

The LOON

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PURPOSE OF THE M.O.U.

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



Greater Prairie Chickens on Booming Ground by Dr. W. J. Beckenridge.

discussions are presented. We are supported by dues from individual members and affiliated clubs and by special gifts. The M.O.U. officers wish to point out to those interested in bird conservation that any or all phases of the M.O.U. program could be expanded significantly with gifts, memorials or bequests willed to the organization.

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The President Writes . . .

HOW TO GET MORE OUT OF YOUR BIRDING

In a personal letter about 40 years ago famous naturalist Ernest Thompson Seton advised me to go afield as often as I could, to observe nature first-hand as much as possible, to keep careful notes on whatever I observed in the field, and to join organizations devoted to nature study and conservation.

That advice from Seton is still good today. Follow it and you are sure to get more out of your birding.

The easiest sort of birding records to keep are checklists. If you have not been filling one out for each trip afield, send \$1.25 plus 15 cents for postage to the MOU treasurer for 50 of these cards or they are available at 10 cents each. Each one lists all bird species normally occurring in Minnesota. Use one card to check off the names of species you see on each field trip, and add a word or two about the date, where you went, the weather, and who went with you. To mark a checklist takes only a couple of minutes, and it gives you a valuable permanent record of each birding jaunt.

Keep permanently one checklist on which you mark year after year the names of all species that you identify in your yard or on your land. And each year devote one checklist to marking all species that you see that year.

Besides a checklist for each day of birding, a checklist for your property, and a checklist for each year, you should also keep a lifetime list of all species you have identified. The easiest way to do this is to underline bird names in your copy of some bird book that includes all North American species.

If it has not been done for your area, you might like to tabulate year after year the migration dates of all species. Or it would be interesting and valuable for you to chart all data you can collect year after year on nests and nesting.

If you have the inclination for it, the real pleasure of record keeping will be yours if you keep a journal or nature diary such as Audubon, Thoreau, Seton, and other naturalists kept. Use a bound notebook and date each entry. Write about whatever you have seen and experienced in the field. Years after you might have forgotten your most interesting experiences you can relive them by turning to the early pages of your journal.

Turning back 35 years or more in my journal I find an account of the Great Horned Owl I found dead, pierced through with porcupine quills. There's also the Peregrine Falcon that I watched dropping a small rodent from high in the air, then catching it before it reached the earth. Tiring of that finally, the Peregrine came to the pond where I was watching Avocets. But instead of dining on Avocet, the hawk was chased by Avocets until he beat an ignominious retreat—much unlike what I had read about Peregrines. My journal reminds me, too, of the first time I saw a Sandhill Crane, how it spiralled down above a little lake, calling loudly and dangling its legs straight downward, and how it landed in the marsh and strode off into the reeds. Without my journal, all these things would be only dim memories, or completely forgotten, by now.

When you observe something of special interest, you should share it with the rest of us by writing it up in 300 words or less (preferably double-spaced typing) and send it as a "Note of Interest" to the editor of THE LOON. Or make it a full-scale article if it merits full length treatment.

Follow Seton's advice and keep records and you will derive more of value from your birding. For bird study is like any other avocation: The more you put into it, the more you get out of it.

Robert E. Turner

EDITOR, THE LOON

This is going to be a somewhat nostalgic piece but it is hard not to be after editing this publication for the last 11-1/2 years.

To get right directly to the point, I am going to step out of the position as editor of The Loon. I feel it is time to inject some new blood into the magazine and let someone else have a chance to have a say. My style was oriented towards geographical distribution of Minnesota birds and since that first issue way back in March, 1959, it is obvious to see that this is what I have concentrated on. There are many other ways, and no doubt, better ways, to edit this publication. With the new era of conservation and ecology, possibly the Loon should go off in this direction with concentration on Minnesota, but that would be up to the new editor. Other directions could be to include more of Minnesota natural history, not just concentrate on birds. With an editor more versed in journalism and writing than I, the magazine could take the direction of a publication such as the Atlantic Naturalist or a more popular course such as that of the "Blue Jay", the fine publication of the Saskatchewan Natural History Society.

