITASCA HMKJ 5-28 ST. LOUIS JGJ 5-29 CLEARWATER RDB.

CATBIRD: 48 REPORTERS REPORTING. EARLY SOUTH 5-25 HOUSTON FELJ 5-25 HENNEPIN GUNJ 5-25 POPE WJ EARLY NORTH 5-19 BLUE EARTH LSRJ 5-28 MARSHALL SM 5-28 ST. LOUIS HMKJ PEAK 5-28 COTTONWOOD (12) LAF.

BROWN THRASHER: 45 REPORTERS REPORTING. EARLY SOUTH 3-11 COTTONWOOD LAFJ 3-13 ANOKA SCJ 3-28 SHERBURNE SVWJ EARLY NORTH 3-27 ST. LOUIS JGJ 5-21 CROW VING TSI 5-26 CLEARWATER RDB PEAK 5-28 STEARNS (4) HCKJ 5-13 COTTONWOOD (4) LAF.

ROBIN: 44 REPORTERS REPORTING. EARLY SOUTH 3-23 WASHINGTON VMLJ 3-24 RICE GANJ 3-24 HENNEPIN RBJJ EARLY NORTH 3-29 CLAY LOFJ 3-29 GRANT KREJ 3-12 MARSHALL AVR PEAK 3-19 RICE (58) OARJ 4-15 LYON (38) HCK.

WOOD THRUSH: 28 REPORTERS REPORTING. EARLY SOUTH 4-17 WASHINGTON VMLJ 5-24 NICOLLET GUNJ 5-28 HOUSTON FELJ EARLY NORTH 4-16 ST. LOUIS LTNJ 5-19 ITASCA HMKJ 5-28 MORRISON LSR.

HERMIT THRUSH: 38 REPORTERS REPORTING. EARLY SOUTH 3-28 HENNEPIN DBJ 4-27 MURRAY ADJ 4-12 HOUSTON FELJ EARLY NORTH 4-21 CROW VING TSI 4-19 MARSHALL KREJ 4-27 ST. LOUIS JGJ PEAK 3-27 ST. LOUIS (25) JGJ.

SWAINSON'S THRUSH: 27 REPORTERS REPORTING. EARLY SOUTH 4-14 ANOKA SCJ 4-16 COTTONWOOD LAFJ 4-28 LESBUR GUNJ EARLY NORTH 5-26 CLAY LOFJ 5-26 GRANT KREJ 3-12 MORRISON LSRJ PEAK 5-26 ST. LOUIS (28) JGJ 5-28 COTTONWOOD (4) LAF.

GRAY-CHEEKED THRUSH: 25 REPORTERS REPORTING. EARLY SOUTH 4-16 NICOLLET GUNJ 5-26 HENNEPIN DBJ 5-26 WRIGHT BANJ EARLY NORTH 3-26 CLAY LOFJ 5-26 GRANT KREJ 5-17 MORRISON LSRJ LATE SOUTH 5-28 HENNEPIN VJL 5-28 HENNEPIN OLJ LATE NORTH 5-26 ST. LOUIS JGJ 5-28 ST. LOUIS CLJ.

VEERY: 38 REPORTERS REPORTING. EARLY SOUTH 4-18 HENNEPIN SVWJ 4-26 SHERBURNE SVWJ 5-28 HENNEPIN VMLJ EARLY NORTH 5-26 CLAY LOFJ 5-27 ST. LOUIS JGJ 5-12 CROW VING TSI PEAK 5-26 ST. LOUIS (28) JGJ.

EASTERN BLUEBIRD: 39 REPORTERS REPORTING. EARLY SOUTH 3-18 RICE GANJ 3-13 HOUSTON FELJ 3-12 SHERBURNE SVWJ EARLY NORTH 3-21 CROW VING TSI 3-22 BECKER TRJ 3-28 AITKIN CEPJ PEAK 3-28 STEARNS (8) HCKJ 3-21 LAC QUI PARLE (8) DB.

GOLDEN-CROWNED KINGLET: 27 REPORTERS REPORTING. EARLY SOUTH 3-24 HOUSTON FELJ 3-26 ANOKA SCJ 3-26 COTTONWOOD LAFJ EARLY NORTH 3-31 ITASCA DBJ 4-26 CROW VING TSI 4-28 COOK JGJ PEAK 4-18 HENNEPIN (18) VJL 4-28 COOK (18) JGJ.

ROBY-CROWNED KINGLET: 43 REPORTERS REPORTING. EARLY SOUTH 4-27 HOUSTON FELJ 4-28 HENNEPIN GUNJ 4-14 LESBUR GUNJ EARLY NORTH 4-18 ITASCA VMLJ 4-21 ST. LOUIS HMKJ 4-28 ST. LOUIS JGJ PEAK 5-26 HENNEPIN (56) ETSJ 5-28 ST. LOUIS (58) JGJ.

WATER PIPIT: 6 REPORTERS REPORTING. EARLY SOUTH 4-29 LYON HCKJ EARLY NORTH 5-26 ST. LOUIS CLJ 5-27 ST. LOUIS RZJ 5-28 ST. LOUIS DBJ PEAK 4-19 LYON (1) HCKJ LATE SOUTH 5-27 ST. LOUIS CLJ.

BOHEMIAN WYONER: 14 REPORTERS REPORTING. PEAK 3-18 WASHINGTON (75) VMLJ 3-25 HENNEPIN (58) PFJ LATE SOUTH 4-15 COTTONWOOD LRFJ 4-27 HENNEPIN CLM LATE NORTH 3-28 CROW VING TSI 3-14 HILLE LACS NS.

CEDAR WAXWING: 28 REPORTERS REPORTING. EARLY SOUTH 3-21 SWIFT HNJ 3-24 COTTONWOOD LAFJ 3-25 HENNEPIN PFJ EARLY NORTH 3-29 GRANT KREJ 4-21 ST. LOUIS JGJ 3-26 CLAY LOFJ PEAK 5-24 HENNEPIN (28) ETSJ 5-21 HENNEPIN (18) CKS.

NORTHERN SHRIKE: 13 REPORTERS REPORTING. LATE SOUTH 3-17 WABASIA DMVJ 3-27 DAKOTA VJL LATE NORTH 4-21 AITKIN TSI 3-29 ST. LOUIS JGJ.

LOGSKRAPER SHRIKE: 18 REPORTERS REPORTING. EARLY SOUTH 3-27 DAKOTA VJL 3-26 DAKOTA VJL 4-26 LYON HCKJ EARLY NORTH 5-21 AITKIN TSI 4-14 CASS HMKJ 5-21 MORRISON WML.

STARLING: 11 REPORTERS REPORTING.

YELLOW-THROATED VIREO: 15 REPORTERS REPORTING. EARLY SOUTH 5-26 SHERBURNE SVWJ 5-26 HENNEPIN DBJ 5-12 NICOLLET GUNJ EARLY NORTH 5-18 CROW VING TSI 5-19 CASS AFSJ 5-28 CLEARWATER RDB.

SOLITARY VIREO: 23 REPORTERS REPORTING. EARLY SOUTH 4-29 HENNEPIN DBJ 4-21 HENNEPIN DBJ 5-24 LYON HCKJ EARLY NORTH 5-26 GRANT KREJ 5-26 CLAY LOFJ.

RED-EYED VIREO: 38 REPORTERS REPORTING. EARLY SOUTH 5-12 GOODRUE DBJ 5-19 HOUSTON FELJ 5-17 OLNSTEAD HMKJ EARLY NORTH 5-26 ITASCA HMKJ 5-28 ANOKA SCJ 5-28 MORRISON LSRJ 5-28 MARSHALL HMKJ 5-25 ST. LOUIS (28) JGJ 5-19 ITASCA (18) VML.

PHILADELPHIA VIREO: 21 REPORTERS REPORTING. EARLY SOUTH 5-18 OLNSTEAD HMKJ 5-18 HENNEPIN GUNJ 5-19 STEARNS HMKJ EARLY NORTH 6-18 MORRISON LAF 5-28 ST. LOUIS JGJ PEAK 5-23 WASHINGTON (6) VML.

WARBLING VIREO: 38 REPORTERS REPORTING. EARLY SOUTH 4-24 OLNSTEAD HMKJ 5-25 HOUSTON FELJ 5-25 FILLMORE RBJJ EARLY NORTH 5-11 ITASCA HMKJ 5-15 GRANT KREJ 5-18 MORRISON LSR.

BLACK AND WHITE WARBLER: 35 REPORTERS REPORTING. EARLY SOUTH 4-89 COTTONWOOD LNJ 4-49 SHERBURN DRJ 4-89 LYON HCKJ EARLY NORTH 5-86 MORRISON LRSJ 5-18 HENNEPIN VLIJ 5-19 ST. LOUIS JCGJ 5-89 CLAY LCFJ PEAK 5-19 STEARNS (8) HCKJ 5-19 STEARNS (8) HCKJ.

GOLDEN-VINDED WARBLER: 16 REPORTERS REPORTING. EARLY SOUTH 5-89 GOODKUE VLIJ 5-13 HENNEPIN SOJ 5-16 WICOLLET GJWJ EARLY NORTH 5-88 ITASCA DBJ 5-83 CLEARWATER RCDJ 5-88 ITASCA NSJ.

TENNESSEE WARBLER: 33 REPORTERS REPORTING. EARLY SOUTH 5-88 HENNEPIN VLIJ 5-89 LYON HCKJ EARLY NORTH 5-86 GRANT KREJ 5-14 ST. LOUIS JCGJ 5-18 CASE ABEJ PEAK 5-88 OTTERTAIL (18) HEEJ 5-86 OTTERTAIL (18) HCKJ LATE SOUTH 5-83 HENNEPIN KREJ 5-81 WASHINGTON WVLJ LATE NORTH 5-31 GRANT KREJ 5-88 ST. LOUIS ETS.

ORANGE-CROWNED WARBLER: 84 REPORTERS REPORTING. EARLY SOUTH 4-84 NICOLLET GJWJ 4-86 HENNEPIN ETSJ 4-89 LYON HCKJ EARLY NORTH 5-84 MORRISON LRSJ 5-86 CLAY LCFJ 5-86 GRANT KREJ PEAK 5-86 HENNEPIN (19) HCKJ 5-86 HENNEPIN (19) HCKJ LATE SOUTH 5-18 HENNEPIN VLIJ LATE NORTH 5-18 CLAY LCFJ.

NASHVILLE WARBLER: 34 REPORTERS REPORTING. EARLY SOUTH 4-87 CHESTNUT LRSJ 4-89 LYON HCKJ 4-89 LYON HCKJ EARLY NORTH 5-86 CLAY LCFJ 5-87 MORRISON LRSJ 5-18 ST. LOUIS JCGJ PEAK 5-83 WASHINGTON (86) WVLJ 5-86 ST. LOUIS (18) JCGJ.

PARULA WARBLER: 14 REPORTERS REPORTING. EARLY SOUTH 5-87 AMOKA SOJ 5-88 HENNEPIN ETSJ 5-88 HENNEPIN VLIJ EARLY NORTH 5-19 ST. LOUIS WJHJ 5-19 ITASCA DBJ 5-88 ITASCA NSJ.

YELLOW WARBLER: 48 REPORTERS REPORTING. EARLY SOUTH 5-88 HOUSTON FELJ 5-88 HENNEPIN PFJ 5-88 GOODKUE HNJJ EARLY NORTH 5-86 ITASCA NSJ 5-86 GRANT KREJ 5-11 MORRISON LRSJ.

MAGNOLIA WARBLER: 33 REPORTERS REPORTING. EARLY SOUTH 4-26 WASHINGTON WVLJ 5-83 SHERBURN ETSJ 5-85 HENNEPIN PFJ EARLY NORTH 5-86 GRANT KREJ 5-18 MARSHALL SWJ 5-18 MORRISON LRSJ PEAK 5-86 ST. LOUIS (48) JCGJ.