The M. O. U. membership has never been very vociferous in regard to telling the editor what to do, possibly this should change in the future. Very few times in the last eleven years have people verbally or in writing, negatively criticized the Loon. For that matter, neither have there been too many positive comments. This should change. The organization should let the editor know what it wants. On the other hand, and I have tried to follow this policy, the editor must at times publish material that the membership should read even if it doesn't necessarily want this type of material. Members of any organization need exposure. Hopefully, with a new editor and consequent new blood, the membership rolls will rise. It is troubling to be faced with the fact that that the Minneapolis Bird Club has nearly 1,000 members in Minneapolis alone while the M. O. U. has barely 700 in the whole state. A new policy is needed to involve more birders throughout Minnesota. I believe a new editor would help in this venture.

I remember so well over eleven years ago at the 1958 December paper session of the M. O. U., Jack Hofslund had just retired from the editor's job when Dr. Breckenridge and Dwain Warner were scurrying around the Museum looking for a new editor. Sounds somewhat like the M. O. U. doesn't it? Just before the nominating committee took the stand, Dwain Warner saw me and in the flurry I said "yes". It has been a great eleven years but I want to devote time to our book on Minnesota birds and I have just come back from a visit to Arizona. Wow! ! - what great birds are to be seen and studied in this area.

The M. O. U. needs new direction. The next editor can give it just that.

Robert B. Janssen

PRAIRIE CHICKEN EXODUS:

Notes on the Prairie Chicken in Central Minnesota

by Max Partch

The Greater Prairie Chicken or Pinnated Grouse was probably not native to central Minnesota. Sometime about the middle of the 19th century it moved into central Minnesota onto acquired range where it thrived successfully for a number of years with, and perhaps because of, early farm settlement. Intensified agricultural practices, and no doubt other factors, eventually brought about a decline, which, by the mid 20th Century, had all but eliminated the Prairie Chicken in central Minnesota. The map of Prairie Chicken distribution in Minnesota presented by Farnes, Erickson, and Stenlund in 1960 shows a narrow extension southward into central Minnesota. The last of the dwindling resident population in this marginal area is now apparently gone. Central Minnesota was not included on a map of Greater Prairie Chicken range as of 1968 by Christisen (1969). It is hoped that some of the records presented here will be of historical interest.

The history of the Prairie Chicken in central Minnesota is part of the general state-wide invasion pattern. The dates on Fig. 1 illustrate the extension of the Prairie Chicken range from south-eastern Minnesota where it was reported scarce in 1839 to the north-western corner where it put in its appearance in 1881.

The following excerpts from the literature are a guide to the map. Authors do not agree on the original range.

Roberts (1936) states, "There were no Pinnated Grouse in Minnesota in the days of the early explorers," and "It entered the state from the east and south sometime previous to the middle of the nineteenth century and spread rapidly west and north with

the settlement of the country." He states further, "The Pinnated came . . . at various times during the early half of the nineteenth century."

Leopold (1931) included a line on a map of Minnesota which was the "probable original N. boundary of Pinnated range and S. boundary of Sharp-tail." This dotted line runs through Dakota County. (Dotted line "L" on Fig. 1). However Leopold also says that the Prairie Chicken was "still scarce" in southeastern Minnesota in 1839. This may indicate recent invasion and not necessarily original range.

Schorger (1943) presents a map of "probable original breeding range of the Prairie Chicken in Wisconsin" which indicates this species may have ranged north to the vicinity of Hudson, Wisconsin. If so, it seems unlikely that it would not also have been in Minnesota. ("S line on Fig. 1).

Leopold (1931) quoting Kumlien and Hollister (1903) says, "In the early forties (1840's) it was rather rare in southern Wisconsin and at the present time (1903) has almost entirely replaced the Sharp-tail." This may imply an invasion not too much before the forties. Leopold's line of the "probable original N. boundary of Pinnated range" runs east-west in the northern tier of Illinois counties. The Prairie Chicken evidently either moved northward into Minnesota and Wisconsin at about the same time or it was in the prairies of Minnesota before it invaded Wisconsin. The problem remains.