CAPE MAY WARBLER: 18 REPORTERS REPORTING. EARLY SOUTH 5-86 HENNEPIN WJWJ 5-13 HANSEY REJ 5-14 NICOLLET GJWJ EARLY NORTH 5-18 ST. LOUIS JCGJ 5-19 MARSHALL SWJ 5-83 CLEARWATER RCDJ.

BLACK-THROATED BLUE WARBLER: 2 REPORTERS REPORTING. EARLY NORTH 5-88 ST. LOUIS DRJ 5-88 ST. LOUIS ETS.

MYRTLE WARBLER: 31 REPORTERS REPORTING. EARLY SOUTH 4-14 HENNEPIN PFJ 4-14 LAC GUI PARLE AFEJ 4-14 STEARNS WJWJ EARLY NORTH 4-86 ST. LOUIS VLI 4-18 AITKIN TSIJ 4-16 PINE WJHJ PEAK 5-10 HENNEPIN (88) LNJ 4-89 LYON (45) HCKJ.

BLACK-THROATED GREEN WARBLER: 25 REPORTERS REPORTING. EARLY SOUTH 4-29 WICOLLET GJWJ 5-13 MORRISON LRSJ 5-84 WASHINGTON WVLJ EARLY NORTH 5-88 CLEARWATER RCDJ 5-88 ST. LOUIS JCGJ 5-19 ST. LOUIS WJHJ.

BLACKBURNIAN WARBLER: 23 REPORTERS REPORTING. EARLY SOUTH 5-85 LYON FELJ 5-85 GOODKUE DRJ 5-85 GOODKUE HNJJ EARLY NORTH 5-13 ST. LOUIS JCGJ 5-19 ITASCA NSJ 5-19 ST. LOUIS WJHJ.

CHESTNUT-SIDED WARBLER: 32 REPORTERS REPORTING. EARLY SOUTH 5-88 HENNEPIN ETSJ 5-11 ISANTI CUI 5-13 HENNEPIN SOJ EARLY NORTH 5-18 CLEARWATER RCDJ 5-19 ST. LOUIS WJHJ 5-19 ITASCA DBJ PEAK 5-88 AMOKA (8) SOJ 5-88 ST. LOUIS (6) JCGJ.

BEAN-BREASTED WARBLER: 16 REPORTERS REPORTING. EARLY SOUTH 5-16 NICOLLET GJWJ 5-19 HANSEY REJ 5-19 STEARNS HCKJ EARLY NORTH 5-14 ST. LOUIS REJ 5-85 ST. LOUIS CLMJJ 5-87 ST. LOUIS WJHJ PEAK 5-85 AMOKA (3) SOJ LATE SOUTH 5-86 AMOKA SOJ LATE NORTH 5-89 ST. LOUIS JCGJ 5-88 ST. LOUIS ETS.

BLACKPOCK WARBLER: 36 REPORTERS REPORTING. EARLY SOUTH 5-87 LAC GUI PARLE AFEJ 3-18 COTTONWOOD LNJ 5-11 HENNEPIN CLMJJ EARLY NORTH 5-85 GRANT KREJ 5-18 MARSHALL SWJ 5-83 CLAY LCFJ PEAK 5-83 WASHINGTON (158) WVLJ LATE SOUTH 5-38 HENNEPIN CLMJJ 5-87 HENNEPIN VLI LATE NORTH 5-86 ST. LOUIS JCGJ 5-88 BLAY LCFJ.

PINE WARBLER: 9 REPORTERS REPORTING. EARLY SOUTH 4-88 OLNEY LRSJ 5-85 WASHINGTON WVLJ 5-85 HENNEPIN ETSJ EARLY NORTH 4-88 HILLE LAC NJJ 5-89 CLEARWATER RCDJ 5-13 ITASCA NSJ.

PALM WARBLER: 35 REPORTERS REPORTING. EARLY SOUTH 4-88 COTTONWOOD LNJ 4-24 HENNEPIN DRJ 4-88 OLNEY LRSJ EARLY NORTH 5-85 BELTFRAMJ 5-86 ST. LOUIS WJHJ 5-86 CLAY LCFJ LATE SOUTH 5-19 AMOKA SOJ 5-17 WABASHA DWJ LATE NORTH 5-89 ST. LOUIS JCGJ 5-88 ST. LOUIS ETS.

OWSBIRD: 37 REPORTERS REPORTING. EARLY SOUTH 4-85 LAC GUI PARLE AFEJ 4-89 NICOLLET GJWJ 5-85 DAKOTA DBJ EARLY NORTH 5-86 CROW WING TSIJ 5-87 ST. LOUIS JCGJ 5-17 CASE ABEJ PEAK 5-86 ST. LOUIS (38) JCGJ 5-17 HENNEPIN (9) DBJ.

NORTHERN WATERTHRUSH: 24 REPORTERS REPORTING. EARLY SOUTH 4-28 LENEHR GJWJ 5-84 HENNEPIN ETSJ 5-85 DAKOTA DBJ EARLY NORTH 4-17 ITASCA WVLJ 3-87 ST. LOUIS JCGJ 5-18 MORRISON LRSJ PEAK 5-85 HENNEPIN (6) ETS.

CONNELLCUT WARBLER: 6 REPORTERS REPORTING. EARLY SOUTH 5-88 WASHINGTON WVLJ 5-83 HENNEPIN ETSJ 5-89 HENNEPIN VLI EARLY NORTH 5-14 HILLE LAC NJJ 5-31 PINE JCGJ.

NOURNING WARBLER: 27 REPORTERS REPORTING. EARLY SOUTH 5-19 STEARNS HCKJ 5-19 STEARNS HCKJ 5-19 STEARNS HCKJ EARLY NORTH 5-18 MORRISON LRSJ 5-88 ST. LOUIS DRJ 5-84 CLEARWATER RCDJ.

YELLOWTHROAT: 41 REPORTERS REPORTING. EARLY SOUTH 5-84 HURRAY AKJ 5-85 STEARNS HCKJ 5-86 LAC GUI PARLE AFEJ EARLY NORTH 5-18 MORRISON LRSJ 5-19 AITKIN CEPIJ 5-28 MARSHALL SWJ.

WILSON'S WARBLER: 31 REPORTERS REPORTING. EARLY SOUTH 5-85 GOODKUE DBJ 5-85 GOODKUE DRJ 5-85 FILLMORE HNJJ EARLY NORTH 5-18 MORRISON LRSJ 5-19 CLAY LCFJ 5-86 ST. LOUIS JCGJ PEAK 5-83 WASHINGTON (388) WVLJ LATE SOUTH 5-89 HENNEPIN VLIJ 5-86 AMOKA SOJ LATE NORTH 5-89 ST. LOUIS JCGJ 5-88 ST. LOUIS ETS.

CANADA WARBLER: 42 REPORTERS REPORTING. EARLY SOUTH 5-16 NICOLLET GJWJ 5-17 HENNEPIN CLMJJ 5-19 STEARNS HCKJ EARLY NORTH 5-19 ST. LOUIS WJHJ 5-84 ST. LOUIS JCGJ 5-85 MORRISON LRSJ PEAK 5-86 ST. LOUIS (18) DLN.

AMERICAN REDSTART: 44 REPORTERS REPORTING. EARLY SOUTH 5-89 SHERBURN SWJ 5-88 HENNEPIN DRJ 5-87 HENNEPIN CLMJJ EARLY NORTH 5-13 MARSHALL SWJ 5-15 CROW WING TSIJ 5-18 MORRISON LRSJ.

HOUSE SPARROW: 7 REPORTERS REPORTING.

BOBOLINK: 33 REPORTERS REPORTING. EARLY SOUTH 4-89 OTTERTAIL HCKJ 5-88 FILLMORE DRJ 5-85 FILLMORE HNJJ EARLY NORTH 5-14 MARSHALL SWJ 5-14 ST. LOUIS JCGJ 5-18 AITKIN CEPIJ PEAK 5-88 WASHINGTON (88) WVLJ 5-88 LYON (8) HCKJ.

EASTERN MEADOWLARK: 27 REPORTERS REPORTING. EARLY SOUTH 3-87 COTTONWOOD LNJ 3-88 HURRAY AKJ 3-89 WATSON WJWJ EARLY NORTH 3-18 AITKIN CEPIJ 3-83 CROW WING TSIJ 3-31 ITASCA NSJ PEAK 3-19 ITASCA (8) DBJ.

WESTERN MEADOWLARK: 33 REPORTERS REPORTING. EARLY SOUTH 3-88 COTTONWOOD LNJ 3-88 HENNEPIN VLIJ 3-89 SWIFT HNJ EARLY NORTH 3-18 GRANT KREJ 3-13 MORRISON LRSJ 3-14 CLEARWATER RCDJ PEAK 3-13 COTTONWOOD (19) LAFJ 3-29 WABASHA (8) DWJ.

YELLOW-HEADED BLACKBIRD: 36 REPORTERS REPORTING. EARLY SOUTH 4-81 HENNEPIN REJ 4-14 HENNEPIN HNJJ 4-18 HENNEPIN CLMJJ EARLY NORTH 3-81 MARSHALL SWJ 4-18 GRANT KREJ 4-88 WILKIN HNJ PEAK 3-18 LYON (488) HCKJ 5-18 LYON (488) HCKJ.

RED-WINGED BLACKBIRD: 48 REPORTERS REPORTING. PEAK 3-81 WABASHA (888) DWJ 4-14 LYON (188) HCKJ.

BALTIMORE ORIOLE: 45 REPORTERS REPORTING. EARLY SOUTH 3-88 HOUSTON FELJ 5-85 WASHINGTON WVLJ 5-85 POPE VLIJ EARLY NORTH 3-88 GDF VIRE TSIJ 5-89 AITKIN CEPIJ 5-89 CLAY LCFJ PEAK 5-88 STEARNS (8) HCKJ 3-19 WABASHA (6) DWJ.

RUSTY BLACKBIRD: 18 REPORTERS REPORTING. EARLY SOUTH 3-86 LYON HCKJ 3-86 LAC GUI PARLE AFEJ EARLY NORTH 4-87 AITKIN CEPIJ 5-26 ST. LOUIS CLMJJ PEAK 3-18 LYON (188) HCKJ 3-18 LYON (188) HCKJ.

FLYCAUGHTER: 84 REPORTERS REPORTING. EARLY SOUTH 3-31 WABASHA KREJ 3-18 RICE OARJ 3-19 AMOKA SOJ EARLY NORTH 5-88 ITASCA DBJ 4-86 CASE HNJJ 4-87 CLAY LCFJ.

COMMON GRACKLE: 46 REPORTERS REPORTING. EARLY NORTH 3-18 GRANT KREJ 3-13 CROW WING TSIJ 3-14 MORRISON LRSJ PEAK 4-19 LYON (888) HCKJ 4-19 LYON (258) HCKJ.

BROWN-HEADED COWBIRD: 41 REPORTERS REPORTING. EARLY SOUTH 5-88 NICOLLET GJWJ 3-19 FILLMORE HNJJ 3-19 WABASHA DWJ EARLY NORTH 3-31 ST. LOUIS JCGJ 5-88 GRANT KREJ 4-18 CROW WING TSIJ PEAK 4-88 ST. LOUIS (88) JCGJ 5-81 WABASHA (88) DWJ.

SCARLET TANGARD: 26 REPORTERS REPORTING. EARLY SOUTH 4-18 HENNEPIN REJ 5-19 SHERBURN ETSJ 5-19 STEARNS HCKJ EARLY NORTH 5-19 CASE ABEJ 5-88 ITASCA NSJ 5-83 ST. LOUIS WJHJ.

BROWN-BREASTED GOSWINKER: 44 REPORTERS REPORTING. EARLY NORTH 4-88 HENNEPIN DRJ 5-84 HENNEPIN WJWJ 5-85 HOUSTON FELJ EARLY NORTH 5-86 GRANT KREJ 5-87 CLAY LCFJ 5-18 ST. LOUIS JCGJ PEAK 5-86 LYON (488) HCKJ 5-88 LYON (14) HCKJ.

INDIGO BUNTING: 25 REPORTERS REPORTING. EARLY SOUTH 4-14 COTTONWOOD LRSJ 5-14 NICOLLET GJWJ 5-18 AMOKA SOJ EARLY NORTH 5-18 ST. LOUIS JCGJ 5-88 CLEARWATER RCDJ.

EVENING GROSBEAK: 81 REPORTERS REPORTING. PEAK 4-88 ST. LOUIS (88) LTMJ 3-88 HENNEPIN (12) PFJ.

PURPLE FINCH: 41 REPORTERS REPORTING. EARLY NORTH 3-84 GRANT KREJ 3-18 ST. LOUIS WJHJ 3-81 CASE HNJJ PEAK 4-89 LAC GUI PARLE (49) AFEJ 5-13 ST. LOUIS (38) JCGJ.

PINE GROSBEAK: 3 REPORTERS REPORTING.

HOARY REDPOLL: 1 REPORTERS REPORTING.

COMMON REDPOLL: 12 REPORTERS REPORTING. PEAK 3-15 CLEARWATER (188) RCDJ LATE SOUTH 3-18 HENNEPIN CLMJJ 3-25 WABASHA DWJ LATE NORTH 4-88 MORRISON LRSJ 3-86 CROW WING TSIJ.

AMERICAN GOLDFINCH: 31 REPORTERS REPORTING. EARLY NORTH 3-15 MORRISON LRSJ 5-15 AITKIN CEPIJ 5-18 CROW WING TSIJ PEAK 5-19 COTTONWOOD (188) LAFJ 3-85 WABASHA (8) DWJ.

RED CROSSBILL: 15 REPORTERS REPORTING 86 INDIVIDUALS. 3-81 GRANT (1) KREJ 3-81 ST. LOUIS (6) LTMJ 3-82 HENNEPIN (1) HNJJ 3-82 CASE (8) HNSJ 4-84 ST. LOUIS (1) JCGJ 4-89 HENNEPIN (1) VLI 4-14 HENNEPIN (1) HNJJ 5-89 HENNEPIN (5) HNJJ 5-18 SHERBURN (1) KREJ 5-13 HENNEPIN (1) CLMJJ 5-14 HENNEPIN (8) VLI 5-88 HENNEPIN (1) ETSJ 5-85 STEARNS (1) HNJJ 5-88 HENNEPIN (1) CLMJJ 5-31 GRANT (1) KREJ.

RUFOUS-SIDED TOWHEE: 18 REPORTERS REPORTING. EARLY SOUTH 4-38 NICOLLET WVLJ 5-81 HOUSTON FELJ 5-84 HENNEPIN ETSJ EARLY NORTH 5-86 CLAY LCFJ 5-86 CROW WING TSIJ 5-88 ST. LOUIS JCGJ.

SAVANNAH SPARROW: 28 REPORTERS REPORTING. EARLY SOUTH 4-16 OTTERTAIL KREJ 4-81 WABASHA DBJ 4-81 LAC GUI PARLE AFEJ EARLY NORTH 4-81 ST. LOUIS JCGJ 4-21 WILKIN HNJJ 4-26 ST. LOUIS JCGJ PEAK 5-86 LYON (85) HCKJ 5-86 LYON (85) HCKJ.

GRASSHOPPER SPARROW: 9 REPORTERS REPORTING. EARLY SOUTH 4-25 NICE OARJ 5-85 HENNEPIN ETSJ 5-86 LYON HCKJ EARLY NORTH 5-88 CLEARWATER RCDJ.

LECONTE'S SPARROW: 5 REPORTERS REPORTING. EARLY SOUTH 4-14 HCLMDD DBJ 5-19 STEARNS HCKJ 5-19 STEARNS HCKJ EARLY NORTH 5-88 AITKIN TSIJ PEAK 5-19 ITASCA (8) DBJ.

HENSLOW'S SPARROW: 1 REPORTERS REPORTING 1 INDIVIDUALS. 4-21 WABASHA (1) DBJ.

VEEPER SPARROW: 38 REPORTERS REPORTING. EARLY SOUTH 4-88 COTTONWOOD LAFJ 4-18 CARVER VLI 4-13 POPE VLI EARLY NORTH 3-13 AITKIN CEPIJ 4-18 GRANT KREJ 5-83 CLAY LCFJ PEAK 5-88 COTTONWOOD (7) LAFJ.

BLATE-COLORED JUNCO: 4 REPORTERS REPORTING. EARLY SOUTH 3-81 AMOKA SOJ 3-81 LAC GUI PARLE AFEJ 3-81 WABASHA DWJ EARLY NORTH 3-81 CLAY LCFJ 3-84 GRANT KREJ 3-18 CASE ABEJ LATE SOUTH 4-29 REVILLE HNJJ 4-29 REVILLE HNJJ LATE NORTH 4-88 CLAY LCFJ.

OREGON JUNCO: 16 REPORTERS REPORTING. EARLY SOUTH 3-81 SWIFT HNJ 3-81 WABASHA DWJ 3-88 COTTONWOOD LAFJ EARLY NORTH 3-14 CROW WING TSIJ 3-85 CLAY LCFJ 3-88 CASE ABEJ LATE SOUTH 4-29 REVILLE HNJJ 4-29 REVILLE HNJJ LATE NORTH 4-88 CLAY LCFJ.

TREE SPARROW: 44 REPORTERS REPORTING. EARLY SOUTH 3-81 AMOKA SOJ 3-81 WABASHA DWJ 3-88 HENNEPIN HCKJ EARLY NORTH 3-18 CLEARWATER RCDJ 3-17 GRANT KREJ 3-19 AITKIN CEPIJ PEAK 3-84 HENNEPIN (188) HCKJ 3-17 LAC GUI PARLE (88) AFEJ LATE SOUTH 5-81 HANSEY REJ 4-86 HENNEPIN VLI LATE NORTH 5-13 ST. LOUIS JCGJ 4-81 WILKIN HNJ.

CHIPPING SPARROW: 41 REPORTERS REPORTING. EARLY SOUTH 3-84 STEARNS HCKJ 4-85 SWIFT HNJ 4-18 HENNEPIN HCKJ EARLY NORTH 4-86 ST. LOUIS LTMJ 4-18 ITASCA NSJ 4-88 AITKIN CEPIJ PEAK 3-18 ST. LOUIS (48) JCGJ 5-86 LYON (35) HCKJ.

CLAY-COLORED SPARROW: 28 REPORTERS REPORTING. EARLY SOUTH 4-86 SWIFT HNJ 4-89 HURRAY AKJ 4-38 NICOLLET GJWJ EARLY NORTH 5-86 CLAY LCFJ 5-85 CLEARWATER RCDJ 5-85 ST. LOUIS JCGJ PEAK 3-86 CLEARWATER (88) RCDJ 5-86 LYON (18) HCKJ.

HARRIS' SPARROW: 27 REPORTERS REPORTING. EARLY SOUTH 3-18 HOUSTON AKJ 4-18 HCLMDD DBJ 4-18 HENNEPIN HCKJ EARLY NORTH 5-85 AITKIN CEPIJ 5-85 CLAY LCFJ 5-86 CASE HNJJ PEAK 5-86 LYON (88) HCKJ 5-86 CLAY (5) LCFJ LATE SOUTH 5-81 HURRAY AKJ 5-19 COTTONWOOD LAFJ LATE NORTH 5-86 CLAY LCFJ 5-88 ST. LOUIS JCGJ.

WHITE-CROWNED SPARROW: 87 REPORTERS REPORTING. EARLY SOUTH 4-29 MURRAY ADK; 4-29 KENWILLE RBJ; 5-22 NIGOLLET GBJ; EARLY NORTH 5-24 AITKIN GSP; 5-25 CLAY LCF; 5-26 CLEARWATER RCD; PEAK 5-17 LYON (38) HCNJ; 5-11 CLAY (3) LCF; LATE SOUTH 5-19 LYON HCNJ; 5-17 WABASHA DWH; LATE NORTH 5-22 ST. LOUIS JCG; 5-22 ST. LOUIS CLN.

WHITE-THROATED SPARROW: 43 REPORTERS REPORTING. EARLY SOUTH 3-22 HENNEPIN CLH; 4-10 WASHINGTON VVJ; 4-18 HENNEPIN PF; EARLY NORTH 4-24 MARSHALL AWR; 4-22 ST. LOUIS LTH; 4-18 ITASCA HSI; PEAK 4-29 LAC QUI PARLE (188) ATEJ; 5-26 LYON (28) HCNJ.

FOX SPARROW: 41 REPORTERS REPORTING. EARLY SOUTH 3-23 HENNEPIN DBJ; 4-29 LAC QUI PARLE ATEJ; 4-29 KENWILLE RBJ; EARLY NORTH 4-21 CLAY LCF; 5-22 CASE AEEJ; 3-28 ST. LOUIS HNJ; PEAK 4-17 SHERBURNE (28) SVR; 4-14 HENNEPIN (8) PF; LATE SOUTH 5-22 HENNEPIN PF; 4-19 HENNEPIN VJ; LATE NORTH 4-22 ST. LOUIS JCG; 4-12 CLAY LCF.

LINCOLN'S SPARROW: 17 REPORTERS REPORTING. EARLY SOUTH 3-17 HENNEPIN DBJ; 3-13 RICE GBJ; 3-15 SHERBURNE SVR; EARLY NORTH 3-22 CROW VING TSJ; 5-22 5-26 GRANT KREJ; 5-27 ST. LOUIS JCG; PEAK 5-26 CLAY (4) LCF; 5-18 ST. LOUIS (4) JCG; LATE SOUTH 5-22 HENNEPIN GJ; 5-25 ANOKA GJ; LATE NORTH 5-22 ST. LOUIS JCG; 5-22 ST. LOUIS ETS.

SWAMP SPARROW: 25 REPORTERS REPORTING. EARLY SOUTH 4-22 WABASHA DWH; 4-18 HENNEPIN RBJ; 4-22 HENNEPIN RJ; EARLY NORTH 3-27 CASS HBU; 4-19 MARSHALL KREJ; 4-22 ITASCA HSI; PEAK 5-22 ST. LOUIS (3) JCG.

SONG SPARROW: 21 REPORTERS REPORTING. EARLY SOUTH 3-13 MURRAY ADK; 3-13 RICE GBJ; 3-13 SCOTT ETS; EARLY NORTH 3-22 CROW VING TSJ; 3-24 GRANT KREJ; 3-27 ST. LOUIS JCG.

LAPLAND LONGSPUR: 7 REPORTERS REPORTING. EARLY SOUTH 5-22 LYON HCNJ; 3-11 COTTONWOOD LBJ; 3-11 BOONVILLE KREJ; EARLY NORTH 4-14 WILKIN RBJ; 4-21 WILKIN RBJ; PEAK 3-11 WATONWAN (28) LBJ; 4-21 WILKIN (100'S) RBJ; LATE SOUTH 4-21 COTTONWOOD LBJ; LATE NORTH 4-22 WILKIN KRE.