The Prairie Chicken had probably not advanced to the Twin Cities during the 1830's. Leopold (1931) says of a statement by Hatch (1892), "Unfortunately Hatch does not record

1858, extolling the virtues of central Minnesota states, "Our venison is fine at ten cents per pound, rabbits, prairie hens, partridges, ducks, etc., plenty." Here we do not know if "prairie hen" means Pinnated Grouse.

The Prairie Chicken was advancing northward on the relatively narrow belt of grassland found on the outwash along the Mississippi River. It was not at Fort Ripley in 1853. Roberts (1936) quotes Coues (1874) who said that Dr. Head had admitted the mistake in reporting the Pinnated Grouse at Fort Ripley in 1853. Instead "the grouse reported was really the Sharp-tailed and that the Pinnated being only just now approaching that locality. For in September (1873) the Doctor, with some friends, shot a young but full-grown solitary **T. cupido** . . . 'so far as I know', he writes, 'the first instance of its occurrence in this vicinity'."

However Roberts also reports an observation by Haviland "telling of the great numbers of Sharp-tailed, Pinnated, and Ruffed Grouse killed in the vicinity of Brainerd in the fall of 1874." And yet in 1875 Hope reported the Pinnated only "occasionally met with" about Brainerd.

The advance was slower northeastward from the Morrison County area into the forested area but according to Roberts (1936), "in the cut-over land in the Mille Lacs region, (it had) established itself as early as 1885."

Although the Prairie Chicken reached Fort Ripley in 1873 it was not then in the Red River Valley. Roberts (1936) says, "Dr. Coues, in 1873 did not find it in the Red River Valley, the Sharp-tail being then the grouse of that region; but in the fall of 1881 the writer (Dr. Roberts) saw three among a number of Sharp-tails killed near Hallock, Kittson County, and was told by residents that it had only very recently appeared in that part of the state. Four years later Washburn found it 'abundant' over much of the valley."

Wilcox in the 1907 History of Becker County says that the Prairie Chicken was not known in that county before 1874 or 1875. Maybe due to the confusion of names the "Prairie Chicken" was mentioned as abundant on the "vast and luxuriant prairie" southeast of Breckenridge by "A" in 1858.

Roberts (1936) quoting Dr. Cooke of Moorehead (1885) indicates further for this region, "(in 1879) I found it abundant up to 47° (White Earth, Becker County) and only forty miles from the Dakota line." And "Last fall (1884) I questioned several hunters in the vicinity of Fargo, Dakota and they all agreed that the Pinnated Grouse was about as common as the Sharp-tailed."

It is interesting to note that Dr. Roberts quotes another person for some 1879 data for Becker County but does not include his own 1877 observations. He wrote a penny postcard to his father from Detroit (Lakes), Minnesota on August 25, 1877 saying, in part, "Were out all day yesterday but killed only 13 chickens. Out again today and killed 13 more. They are not plenty (sic)". This would seem to be no real scarcity considering there were none in the valley in 1873. The following day he wrote a letter to his father from Fargo which included the following comment: "Chickens are reported scarce about here though they are said to be abundant (???) farther west!!" (Punctuation as in original letter.)

And finally the Prairie Chicken got to Canada. Cooke (1885) further quotes C. W. Nash of Portage la Prairie, Manitoba as follows: ("This last Autumn (1884) we had a curious influx of the Pinnated Grouse. I imagine that they, like some other birds, are following up civilization, for until last year (1884) none were seen by the Indians and half-breed hunters.")

From "Scarce" in southeast Minnesota in the 1830's to Portage la Prairie in 1884 is roughly fifty years and by the ('prairie route' about five hundred

miles or about an average of ten miles a year.

Neither the speed nor the pattern of invasion was constant in all directions. The pattern of invasion was dramatically expressed by Leopold (1931) when he said, "Evidently chickens invaded this territory, not in concentric waves with a solid front . . . but after the manner of moths invading a carpet, in a multitude of small discontinuous patches gradually spreading from many foci." This pattern was most evident in the forested areas. Perhaps for this reason the advance into northeastern Minnesota was more recent than the prairie invasion.