CASUAL SPECIES:

Arctic Loon: 5-03 Lake Superior, Duluth JAB

Little Blue Heron: 5-19 Pope KRE; 5-28 Pope BAH

Cattle Egret: 4-17 (2) Wabasha EDK; 4-25 Chippewa JLS

Ferruginous Hawk: 5-26 Ottertail KRE

Turkey: 3-17 Wabasha OLV

Yellow Rail: 5-28 Aitkin TS and KRE

Ruff: 5-13 Morrison Mr. and Mrs. William Wyatt

Little Gull: 5-27 Minnesota Point, Duluth 3 adults, 4 immature JCG and CLH; 5-28 1 adult, 3 immature KRE; 5-31 1 adult, 4 immature JAB

Arctic Tern: 5-27 Minnesota Point, Duluth 3 JCG and CLH; 5-28 KRE, DR and ETS; 5-31 JAB

Scissor-tailed Flycatcher: 5-25 Mille Lacs MI

Carolina Wren: 3-08 Hennepin VL

Varied Thrush: 5-08 Duluth JCG

Townsend's Solitaire: Chisago WHL

Hooded Warbler: 5-22 to 5-27 Robert's Sanctuary ETS, RBJ, VL, DR, and DB

Western Tanager: 5-08 Mille Lacs MI

Summer Tanager: 5-28 Hennepin CLH

Blue Grosbeak: 5-18 Murray ADK

Contributors

Agassiz National Wildlife Refuge Staff, AWR

James A. Baumhofer, JAB

Don Bolduc, DB

Harry L. Buck, HLB

Steve Carlson, SC

Mable Coyne, MC

Richard C. Davids, RCD

Mrs. Arnold DeKam, ADK

Whitney and Karen Eastman, WKE

Kim R. Eckert, KRE

Alpha and Fred Eckhardt, AFE

Laurence and Carol Falk, LCF

Mrs. L. A. Feil, LAF

Mark Fuller, MF

Pepper Fuller, PF

Janet C. Green, JCG

Harold R. Hanson, HRH

Helen Hatleld, HH

Mr. and Mrs. Wayne Hawkinson, WH

Nels J. Hervl, NJH

N. M. Hiemenz, NHM

Bruce A. Hitman, BAH

Robert E. Holtz, REH

Charles L. Horn, Jr. CLH

M. Ivanovs, MI

Robert B. Janssen, RBJ

Oscar L. Johnson, OLV

Mrs. E. W. Joul, EWJ

Earl D. Kopschke, EDK

Henry C. Kyllingstad, HCK

Violet Lender, VL

F. Z. Leshner, FZL

William H. Longley, WHL

Mrs. W. W. Lundgren, WWL

Shirlee Maertens, SM

Lester T. Magnus, LTM

Don and Wynn Mahle, DWM

Gerald J. Niemi, GJN

Carl E. Pospichal, CEP

Dick Ruhme, DR

Lester Rupp, LR

Orwin A. Rustad, OAR

L. S. Ryan, LSR

Terry Savaloja, TS

John L. Schladweiler, JLS

Mrs. A. Edward Schmid, AES

Madeline Schuller, MS

C. K. Sherck, CKS

Sherburne National Wildlife Refuge Staff, SWR

Evelyn T. Stanley, ETS

Tamarac National Wildlife Refuge Staff, TWR

Pat Telfer, PT

Carol Urness, CU

Robert Zink, RZ

notes of interest

FIRST STATE RECORD OF THE MISSISSIPPI KITE — Around 4:00 p.m. on Friday, Aug. 31, 1973 I was returning north along County Hwy. 8 to our campgrounds at Camden State Park after having birded several hours in the Lake Benton area in Lincoln County. A terrifically strong southern wind was blowing that afternoon. When I was just east of Arco I spotted a medium-sized falcon-like hawk far out in a cornfield flying a few feet above the cornstalks. The bird was heading straight south into the wind, therefore its progress was very slow. I could see that observation was soon to be cut short because the bird was about to be lost from sight beyond a farm woodlot. Realizing this I turned the car around and drove back and into the driveway of the farm so I would be in a position to see the bird again when it would have progressed beyond the woodlot. It did not soon reappear, but instead stopped to rest somewhere out of sight in that woodlot. I determined to wait for it to take to the air again - and wait I did! Nearly one hour later when I was about to give up, the bird reappeared, but again it was too far away for identification, and furthermore it was ascending steadily into the sky. Since its direction was still southward, I drove ahead of the bird to the next crossroad to wait for it to advance to that point. While waiting, I could see the bird afar off through binoculars. Its approach was slow not only because of the strong wind, but also because the bird was leisurely "riding" the wind - meandering laterally and vertically over a wide area. Eventually it did approach the road and since it was maneuvering so much in the wind I had plenty of time to position the car and myself near the bird. What was remarkable about this bird was how it seemed to ignore my presence, unlike other hawks, offering me fantastically close observation - at times within 50 feet. I was able to observe the bird from all angles because of its "maneuvering" which included a couple of swoops, almost touching the ground. Total observation time here and at two other nearby locations was 20-30 minutes. The hawk was slightly longer than a Pigeon Hawk with a very slim body, and a long narrow tail. The top of the tail was solid black whereas the underside was barred. The notch in the tail was especially obvious whenever the bird would "hang" in the wind. The pointed wings were proportionately long and slender. The wing linings were dark gray with the primaries and secondaries being blackish. The back was gray, the head, which completely lacked any pattern, was lighter gray. The breast and belly were light in color with faint gray streaking.

Considering the spectacular aerial behavior and physical characteristics, this hawk was identified as a sub-adult Mississippi Kite. This was my first observation of this species anywhere. This sight record constitutes the first state record of the Mississippi Kite. **William R. Litkey, 589 Granite Ave. N., St. Paul, Minnesota 55119.**

STATUS OF LECONTE'S SPARROW IN MINNESOTA — For the past several years the authors have looked for LeConte's Sparrow at various places within and around Itasca State Park while working out of the University of Minnesota Forestry and Biological Station at Lake Itasca. Although we found the species within the park, it was not nearly as common there as in the more open country beyond, being commonest in the wettish marshes and notice-

ably scarcer on higher, drier fields. We found the birds in greatest abundance, however, some sixty miles southeast of the park in Wadena County, near the Oehlenschlager farm about six miles southeast of Nimrod. There in late May and early June several singing males usually could be found in each of many wettish swales or marshes separated by extensive stands of aspen and jackpine. In several such marshes, we looked for but failed to find a single nest in 1971. Our searching appeared to be fruitless the following year as well, but on June 11 Oehlenschlager finally succeeded in finding a nest with three large young that evidently fledged before June 14. On May 28, 1973 we returned to the same marsh near the Oehlenschlager farm and found two active nests with five fresh eggs each. These nests, like the one found in 1972, were situated in dense sedges, over shallow water and concealed from above by a fallen bunch of dry sedges left over from a previous haying operation. Since LeConte Sparrow nests are exceptionally well hidden, and the fact that the birds often flush long before one approaches closely, the nests are difficult to find, much more so than those of Savannah Sparrows and Bobolink that nest abundantly in drier areas of the same marshes. Our limited data supports earlier observations on nesting habitat preference and times of first nestings, but very little has been done with the species in Minnesota. According to Janet Green (personal communication), not only are studies lacking but even nestings have not been reported for many years — none, evidently, since Roberts (**The Birds of Minnesota**, University of Minnesota Press, Vol. II, 1936) reported young out of the nest for Minneapolis (1877), St. Paul (1928), Sherburne Co. (1917), Marshall Co. (1928); nests with eggs or young in Kittson Co. (1897). The last reported nests were found by Kilgore and Breckenridge in Kittson Co. in 1929 on June 17 (nests with four eggs) and June 24 (nest with five fresh eggs) respectively. **David F. Parmelee, Richard J. Oehlenschlager, James Ford Bell Museum of Natural History, University of Minnesota, Minneapolis, Minnesota 55455.**

BALD EAGLE FROM MINNESOTA RECOVERED IN TEXAS — On January 5, 1973 a Bald Eagle was captured in a coyote trap on the ranch of W. R. Terrell near Matador, Texas. This bird was released alive and unharmed. On June 12, 1971 this eagle was banded as a nestling with a U.S. Fish and Wildlife Service band No. 599-01907 near Coleraine, Itasca County Minnesota, and later dispersed from the home range on September 25, 1971. There are several interesting facts about this recovery. This bird was recovered about 1,260 miles from where it was banded and about 315 miles from the recovery location of another Bald Eagle that was banded as a nestling in June of 1968 and recovered in October of the same year. Both of these birds were from nests within the same home range and may have been young from the same parents. The 1968 recovery was reported previously (Dunstan, **Loon**, 41:92, 1969). At the time of banding a 124 g radio transmitter was affixed to this bird using a backpackage harness (Dunstan, **Inland Bird Banding News**, 44:4-8, 1972) that was designed to drop off after about six months. The transmitter was not present at the time of the recovery. Also, a 0.6 g breast muscle sample was surgically removed from this bird at the time of banding for use in pesticide residue analysis. These studies indicate that some Minnesota Bald Eagles migrate long distances, and that the use of radio transmitters and breast muscle biopsy techniques can be done successfully.

Acknowledgments: This publication resulted from a major study that was funded by the National Audubon Society and the National Geographic Society. **Thomas C. Dunstan, Dept. of Biological Sciences, Western Illinois University, Macomb, Illinois 61455.**

POSSIBLE MYRTLE WARBLER BREEDING IN SOUTHERN MINNESOTA —

On June 17, 1973, in a small entirely deciduous, wooded area, interspersed with several small ponds, in Coon Rapids, Anoka County, I saw a male and female Myrtle Warbler. Upon noticing that the female was carrying a caterpillar in her bill, I decided to watch the area more closely than usual for a few weeks, thinking that the pair could possibly be nesting in the vicinity. Although I went there every morning and several evenings after this I neither heard or saw any sign of the Myrtles again until June 25 when several friends and I saw both the male and female again. The entire time we were in the woods the male was involved in a squabble with a male Cerulean Warbler. Since the Ceruleans were nesting about 15 yards from the place the Myrtles had been both times I had seen them, I assumed that it was a territorial battle; the Myrtle attempting to keep the Cerulean in his own area. During the next week I saw and heard the male sing every morning. Not once during this time did I see the female. On the evening of July 1, however, a friend and I again saw both the male and the female in their usual place. While I was watching the male my friend pointed out the female about 35 feet up in an elm and said she was on a nest. When I looked I saw the same thing. Unfortunately, when I attempted to climb the tree to make sure there really was a nest, the female flew and I was unable to find it. The nest, if it was really where we thought we saw it, was situated on a large branch about six feet away from the main trunk. I cannot be sure that the nest was actually in this tree but I believe very strongly that it was. If the nest was not in that elm I do not know why two of us thought we saw a nest by the female or why the male scolded me from a nearby branch while I was climbing the tree. Luckily on July 14, after twelve days without any sign of the Myrtles I saw an immature Myrtle Warbler in the same area. I feel that there is almost undeniable evidence that a pair of Myrtle Warblers nested in this area. A Coon Rapids nesting would be further south than any previously reported nesting site for this species in Minnesota. **Steve Carlson, 11426 N. Heights Drive, Coon Rapids, Minnesota 55433.**

EDITOR'S NOTE. A number of summer reports were received of warblers south of their normal breeding range in northeastern Minnesota. In addition to the above report, Ruth Andberg of Anoka saw a singing male Myrtle Warbler in Sand Dunes State Forest, Sherburne County on July 7, 1973.

UNUSUAL HUMMINGBIRD BEHAVIOR — The Ruby-throated Hummingbird was in our flower garden and I moved close to it to get a good view of it. While I was there, the hummingbird lit on my back and stayed there for about five minutes. I called to my mother and father to come and look at it and the bird didn't fly away but stayed on my back so that they too got a good look at it. Then the bird flew into the flower bed. I went up close to the flower bed and put out my hand and the bird came to me. I picked a sweet william and held it to the bird. It went into the flower and fed. Then I took it over to our sugar and honey feeder and it really had a meal. This happened on Saturday, July 21, 1973 and the next day, Sunday, the bird was still around and would come to me. Eveline and Harold Seastead came to visit us on Sunday and we took them out to see the bird. He was just as friendly as he was the day before and came on my hand. We even stroked the bird. **Nancy Mann, 8267 Congdon Blvd., Duluth, Minnesota 55804...**

NOTES ON THE HOODED WARBLER IN MINNEAPOLIS—Tuesday, May 22, 2:45 P.M. Sadie Whitesel and I were birding along Robert's Sanctuary path

and listening for song, preferably the Connecticut Warbler. We stopped to look at a thrush on the east side of the swamp. I heard a loud clear call - "wheata, wheata, whee." I repeated it to Sadie and walked down onto the narrow dirt path leading into the swampy underbrush. Caught a slight movement about one foot up in the brush 20 feet away - to my left. Using my 7x35 binoculars, I had a short fleeting look at the bird, just enough to make me aware of its unusual markings. I told Sadie what it looked like, we checked our guide and decided it could well be a Hooded Warbler, especially with the identifying call so similar. About 6:00 P.M. George and I went back to Roberts Sanctuary and the same area. In my eagerness I went ahead and found the bird up in the trees east of the swamp. I had several good sightings of it as it called and moved about - above and down near the ground, George also saw it. The bird flicked its tail, an identifying action, and was a very well marked adult male. The Hooded is aptly named, it wears a hood of such black contrast to the yellow about its beak, a strikingly attractive beauty. The next morning I joined Betty Murphy and walked into Robert's to find the Hooded Warbler and several birders there. Thursday, May 24, 1:00 P.M. After a dark rainy morning I arrived at Robert's and went in to find the Hooded Warbler still in the same area and very busy moving about. I watched about a half hour and delighted in his fearless activity. The last day the warbler was seen was Friday, May 25th. Coincidentally, I was birding on May 17-18 in Moorhead at the sugar settling ponds. We stopped to look at a small wooded lot nearby, I heard a wheata call, very loud and repeated over. Tried to find the bird but failed. However, I am wondering if the Hooded Warbler is extending its range and if that call could have been one. The proximity of the dates and similar call seem rather unusual to me. **Evelyn Stanley, 213 Janalyn Circle, Minneapolis, Minnesota 55416.**

WHITE-WINGED GULL — On June 5, 1973, there were about 100 gulls flying along the North Shore at Stony Point near Duluth. They were mostly second-year Herring Gulls, but one buffy one was either an Iceland or Thayer's Gull. When it landed on the water, the wings extended beyond the tail, were buffy to the tips, which were whitish. The tail was buffy with a few brownish spots forming a band. The bird was the same size as the Herring Gulls. I saw a white-winged gull in approximately the same area on May 18, 1973, and was probably the same gull. We have a photograph of an Iceland Gull in this first-year plumage taken at the Duluth land-fill on Feb. 9, 1972. **Marjorie M. Carr, 1834 Vermillion Road, Duluth, Minnesota 55803.**

EDITORS NOTE: The possibility exists that the gull seen above was either a Thayer's or Iceland Gull. In our next issue we will attempt to run a series of pictures which will help separate the two species. The previous lake spring date for the Iceland Gull was April 5, thus the above May and June dates are exceptionally late dates for either species.

RUSTY BLACKBIRDS — My husband and I ran a breeding bird census near Hovland, Cook County on July 3, 1973. This was a new route for us, and I don't know if it has been done before. We started on the Arrowhead Trail, went down to the lake shore, then up to Mineral Center, and back down to Grand Portage. We didn't know what birds to expect, and I'm sure we missed a lot of goodies, especially warblers. Our first surprise was a Lincoln's Sparrow, which we've never heard sing before. Then five Philadelphia Vireos that we could hear and see. Near Mineral Center, there is a little open country with an occasional marshy area for Savannah Sparrows and Brewer's Black-

birds. A mile or so south of Mineral Center, there was a small marsh with dead snags in it on both sides of the road. A pair of blackbirds flew up, and the female was gray with a light eye. I have difficulty separating Rusty Blackbirds from Brewer's in the spring, unless a female is nearby, (does everyone?) We saw several Brewer's throughout the route, but this was the only pair of Rusty Blackbirds we found. We're hoping to see them again next year. **Marjorie M. Carr, 1834 Vermilion Road, Duluth, Minnesota 55803.**

EDITORS NOTE: There are no previous summer records for the Rusty Blackbird in Minnesota, however it does nest to the north in Ontario.

POSSIBLE IVORY GULL SIGHTING — My interest in natural history has stimulated, for the past few years, a wave of reports, both current and recalled, from my office colleagues. However, the blessing is mixed, when I try to sort fact from fancy, and my facial expression of late is a pair of raised eyebrows. One of the engineers, to my delight, is an "old-timer" with keen powers of observation who has spent his whole life as a surveyor, bridge engineer and general "keeper of facts" for the old Northern Pacific Railroad. His recall is quite impressive, so I pass along here one of his observations for the reader's evaluation. During mid-November of 1964 or 1965, Mr. Harold Dahl and a friend stopped near Little Marais, Lake County "where the road comes close to a rocky shoreline," with the intention of feeding the "large seagulls" there, (I can only assume he meant the "ever-present" Herring Gulls). They spent some time feeding the gulls, even getting some of them to swoop down and snatch food from the human hand. Mr. Dahl noted that there were three smaller gulls present, obviously different, and much more shy than the larger gulls. His exact description was, "pure white gulls, small - about pigeon-sized, with coal black legs." He said they caught his attention because they were something he had never seen before. He later told someone about them and was "authoritatively" informed that these were "Inland Gulls." **Ronald L. Huber, 2896 Simpson St., St. Paul, Minn. 55113.**

SURF SCOTER — On Oct. 17, 1972, Mr. Gerald L. Peterson, a student at South Dakota State University from Wheaton, Minn., submitted for identification a duck obtained while hunting the previous day. The specimen proved to be an immature female Surf Scoter. It was shot Oct. 16 at the north end of Lake Traverse, approximately one-fourth of a mile south of what is locally known as Reservation Dam (Section 23; T. 127N., R. 47W.). Mr. Peterson was hunting on a resident Minnesota hunting license, and although the exact kill site was in Minnesota, according to Mr. Peterson, it was ". . . only 100 or so yards removed . . ." from the South Dakota line. The specimen has been preserved as part of the South Dakota State University bird collection in the Department of Wildlife and Fisheries Sciences. In Roberts' "Birds of Minnesota" (1932:276), the Surf Scoter is reported as occurring rarely throughout Minnesota on migration, with several records from the southwestern and western portions of the state, particularly in the Heron Lake vicinity. Apparently it is more regular in occurrence on Lake Superior, where most observations are obtained in autumn and consists of females or young of the year. **John M. Gates, Brookings, South Dakota 57006.**

(South Dakota has five records, all specimens, of the Surf Scoter, with the first occurring in 1914.—Ed.)

EDITORS NOTE: The above note is reprinted from the September, 1973 issue of "South Dakota Bird Notes."

ALBINO SWALLOW — While birdwatching in the LaCrescent, Houston County area on September 22, 1973, I had the opportunity to observe a rather large number of Rough-winged Swallows. The birds were flying overhead in typical swallow-like fashion. In one small group of birds an individual was noted that was pure white throughout. Because of the distance and the fact that the bird was observed in flight, no eye color could be discerned. The other swallows were quite antagonistic to the albino - they would chase after it and just seemed generally "annoyed" by its presence. It would be difficult to determine the species of the albino but because it was with the group of Rough-wings, I assumed it was this species. **Robert B. Janssen, 14321 Prince Place, Minnetonka, Minnesota 55343.**

POSSIBLE SWALLOW-TAILED KITE SIGHTING — I was visiting on December 2, 1973 with Mr. and Mrs. George Mackie who have resort on Fenske Lake about 8 miles north of Ely in extreme northeastern St. Louis County, Minnesota. The subject of unusual bird sightings came up and they mentioned having seen a kite at their resort sometime in late July or early August of this year, 1973. I, of course, became much interested and asked numerous questions about the observation. Mr. Mackie has lived all his life in the northwoods having spent a large part of the time trapping and was very familiar with the wildlife of the area. The bird in question had alighted less than 100 feet from their house and he immediately recognized it as something he had never seen before. Calling to his wife they opened Dr. Roberts' "Birds of Minnesota" and without hesitation identified the rare visitor as a Swallow-tailed Kite. They mentioned particularly the prominently contrasting pattern of pure glistening white below and jet black on the back. The long forked tail was very prominent and was seen repeatedly as the bird alighted on nearby perches several times. In all they estimated that the bird was studied for at least 15 minutes. The Mackie's active interest in birds and especially Mr. Mackie's lifelong experience with the wildlife of the area convinced me of the accuracy of their identification of this almost unmistakable species. **W. J. Breckenridge, 8840 W. River Road, Minneapolis, Minnesota 55430.**

JAEGERS IN DULUTH — On August 5, 1973, I was in Duluth and had just left the Canal Park after checking the gulls there when I happened to look in my rear view mirror and saw a dark falcon-like bird chasing the gulls. By the time I got back to the park, the bird, which I was sure was a jaeger, was gone. I drove to the Recreation Area and went down to the beach behind it. As I was scanning the lake, I saw two dark falcon-like birds out over the water. While I was watching, one of the birds came in toward the shore after a Ring-billed Gull which was flying down the shore in front of me. The jaeger chased the gull and gave me a good look and I identified it as a Parasitic Jaeger. It chased the gull around and then sat down on the lake. When a gull would come along it would get up and fly after it. It struck one gull twice but I never saw it catch or eat anything. Because of its same general shape and size, I think the second bird with it was also a Parasitic Jaeger. While I was watching the first jaeger, two more birds having the same general shape and size flew behind it toward the Superior Entry. The last I saw of the Parasitic Jaeger was as he was heading for the Superior Entry. Later all the gulls at the entry were up in the air. I walked out to the end of Minnesota Point and when I was near the airport on my way back, I heard a screaming gull coming up behind me from the harbor side. A Herring Gull flew right over me with a large jaeger in pursuit. It was larger and not as buoyant in flight as the Parasitic Jaegers I had seen earlier. The jaeger chased the gull down the

beach toward Duluth and a short time later came back floating behind a flock of gulls. I could see that the central tail feathers were twisted. From its larger size, huskier shape and twisted tail feathers, I identified this individual as a Pomarine Jaeger. During the course of about two hours, I had seen five Parasitic and one Pomarine Jaegers. One possible reason for such a large number of jaegers could have been a storm and cold front which could be seen moving in from the lake. The storm later hit Duluth with a lot of rain and wind. The Parasitic Jaegers were all adults and could be described as about the same length as a Ring-billed Gull, but not as heavily bodied. They had white shafts in the primaries and short pointed tail feathers. The Pomarine Jaeger was about the size of a Herring Gull, or slightly smaller, and also had white shafts in the primaries. Its flight was heavier and it had a distinct breast band and barred sides. The tail feathers were longer than the Parasitic and were twisted. **Terry Savaloja, Box 244, Deerwood, Minnesota 56444.**

WESTERN GREBE IN DULUTH — On August 5, 1973, I saw a Western Grebe in Duluth near the Canal Park. I first saw the grebe flying from the lake toward the city, then it turned and flew over the lift bridge into the harbor. I knew Western Grebes are not common in the Duluth area, and I wanted to get a look at it sitting in the water. After waiting for the bridge to come down, I found the bird sitting in the harbor behind Clem's gas station-store. It stayed there until a ship came in, then flew up the harbor toward the Superior Entry. I observed the grebe with a 15-60 power "zoom" spotting scope. It was in breeding plumage with a white throat, long, straight, dark neck and thin, straight, light-colored bill. **Terry Savaloja, Box 244, Deerwood, Minnesota 56444.**

BOOK REVIEWS

I have just finished reading a book on bird's nests and thought I would pass on some information from it to you. Perhaps you might like to read it as well.

A Complete Field Guide to Nests, by Richard Headstrom, 1970, Ives Washburn, Inc. This book is the most authoritative guide to nests that I could find. It is structured like a key, which is a tool of most sciences. A key is a simple device that presents you with a series of alternatives and each alternative leads you to another pair of choices until you reach the right one. It is a simplified version of the process of elimination and the structure of this book will become very apparent and useful to you in the field since a series of questions eliminates paging through 600 birds. The first question you have to answer is whether you are east or west of the 100th meridian, and I will leave that for you.