Roberts (1936) reports, "Kendall says that it began to appear on the Iron Range in west central St. Louis County about 1906 and that by the winters of 1913-1914 small flocks were present in the vicinity of Biwabik and Eveleth, coming apparently from the Superior north shore where it had been present for some time previously in limited numbers." Schorger (1943) reports that in 1883, "It is of exceptional interest that 'Prairie Chickens' were reported quite plentiful near Superior where a hunter shot 15 in one day. These may have been Sharp-tailed Grouse." Roberts further says it was a "permanent resident, breeding . . . in recent years (1930's) in extensive clearings and large openings in the timbered areas north of Cass Lake."

However, the Prairie Chicken populations, like most populations, fluctuated from time to time and from place to place. Even in 1915 Roberts reported that, "Today the Prairie Chickens in Minnesota are reduced to a mere remnant of what they were forty or fifty years ago when the "booming" of the cocks in the mating season resounded through all the southeastern and central part of the state."

In a summary of the Game and Fish Department report (Anon. 1916) it was stated that "Prairie Chickens are few except in a certain limited area.

There are not enough Prairie Chickens and other grouse in Minnesota to warrant shooting them . . ."

The following year Thomy (1917) reporting in the capacity of County Auditor for Stearns County, said, "Prairie Chickens were very scarce, on account of the extremely wet seasons, and consequently a good many people did not go hunting, as that was the only hunting we had around here."

Then the following year Eldred (1918) reported an increase in the Prairie Chickens on the "Morrison County Refuge" as indicated by an interview of residents on the refuge. This was the refuge which occupied "twenty five sections between the Platt(e) and Mississippi Rivers." (Fins, Feathers and Fur No. 28, Dec. 1921. Map on page 10 of Minnesota Game Refuges) This is also the general area where the author reports Prairie Chickens up to 1963. By 1925 the Prairie Chickens were numerous around Little Falls (Anon. 1925) as it was in many areas. Mrs. Greer, secretary of the Game Protective Club of New London, reported an increase in Kandiyohi County (Anon. 1927).

About the time of the next so-called high of the cycle, Roberts (1936) could give as the Minnesota Range, "Generally distributed . . . throughout the prairie and open woodlands of the state . . ." Numbers have continued to fluctuate with a general downward trend especially in the southern half of the state because of grassland destruction and in the forested areas because of the revegetation of the old openings.

Routes of Invasions

There were probably three main routes along which the Prairie Chicken advanced into Minnesota north of the 45th parallel. Due to the presence of grassland vegetation the southwest and western edge of Minnesota was potentially available in pre-settlement times. The chickens however seemed to advance along with the advent of farming in these areas ac-

ording to most reports.

A series of articles in the St. Cloud Democrat during September 1858 by "A", who had taken a trip from St. Cloud to Breckenridge during the previous July and August, mentions the "Prairie Chickens" and also the extent of cultivation. The area west of St. Cloud to St. Joseph was described as "prairie and oak openings, considerably cultivated." This was the area where Pinnated Grouse probably existed in some numbers in 1860 as previously quoted. In the Sauk [River] valley, "thirty-seven miles from the Mississippi at St. Cloud," mention was made of "good fields of corn on soil never cultivated before this season." (Sept. 9, 1858) By 1860, in Sauk River valley, "Raven" had found the Sharp-tailed Grouse increasing in abundance as he travelled west, "while the Pinnated nearly disappeared." Significantly, the Pinnated was present in the newly cultivated areas.

The next issue of the St. Cloud Democrat (Sept. 16, 1858) contains notes of the journey on July 20, 1858 as the travellers went from Sauk Centre into Douglas County. "The grass is everywhere thick and luxuriant. We have today seen an abundance of feathered game. Plovers and Prairie Chickens are the most numerous but the largest are Sandhill Cranes. Arriving at a pretty lake (called Chicago) at 6 p.m., where we camp, having traveled twenty four miles. We have come a circuitous route in order to get around different belts of timber. We have not seen a single house." The "Prairie Chickens" in this area of no houses were most likely Sharp-tailed Grouse. Thus it is likely that the Prairie Chicken first invaded the Red River Valley from the Minnesota River Valley, not from the vicinity of the Mississippi-Sauk River Valleys in central Minnesota. A thorough search for historical clues to the movement and populations of Prairie Chickens in the entire southwest quarter of Minnesota might be very revealing.