The book is meant to be used as a tool and not for leisure reading, but even so there are points of pleasurable reading and the introductions are a must to be read as they contain many enjoyable and educational passages. By paging through the book you can learn that a Snow Bunting likes fox hair in its nest, a Purple Finch likes hog bristles and horse hair, a hummingbird will use fern wool and red oak leaf down, as well as lichen in his nest construction, and a vireo will decorate his nest with caterpillar skins.

A Burrowing Owl will use broken bits of horse or cow dung in the en-

trance to his nest and a kingfisher will frequently line his nest with bits of clean, white fish bones, fish scales, or fragments of the shells of crustaceans. Then there are birds like the Great Horned Owl who never build a nest but like to use others, and the cowbird who doesn't even stick around to see her young after laying eggs in another bird's nest.

The descriptions are brief and to the point, but excerpts like the following add enjoyment.

"Usually sunk somewhat in the ground and roofed over with an arch of leaves, grass, or other materials, giving it the form of an old-fashioned brick oven." What else could that be than the Ovenbird?

In the description of the Yellow Warbler's nest the author states, "Often an especially deep nest will be found resulting from the building of two or more floors to cover over and leave unhatched a cowbird's eggs deposited with the previous warbler eggs."

The following description of the Carolina Wren will give you an idea why even with a book like this all bird nests are best identified by seeing the bird that uses it. This describes where the nest might be found. "In a hole in the ground or in a crevice in a bank, in a hole in a tree or stump, fence post, fallen log, in a cavity in a stone wall, in tin cans, coffee pots, pails, small baskets, mail boxes, birdhouses, and in a great variety of nooks and crannies in or about or under buildings of various kinds and under bridges. Woodlands, orchards, thickets, brushy hollows, wooded swamps, along the banks of streams, and in the vicinity of human habitation."

That description was printed in the section entitled "Nests On or In the Ground" and refers you to nests above the ground as well. Thankfully some nests are a little more easily identified.

The book's main weakness is when it leaves the subject of birds, because the discussion on fish, reptiles, amphibians, mammals and insects is hurried and incomplete. Although it does give some information, it doesn't give enough to really be of value in the field for these animals.

A Complete Field Guide to Nests for the subject of birds is excellent and it is a must for anyone who knows the joys of birding.

Mike Link

CRANES OF THE WORLD by Lawrence Walkinshaw (Winchester Press, N.Y., N.Y.) 1973. 370 pages. 125 black and white photographs, 4 in color, \$25.00.

CRANES OF THE WORLD — This is a book that covers probably all that was known at the time of writing about the fifteen species of birds that comprise the Gruidae family. The introduction gives a summary of the family and a generalized synopsis of their habits and distribution. The succeeding fifteen chapters are devoted to each specie. The species chapters are very detailed as to behavior, plumage descriptions, courtship, nest and egg, voice, moults etc. The ranges, both breeding and wintering are sub-divided by countries. All sub-species are covered. Although this is technical work it is also a highly readable and interesting book. The chapters on the Sandhill Crane and Whooping Crane would be of most interest to the American and Canadian bird enthusiasts. The chapter on the Whooping Crane has great details on production and losses between wintering and breeding grounds from the years 1938 through 1972. The section on spring and fall migration with dates on stopping off places in Nebraska, the Dakota's and Canadian prairie provinces are quite detailed.

The author has much to say of how cranes can and will respond to protection. He cites the example of the Japanese Crane which through protection has increased from a low of under 20 in the early 1940's to over 200 at present.

Dr. Walkinshaw has spent many years studying cranes beginning in 1921 with his first observation of Sandhill's in his native Michigan. He has traveled to all the continents in which cranes are found and observed all species in the field except the Black-necked Crane of Tibet and parts of China. Besides his excellent field studies and photographs he has done a great deal of research among the literature and checking of museum specimens.

This book would seem to be a must for any ornithological research library and certainly for anyone interested in this fascinating group of birds.

R. A. Glassel

THE WIND BIRDS by Peter Matthiessen, with 25 drawings by Robert Gillmor. 160 pages. Viking Press, Inc., 625 Madison Ave., New York, N. Y. 10022. 1973. \$9.95.

THE WIND BIRDS — Peter Matthiessen's poetic and evocative, yet scientifically grounded text for **THE WIND BIRDS** has become a minor classic in nature writing. It first appeared in article form in **The New Yorker**, and was subsequently included in a large, deluxe volume entitled **THE SHOREBIRDS OF NORTH AMERICA**, published by Viking in 1967. Mr. Matthiessen has now expanded and extensively revised this original eleven-chapter essay, adding his recent observations and the latest scientific discoveries. In **THE WIND BIRDS**, his exciting account of the habits and behavior of shorebirds is now being made available in a new format, accompanied by 25 line drawings, beautiful and exact in every detail, made especially for the book by one of the world's finest wildlife artists, Robert Gillmor. There is also a selected bibliography and index.

When Peter Matthiessen's text was first published, it received high praises from both literary and scientific critics. With the publication of **THE WIND BIRDS**, his delightful, vital and exciting account of the most varied and remarkable families of birds on earth becomes available to more readers, amateur and professional naturalists, and conservationists alike.

"The restlessness of shorebirds, their kinship with the distance and swift seasons, the wistful signals of their voices down the low coastlines of the world make them, for me, the most affecting of wild creatures. I think of them as birds of wind, as 'wind birds.' To the travel confounded by exotic birds, not to speak of exotic specimens of his own kind, the voice of the wind birds may be the lone familiar note in a strange land, and I have many times been glad to find them; meeting a Whimbrel one fine summer day of February in Tierra del Fuego, I wondered if I had not seen this very bird of half-year earlier, at home."

The above is an excerpt from the book and is a good example of the excellent writing of Peter Matthiessen. If you are interested in shorebirds this book is a must for your library. The 25 line drawings by Robert Gillmor are excellent, especially those of the Eskimo Curlew, Dotterel on nest and Red Phalarope. These drawings plus the great prose make this book an excellent buy in this day of expensive books.

Robert B. Janssen

INDEX TO VOLUME 45

- Anhinga, 119
- Avocet, American, 13, 75, 81, 97, 98, 125, 127
- Baumhofer, James A., Carolina Wren seen in St. Paul, 24; Minnesota's third Arctic Loon 61-62; the Monk Parakeet, 94-95
- Bittern, 107, 119
- American, 12, 31, 126
- Least, 9, 12
- White-crested, 119
- Blackbird, 10, 24, 99, 125, 135
- Brewer's, 6, 48, 125, 129, 134, 135
- Red-winged, 5, 6, 11, 24, 48, 63, 107, 129
- Rustv, 9, 11, 48, 129, 134-135
- Yellow-headed, 31, 63, 107, 129
- Bluebird, Eastern, 6, 48, 83, 128
- Bobolink, 6, 10, 15, 99, 129, 132
- Bobwhite, 127
- Bolduc, Don, Minnesota birding areas-T. S. Roberts Sanctuary, 10-11
- Brant, Black, 12, 13, 24
- Breckenridge, W. J., possible Swallow-tailed Kite sighting, 136
- Bryson, Bill, the president writes, 3, 31, 71, 107
- Buffalo, 81
- Bufflehead, 9, 13, 46, 57, 58, 59, 60, 126
- Bunting,
- Indigo, 11, 129
- Lark, 9, 12, 125
- Snow, 48, 82, 137
- Canvasback, 13, 46, 57, 59, 60, 75, 76, 77, 123, 124, 126
- Cardinal, 11, 15, 20, 48, 82
- Caribou, 81
- Carlson, Steve, possible Myrtle Warbler breeding in southern Minnesota, 133
- Carr, Marjorie M., shrike behavior, 22; white-winged gull, 134; Rusty Blackbird, 134-135
- Catbird, 11, 64, 128
- Chat, Yellow-breasted, 12
- Chickadee, 10, 89, 99
- Black-capped, 6, 11, 47
- Boreal, 12, 14, 46, 48, 125, 128
- Chipmunk, Eastern, 6, 10
- Christman R. S., an albino Bank Swallow, 22
- Coot, American, 10, 13, 47, 63, 99, 107, 127
- Cormorant, 124
- Double-crested, 10, 12, 21, 75, 99, 126
- Long-tailed, 119
- Corvids, 14
- Cowbird, Brown-headed, 6, 11, 26, 48, 96, 129, 138
- Coyote, 101, 102
- Crane, 81, 139
- Black-necked, 139
- Japanese, 139
- Sandhill, 13, 75, 76, 81, 127, 138, 139
- Whooping, 75, 76, 81, 138
- Creepers, Brown, 9, 11, 48, 128
- Crossbill, 6, 20
- Red, 9, 15, 48, 125, 129
- White-winged, 15, 48
- Crow, Common, 10, 11, 14, 23, 47, 99, 128
- Cuckoo, 10, 14, 99
- Black-billed, 6, 11, 14, 128
- Yellow-billed, 11, 14, 128
- Curllew, 76
- Eskimo, 75, 81, 139
- Long-billed, 75, 81
- Deer, White-tailed, 5, 10, 80, 89
- Dickcissel, 15, 98
- Dotterel, 139
- Dove, 10, 99, 125
- Mourning, 6, 11, 47, 128
- Rock, 6
- Dowitcher,
- Long-billed, 13, 127
- Short-billed, 13, 127
- Duck, 10, 13, 57, 58, 59, 60, 75, 76, 77, 80, 81, 82, 84, 99, 107, 119, 123, 124, 135
- Black, 13, 46, 126
- Harlequin, 13
- Ring-necked, 6, 13, 46, 57, 58, 59, 60, 98, 123, 126
- Ruddy, 13, 46, 126
- Wood, 11, 13, 46, 57, 58, 59, 60, 126
- Duke, Gary E., Mark R. Fuller and Patrick T. Redig, raptor rehabilitation and conservation in Minnesota, 50-55
- Dunlin, 125, 127
- Dunstan, Thomas C., the biology of Ospreys in Minnesota, 108-113; Bald Eagle from Minnesota recovered in Texas, 132
- Eagle, 15, 16, 23, 101, 102
- Bald, 13, 15-16, 22-23, 47, 50, 52, 53, 82, 101, 102, 109, 111, 112, 119, 124, 127, 132
- Fishing, 119
- Golden, 13, 23, 47, 52, 53
- Eckert, Kim, three Minnesota "Big Days" a summary, 7-9, the 1972 fall season-August 1 to November 30, 11-15; Cattle Egrets and Little Blue Herons in Grant County heronry, 21-22; 183 species seen on 1973 big day, 98-99
- Eckhardt, Mrs. Oscar, Gray-headed Junco record, 26
- Egret, 21, 119
- Cattle, 9, 12, 21-22, 62, 100, 119, 124, 130
- Common, 9, 10, 11, 12, 17, 21, 32-45, 124, 126
- Little, 119
- Snowy, 21
- Elk, 81
- Elwell, Mary and Evelyn Putnam, the M.O.U. 35th Anniversary story, 74-93
- Enger, Mark W., woodcock display, 100
- Falcon, Peregrine, 13, 47, 52, 53, 124
- Finch, 10, 15, 22, 29
- Gray-crowned Rosy, 12, 15, 20
- Purple, 11, 48, 89, 125, 129, 137
- Flicker, 18
- Red-shafted, 47
- Yellow-shafted, 6, 11, 47, 128
- Flycatcher, 10, 14, 66, 99, 125
- Great Crested, 11, 19, 128
- Least, 11, 128
- Olive-sided, 11, 17, 128
- Scissor-tailed, 65-66, 125, 130
- Traill's, 11, 128
- Yellow-billed, 9, 11, 128
- Forbes, James E. and Alan B. Sargeant, mortality among birds, mammals and certain snakes on 17 miles of Minnesota roads, 4-7
- Frenzel, L. D. and Joel Kussman, Bald Eagle-hawk interaction, 101
- Fox, Red, 5, 6, 10, 101, 102
- Fuller, Mark R., Patrick T. Redig and Gary E. Duke raptor rehabilitation and conservation in Minnesota, 50-55
- Fuller, Thad L., possible Black Brant, 24
- Gadwall, 13, 46, 57, 59, 60, 75, 126
- Gallinaceous birds, 10, 13, 99
- Gallinule, Common, 9, 13
- Gates, John M., Surf Scoter, 135
- Gillette, Laurence N., Little Blue Heron seen in Hennepin County, 62-63
- Glassel, R. A., book review, 138-139
- Gnatcatcher, Blue-gray, 11, 12, 98
- Goatsuckers, 10, 99
- Godwit,
- Hudsonian, 12, 98, 125, 127
- Marbled, 9, 13, 98, 127
- Goldberg, M. G., Hooded Warbler netted, 65
- Goldeneye,
- Barrow's, 25, 46, 82
- Common, 9, 25, 46, 57, 58, 59, 60, 82, 126

- Goldfinch, American, 6, 11, 24, 48, 129
 Goose, 10, 12, 75, 81, 83, 99, 119, 124
 Blue, 11, 24, 46, 124, 126
 Canada, 13, 46, 75, 76, 126
 Knob-billed, 119
 Snow, 11, 13, 46, 124, 126
 White-fronted, 13, 124, 126
 Gopher, 101
 Mississippi Valley Pocket, 6
 Goshawk, 11, 12, 13, 23, 46, 51, 53, 54, 66, 101, 127
 Grackle, Common, 11, 48, 95, 129
 Grebe, 10, 12, 99, 107, 137
 Eared, 12, 126
 Horned, 12, 61, 126
 Pied-billed, 46, 126
 Red-necked, 12, 61, 126
 Western, 12, 108, 137
 Green, John C., to list or not to list, 72-74
 Grosbeak, 64
 Black-headed, 12, 14, 64-65
 Blue, 130
 Evening, 11, 48, 83, 89, 129
 Pine, 48, 82, 129
 Rose-breasted, 6, 11, 24-25, 26, 48, 64-65, 129
 Grouse, 81, 124
 Ruffed, 6, 47, 116, 124, 127
 Sharp-tailed, 13, 47, 127
 Spruce, 13, 124, 127
 Gull, 10, 14, 67, 76, 99, 125, 134, 135, 136, 137
 Bonaparte's, 127
 Franklin's, 11, 14, 76, 77, 127
 Glaucous, 14, 47
 Herring, 9, 11, 47, 127, 134, 135, 136, 137
 Iceland, 134
 Ivory, 135
 Little, 67, 124, 130
 Laughing, 17
 Ring-billed, 6, 11, 23, 47, 127, 136, 137
 Thayer's, 134
 Gyrfalcon, 13, 25, 47, 52, 53
 Ibis, Wood, 119
 Hadada, 119
 Hart, John, a bird trip on the Zaire River, 118-120
 Hawk, 10, 13, 22, 50, 51, 53, 66, 84, 91-92, 99, 101, 124, 131
 Broad-winged, 6, 11, 13, 51, 53, 127
 Cooper's, 9, 13, 46, 51, 127
 Ferruginous, 124, 130
 Kridler's Red-tail, 13
 Marsh, 13, 47, 53, 101, 124, 127
 Pigeon, 9, 13, 46, 47, 127, 131
 Red-shouldered, 9, 47, 51, 53
 Red-tailed, 11, 13, 23, 46, 51, 53, 127
 Rough-legged, 13, 47, 53, 127
 Sharp-shinned, 9, 11, 13, 46, 53, 65, 127
 Sparrow, 11, 13, 47, 53, 127
 Swainson's, 13, 127
 Heintzelman, Donald S., the birder and the ecological niche, 17-19
 Helmin, Gary A. & Grace E., fourth Minnesota observation in 80 years, 20
 Heron, 10, 12, 99, 119, 124
 Black-crowned Night, 11, 12, 17, 21, Front cover, No. 2, 32-45, 75, 77, 126
 Black-headed, 119
 Goliath, 119
 Grey, 119
 Great Blue, 10, 17, 21, 32-45, 46, 126
 Great White, 119
 Green, 10, 62, 126
 Green-backed, 119
 Little Blue, 9, 12, 21-22, 62-63, 98, 124, 130
 Purple, 119
 Squacco, 119
 Yellow-crowned Night, 11, 12
 Horn, Charles L. Jr., wintering white-throats, 19; Summer Tanager sighting, 63-64
 Huber, Ronald L., possible Ivory Gull sighting, 135
 Hummingbird, Ruby-throated, 10, 11, 99, 128, 133, 137
 Icterids, 15
 Ivanovs, M., Western Tanager in Mille Lacs County, 62;

- Scissor-tailed Flycatcher in Mille Lacs county, 65-66
 Jaeger, 13, 136, 137
 Long-tailed, 12, 13
 Parasitic, 13, 136, 137
 Pomarine, 12, 13, 137
 Janssen, Robert B., late Rose-breasted Grosbeak, 26; should the MOU have a 300 club, 72; the 1973 Spring Season, 123-130, albino swallow, 136; book review, 139-140
 Jay, 10, 11, 99
 Blue, 6, 14, 22, 47, 128
 Gray, 47
 Johnson, Oscar L., red-winged black and white bird, 24; 1972-73 winter season (December 1 thru February 28), 46-49
 Johnson, Roger N. and Earl D. Kopsichke, current status of Wild Turkey in southwest Minnesota 49-50
 Junco, 22, 26, 67
 Gray-headed, 23, 46, 48
 Oregon, 11, 15, 26, 48, 129
 Slate-colored, 6, 9, 11, 25, 26, 48, 129
 Keran, Douglas C. and David O. Rasmussen, spring sex ratios of migratory waterfowl in north-central Minnesota, 56-61
 Killdeer, 13, 47, 127
 Kingbird,
 Eastern, 6, 11, 14, 128
 Western, 14
 Kingfisher, 120, 125, 138
 Belted, 10, 11, 47, 99, 128
 Giant, 120
 Pied, 120
 Woodland, 120
 Kinglet, 10, 99
 Golden-crowned, 11, 48, 98, 128
 Ruby-crowned, 11, 128
 Kite, 136
 Mississippi, 131
 Swallow-tailed, 82, 136
 Knot, 12, 98, 127
 Kopsichke, Earl D., early record for Cattle Egrets, Wabasha County, 62; Sharp-shinned Hawk kills Robin, 65
 Kopsichke, Earl D., and Roger N. Johnson, current status of Wild Turkey in southwest Minnesota 49-50
 Kussman, Joel, and L. D. Frenzel, Bald Eagle Hawk interaction, 101
 Lark, Horned, 10, 47, 83, 99, 125, 128
 Leshner, Fred, book review, 101-102
 Link, Mike, the tragic lives of Tom, Dick, Harry and Cynthia, 27; book review, 137-138
 Litkey, William R., first state record of the Mississippi Kite, 131
 Longspur, 15, 120
 Chesnut-collared, 12, 15, 120
 Lapland, 15, 48, 126, 130
 Smith's, 15
 Longley, William H., a Townsend's Solitaire in Chisago County, 66, the Louisiana Waterthrush still nests in Chisago County, 95-96
 Loon, 10, 12, 67, 99, 124
 Arctic, 11, 12, 61-62, 67, 124, 130
 Common, 12, 61, 67, 72, 103, 124, 126
 Red-throated, 12, 61, 62, 67
 Magpie, Black-billed, 12, 14, 46, 47, 120-123, 125, 128
 Mallard, 6, 11, 13, 46, 57, 58, 75, 83, 107, 126
 Mann, Nancy, unusual hummingbird behavior, 133
 Martin,
 African River, 120
 Purple, 6, 11, 128
 Mathisen, John E., Bald Eagle-Osprey status report, 1972, 15-16
 McCabe, Tim L., overwintering Saw-whet Owls in Clay County, 114-117
 Meadowlark, 10, 48, 99
 Eastern, 5, 129
 Western, 15, 129
 Merganser, 9
 Common, 9, 46, 126

- Hooded, 9, 46, 126
 Red-breasted, 46, 61, 123, 126
- Mockingbird, 12, 125
- Mogenweck, Ralph, Bald Eagle-hawk interaction, 101
- Mole, Common, 6
- Moose, 101, 102
- Mouse, 101
 Common Meadow, 6
 Deer, 6
 Red-backed, 6
- Muskrat, 6, 31
- Nelson, Mrs. Sheldon F., nesting Pine Siskins, 96-97
- Nighthawk, Common 6, 11, 14, 128
- Nutcracker, Clark's 12, 14, 20-21, 46, 47
- Nuthatch, 10, 99
 Red-breasted, 11, 20, 48, 125, 128
 White-breasted, 11, 48, 128
- Oehlenschläger, Richard J. and David F. Parmalee, status of LeConte's Sparrow in Minnesota, 131, 132
- Oehlenschläger, Richard J., David F. Parmalee, and John R. Tester, Black-billed Magpie nestings in Clay County, 120-123
- Oldsquaw, 13, 46, 89, 126
- Olyphant, Jane, hybrid Rose-breasted-Black-headed Grosbeak, 64-65; Brewster's Warbler banded in Washington County, 99-100
- Oriole, 10, 99
 Baltimore, 11, 15, 64, 125, 129
 Orchard, 9, 15, 82
- Osprey, 11, 13, 15-16, 50, 108-113, 127
- Ostrich, 18
- Ovenbird, 11, 14, 129, 138
- Owl, 10, 14, 50, 54, 66, 99, 137
 Barred, 14, 47, 53
 Boreal, 14, 47
 Burrowing, 12, 125
 Great Gray, 11, 14, 47, 89
 Great Horned, 11, 14, 20, 27, 47, 51, 52, 53, 125, 138
 Hawk, Front cover No.1, 14, 19, 46, 47, 125, 128
 Long-eared, 11, 14, 53, 128
 Saw-whet, 11, 14, 47, 114-117, 128
 Screech, 9, 11, 14, 47, 53
 Short-eared, 9, 14, 47
 Snowy, 14, 47, 53, 89, 128
- Parakeet, Monk, 94-95
- Parmalee, David F. and Richard J. Oehlenschläger, status of LeConte's Sparrow in Minnesota, 131-132
- Parmalee, David F., John R. Tester and Richard Oehlenschläger, Black-billed Magpie nestings in Clay County, 120-123
- Partridge, Gray, 9, 13, 47, 98
- Pelican, White, 9, 10, 12, 75, 76, 81, 99, 124, 126
- Peterson, Donald J., nesting Avocet in Big Stone County 97-98
- Pewee,
 Eastern Wood, 11, 98, 128
 Western Wood, 67
- Phalarope, 63
 Northern, 125, 127
 Red, 139
 Wilson's 13, 63, 125, 127
- Pheasant, Ring-necked, 5, 6, 11, 47, 124, 127
- Phoebe, Eastern, 9, 11, 14, 128
- Pigeon, Passenger, 80, 81, 82, 83
- Pintail, 13, 46, 57, 59, 60, 75, 126
- Pipit,
 Sprague's, 14
 Water, 14, 128
- Plover, 81
 American Golden, 13, 81, 127
 Black-bellied, 9, 127
 Piping, 13, 125, 127
 Semipalmated, 127
 Upland, 9, 13, 81, 82, 127
- Prairie Chicken, Greater, 12, 127
- Putnam, Evelyn and Mary Elwell, the MOU 35th anniversary story, 74-93
- Quail, Coturnix, 55
- Rabbit, Cottontail, 6, 10, 101
- Raccoon, 6
- Rail, 10, 31, 99, 107, 124
 Black, 12, 13
 King, 13
 Virginia, 11, 13, 72, Front Cover No. 4, 127
 Yellow, 124, 130
- Rasmussen, David O. and Douglas C. Keran, spring sex ratios of migratory waterfowl in north-central Minnesota, 56-61
- Raven, Common, 14, 47
- Redhead, 13, 46, 75, 76, 77, 96, 123, 126
- Redig, Patrick T., Mark R. Fuller and Gary E. Duke, raptor rehabilitation and conservation in Minnesota, 50-55
- Redpoll,
 Common, 15, 48, 129
 Hoary, 15, 48, 129
- Reese, Jan G., Bald Eagle migration along the upper Mississippi River in Minnesota 22-23
- Redstart, American, 11, 129
- Roberts, Thomas S., Heron Lake through the years, 74-77; early rambles of a bird lover in Minnesota, 77-83
- Robin, 5, 6, 11, 48, 65, 83, 123, 128
- Ruff, 63, 67, 125, 130
- Sanderling, 127
- Sandpiper, 96
 Baird's, 125, 127
 Buff-breasted, 13
 Least, 125, 127
 Pectoral, 13, 127
 Semipalmated, 127
 Solitary, 11, 96, 127
 Spotted, 96, 125, 127
 Stilt, 13, 127
 Western, 9, 13, 127
 White-rumped, 13, 125, 127
- Sapsucker, Yellow-bellied, 14, 18, 47, 125, 128
- Sargeant, Alan B. and James E. Forbes, mortality among birds, mammals and certain snakes on 17 miles of Minnesota roads, 4-7
- Savaloja, Terry, Hawk Owl observation in Aitkin County, 19; Varied Thrushes in Mille Lacs County, 25; Gyrfalcon in Aitkin County 25; evidence of Solitary Sandpiper breeding, 96; European Widgeon in Aitkin County, 96; jaegers in Duluth, 136-137; Western Grebe in Duluth, 137
- Sayler, Rodney D., female Barrow's Goldeneye in Minneapolis, 25
- Scaup, 75
 Greater, 9, 13, 126
 Lesser, 46, 57, 58, 59, 60, 96, 126
- Scoter, 13
 Common, 13
 Surf, 13, 126, 135
 White-winged, 13, 126
- Shoveler, 13, 46, 57, 59, 60, 126
- Shrew, 22
 Masked, 117
- Shrike, 14, 22
 Loggerhead, 9, 14, 98, 128
 Northern, 14, 20, 22, 48, 82, 128
- Shorebirds, 8, 10, 13, 75, 84, 98, 99, 124, 139
- Siskin, Pine, 11, 22, 48, 96-97, 125
- Skunk, Striped, 6
- Snake,
 Bull, 4, 5
 Hognose, 4, 5
- Snipe, Common, 8, 47, 127
- Solitaire, Townsend's, 66, 125, 130
- Sora, 6, 11, 13, 127
- Sparrow, 6, 10, 15, 20, 96, 99
 Baird's, 12, 126
 Chipping, 11, 129
 Clay-colored, 11, 129
 Field, 11, 15
 Fox, 9, 11, 15, 22, 48, 83, 130