Another corridor seems to have

been northward through the western edge of Wisconsin and extreme east central Minnesota where logging and fires easily created favorable openings in the sandy areas. It was along this route that the birds reached the vicinity of the city of Superior from which they apparently entered the cutover lands and meadowlands north of Duluth and eventually reached the Mesabi Range.

The third route occurred in central Minnesota where a combination of geological history, vegetation pattern, and human culture all played a part. Much of central Minnesota was, and is, potentially an area of dense upland hardwood forest. The significant exceptions are the areas of drouthy glacial outwash. Such an area occurs as a long narrow strip along the Mississippi River from Crow Wing County to the Twin Cities. This sandy belt, of varying widths, had probably been essentially grassland for centuries aided by ecological conditions and by the fires set by Indians. Other outwash areas were also easily converted to grasslands before and after settlement. Such sand plains in central Minnesota, including the extensive meadows, seem to be the prevalent type of acquired range which the Prairie Chickens invaded. This is probably similar to the "type 4 Sand Plains" of Leopold (1931).

There is speculation as to why the Prairie Chicken had not invaded these areas previously. Of course the inability to invade forest areas until the proper openings were available seems self evident. Some grassland areas may not have been open enough, i.e. they were too brushy, so that in combination with Sharp-tail competition the areas were not invaded. In one such area the author has made observation since 1953 as reported below. This area was named "Rich Prairie" and described in a county history by Fuller (1915) as a prairie, "which is about four miles wide and reaches eleven or twelve miles from the middle of Pierz [Township], south

through the west part of Buckman and the east edge of Bellevue, continuing on into Benton County. These are mostly 'brush prairies', having much hazel and oak brush, prairie willow, red root and sand cherry."

In central Minnesota the size of the grasslands may have been too small for large populations. Some such areas may be less than a mile wide to just a few miles wide. Also, due to the difference in glacial history, the carrying capacity of these sandy areas would certainly have been less than the much more fertile and mesic grasslands in southern and western Minnesota. If the area was basically marginal than most other Prairie Chicken range to begin with, such factors as periodically unfavorable climatic conditions and even Indian pressure could have prevented the establishment of the Prairie Chicken in central Minnesota.

No doubt the main reason that farming tended to cause the spread and increase in chicken population was its effect on carrying capacity; it created, at least temporarily, bigger and better disturbed grasslands and it produced a bigger and better plant and insect food supply. There are many records of an abundance of birds on the newly acquired range.

But all was not perfect in "chicken-ville." The new farm fields also helped to increase grasshopper populations. The area west of St. Cloud was purchased from the Indians in 1852. Settlement soon followed. A long article on grasshoppers in the St. Cloud Democrat for Aug. 19, 1858, states, "This region was but in it's third year from the beginning of its settlement when they appeared." In the Aug. 5, 1858, issue of the same paper the statement is made that "In the fall of '56 grasshoppers came in St. Cloud and settled down in this and adjoining counties destroying the greater portion of the crops." The depredations continued. Many articles in the newspapers during the 1870's told of the serious situation. One article in the St. Cloud Times for August 19, 1874 stated that

"millions of grasshoppers passed over the city last Monday about 2 p.m." Farmers were advised not to burn the prairies in fall but instead, "burn them in spring to kill grasshoppers." A lengthy article in the June 2, 1875 issue discussed various methods of fighting the grasshopper plague. A bounty of \$4 to \$5 per bushel, among other methods, was suggested. Someone figured that there were 320,000 grasshoppers per bushel. LeSueur, Minnesota adopted a plan to pay twenty cents per quart. One June 16, 1875, there was a mass meeting in Mankato to discuss the destruction of the grasshopper. \$15,000 had already been spent in Blue Earth and LeSueur Counties.