- Grasshopper, 9, 15, 129
 Harris', 11, 15, 48, 82, 129
 Henslow's, 12, 129
 House, 6, 10, 11, 19, 94, 95, 99, 129
 Lark, 6, 9, 15
 LeConte's, 11, 15, 80, 98, 129, 131-132
 Lincoln's, 11, 130, 134
 Savannah, 126, 129, 132, 134
 Sharp-tailed, 15
 Song, 6, 11, 48, 96, 130
 Swamp, 11, 48, 83, 130
 Tree, 11, 48, 129
 Vesper, 6, 15, 129
 White-crowned, 11, 15, 130
 White-throated, 11, 15, 19, 46, 48, 126, 130
- Squirrel,**
 Fox, 6
 Gray, 6, 10
 Red, 6, 10
 Thirteen-lined Ground, 6
 Tree, 4, 5
- Stanley, Evelyn, notes on the Hooded Warbler in Minneapolis, 133-134
- Starling, 10, 11, 94, 99, 125, 128
- Stork, 119**
 Open-billed, 119
 Woolly-necked, 119
- Swallow, 10, 14, 22, 27, 31, 99, 125, 136**
 Bank, 14, 22, 128
 Barn, 6, 11, 14, 27, 128
 Cliff, 6, 128
 Rough-winged, 128, 136
 Tree, 6, 11, 14, 97, 128
- Swan, 10, 12, 99, 124**
 Trumpeter, 12, 75, 81
 Whistling, 12, 24, 46, 124, 126
- Swift, Chimney, 10, 11, 14, 99, 128**
- Tanager, 10, 18, 99**
 Bay headed, 18
 Scarlet, 11, 64, 82, 129
 Speckled, 18
 Summer, 63-64, 125, 130
 Turquoise, 18
 Western, 62, 125, 130
- Teal, 107**
 Blue-winged, 11, 13, 46, 57, 58, 59, 63, 126
 Green-winged, 6, 13, 57, 58, 59, 60, 126
- Tern, 10, 14, 99, 125**
 Arctic, 125, 130
 Black, 11, 14, 127
 Caspian, 9, 67, 127
 Common, 9, 14, 67, 127
 Forster's, 11, 127
- Tester, John R., David F. Parmalee and Richard J. Och-lenschlager, Black-billed Magpie Nestings in Clay County, 120-123
- Thrasher, Brown, 6, 11, 14, 48, 128**
- Thrush, 10, 14, 25, 99, 125, 134**
 Gray-cheeked, 11, 128
 Hermit, 9, 11, 46, 48, 128
 Swainson's, 11, 128
 Varied, 14, 25, 48, 130
 Wood, 9, 11, 14, 128
- Titmouse, Tufted, 14, 48**
- Towhee, Rufous-sided, 9, 11, 15, 46, 48, 82, 98, 129**
- Tryon, Rachael, Clarke's Nutcracker at Christmas Lake, 20-21
- Turkey, 49-50, 130**
- Turnstone, Ruddy, 13, 127**
- Veery, 6, 11, 128**
- Vireo, 10, 83, 98, 99, 125, 137**
 Bell's, 12
 Philadelphia, 11, 125, 128, 134
 Red-eyed, 11, 128
 Solitary, 11, 128
 Warbling, 11, 128
 Yellow-throated, 11, 128
- Voelker, Brother Theodore, recovery of a banded Rose-breasted Grosbeak, 24-25
- Vulture, 17, 18**
 Egyptian, 18
- Hooded, 18
 Lappet-faced, 17
 Ruppells Griffon, 17
 Turkey, 9, 10, 11, 13, 124, 126
 White-backed, 17
 White-headed, 17
- Warbler, 7, 8, 10, 14, 17, 20, 81, 83, 84, 98, 99, 125, 133, 134, 138**
 Bay breasted, 11, 129
 Black-and-white, 11, 14, 17, 129
 Blackburnian, 11, 17, 129
 Blackpoll, 11, 14, 129
 Black-throated Blue, 9, 11, 15, 17, 129
 Black-throated Green, 11, 17, 96, 129
 Blue-winged, 14, 17, 81
 Brewster's, 14, 99-100
 Canada, 11, 14, 17, 129
 Cape May, 11, 14, 17, 98, 129
 Cerulean, 9, 12, 17, 133
 Chestnut-sided, 11, 17, 96, 129
 Connecticut, 9, 11, 15, 98, 125, 129, 134
 Golden-winged, 11, 17, 81, 98, 99, 100, 129
 Hooded, 17, 65, 125, 130, 133-134
 Kentucky, 11, 17, 125
 MacGillivray's, 11
 Magnolia, 11, 17, 129
 Mourning, 9, 11, 96, 129
 Myrtle, 11, 14, 46, 48, 82, 125, 129, 133
 Nashville, 11, 14, 17, 125, 129
 Orange-crowned, 11, 14, 125, 129
 Palm, 11, 14, 125, 129
 Parula, 11, 14, 129
 Pine, 9, 14, 98, 129
 Prairie, 17
 Prothonotary, 14
 Tennessee, 6, 11, 14, 124, 129
 Wilson's, 11, 65, 129
 Worm-eating, 11, 17
 Yellow, 11, 17, 82, 129, 138
- Waterfowl, 9, 56-61, 107**
- Waterthrush,**
 Louisiana, 11, 12, 95-96
 Northern, 11, 129
- Waxwing, 10, 99**
 Bohemian, 14, 48, Front cover, No. 3, 72, 82, 128
 Cedar, 11, 48, 128
- Weasel, Short-tailed, 6**
- Whip-poor-will, 9, 11, 12, 128**
- Whimbrel, 13, 127, 139**
- Widgeon,**
 American, 13, 46, 75, 96, 126
 European, 67, 96
- Willet, 75, 127**
- Wolf, 101, 102**
- Woodchuck, 6**
- Woodcock, American, 6, 8, 11, 100, 127**
- Woodpecker, 10, 14, 18, 99, 125**
 Black-backed Three-toed, 14, 47
 Downy, 11, 18, 47
 Hairy, 11, 18, 20, 47, 128
 Ivory-billed, 18
 Northern Three-toed, 14
 Pileated, 11, 18, 47
 Red-bellied, 9, 47
 Red-headed, 6, 11, 47, 128
- Wren, 10, 31, 99, 107, 125**
 Carolina, 14, 24, 48, 125, 130, 138
 House, 6, 11, 128
 Long-billed Marsh, 11, 128
 Short-billed Marsh, 11, 128
 Winter, 11, 96, 128
- Wyatt, Mrs. W. H. Minnesota's third Ruff, 63; Cattle Egret's nesting at Pelican Lake, 100
- Yellowlegs,**
 Greater, 9, 13, 98, 127
 Lesser, 13, 127
- Yellowthroat, 6, 11, 72, 129**

PURPOSE OF THE MOU

The Minnesota Ornithologists Union is an organization of both professionals and amateurs interested in birds. We foster the study of birds, we aim to create and increase public interest in birds and promote the preservation of birdlife and its natural habitat.

We carry out these aims through the publishing of a magazine, **The Loon**; sponsoring and encouraging the preservation of natural areas; conducting field trips; and holding seminars where research reports, unusual observations and conservation discussions are presented. We are supported by dues from individual members and affiliated clubs and by special gifts. The MOU officers wish to point out to those interested in bird conservation that any or all phases of the MOU program could be expanded significantly with gifts, memorials or bequests willed to the organization.



SUGGESTIONS TO AUTHORS

The editors of **The Loon** need articles, shorter "Notes of Interest" and black/white photos. Photos should be preferably 5x7 in size. Manuscripts should be typewritten, double-spaced and on one side of the sheet with generous margins. Notes of interest should be generally less than two typewritten pages double-spaced. If reprints are desired the author should so specify indicating number

required. A price quotation on reprints will be sent upon receipt of information.

Club information and announcements of general interest should be sent to the Newsletter editor. See inside front cover. Bird-sighting reports for "The Season" should be sent promptly at the end of February, May, August and November to Mrs. Janet Green. See inside front cover.

TABLE OF CONTENTS

VIRGINIA RAIL

Photo by W. H. Wyatt Front Cover

THE PRESIDENT WRITES 107

THE BIOLOGY OF OSPREYS IN MINNESOTA

by Thomas C. Dunstan 108

OVERWINTERING SAW-WHET OWLS IN CLAY COUNTY

by Tim L. McCabe 114

A BIRD TRIP ON THE ZAIRE RIVER

by John Hart 118

BLACK-BILLED MAGPIE NESTINGS IN CLAY COUNTY

by David F. Parmalee, John R. Tester
and Richard J. Oehlenschläger 120

THE 1973 SPRING SEASON

by Robert B. Janssen and compiled
by Oscar L. Johnson and John Mehaffy 123

NOTES OF INTEREST 131

BOOK REVIEWS 137

INDEX TO VOLUME 45 140