The St. Cloud Times for June 16, 1875 reprinted an article from the Hartford (Conn.) Courant with the headline, "The Grasshopper Plague—How it Might Have Been Averted." It continues, "The marvel is that the grasshopper plague does not sweep over the whole region, when we read of the wanton destruction of birds. An item in a Chicago paper lately stated that 10,000 quails and Prairie Chickens were fed to swine in a single day in that city . . . On one day there stood on the corner of two streets a wagon containing 180 dozen Prairie Chickens. The birds must soon disappear before such reckless slaughter. Yes, the birds have disappeared almost entirely from many western localities and grasshoppers and other noxious insects have multiplied and swarmed forth to spread famine and desolation."

Chickens on the Decline

The following records were supplied by various observers. I am indebted to Nestor Hiemenz of St. Cloud for his extensive observations in central Minnesota in the 1930's.

Stearns County has a wide north-south forest belt, largely avoided by early travelers, separating the large fertile grassland area in the western part of the county from the relatively restricted sandy grassland areas on the outwash near the Mississippi Riv-

er. Prairie Chickens have been observed mostly in the two grassland zones or in the Sauk River valley which connects them.

The Hiemenz records for Stearns County are as follows:

Spring and Summer

- 1934 Apr. 14 St. Cloud (1)*
- 1934 Apr. 24 Pleasant Lake (1)
- 1934 May 4 Collegeville (1)
- 1935 Apr. 14 Cold Spring (2)
- 1935 Apr. 21 Avon (1)
- 1936 Apr. 12 Pine Point (1)
- 1937 April 15 Richmond (1)
- 1937 May 15 Sauk Centre (2)

Fall and Winter

- 1933 Mar. 25 St. Augusta (1)
- 1933 Oct. 14 Sartell (11)
- 1935 Mar. 24 Richmond (10)
- 1936 Oct. 28 Pine Point (1)
- 1964 Mar. 22 Pearl Lake (2)

* Number seen

Grewe reports two chickens northeast of Paynesville as recently as June 1950 and two on the Winnebago Prairie north of Sartell in May 1956.

Although no attempt has been made to obtain records in the prairie area southwest of the deciduous border, I have one report of a Prairie Chicken having been killed by a mower in Kandiyohi County, Whitefield Township, Sec. 14, on the Lloyd Johnson Farm about 1940. This sounds like a nesting record.

Hiemenz has a single record from Hermit Lake in Wright County of one bird seen May 25, 1934. He also reported seeing two on January 3, 1934 near Watkins in Meeker County.

Roberts (1928) reported in Bird Lore, "Mr. Paul Eiffert living near St. Cloud (Sherburne Co.), writes, 'Game birds suffered much the past winter and . . . due to the ravages of the murderous Goshawks and the severe cold and deep snows of December, the . . . Prairie Chickens are exceedingly scarce this spring.'"

During an interview with Wallace Scherfenberg concerning Haven Township, Sec. 18, in Sherburne County,

he reported Prairie Chickens "plentiful up to 1929." He said, "then the pheasants came in and then fox in 1933-1935 and cleared out everything." He reported that in 1951 or 1952, "When combining soy beans, four chickens were there for a long time." This is only about two miles from the "Reformatory Meadows" in which Hiemenz reports Prairie Chickens only up to the mid 1940's.

The Hiemenz records for Sherburne County are as follows:

Spring and Summer

- 1931 July 1 Briggs Lake (8)
(female and 7 half-grown yg.)
- 1934 Apr. 10 Ref. Meadows (3)
- 1934 Apr. 13 Clear Lake (1)
- 1935 Apr. 23 Ref. Meadows (2)
- 1937 Apr. 27. Ref. Meadows (1)
- 1937 May 14, Ref. Meadows (2)

Fall and Winter

- 1931 Nov. 1 Santiago (100)
- 1932 Nov. 6 Santiago (25)
- 1933 Oct. 15 Santiago (2)
- 1933 Nov. 12 Santiago (3)
- 1935 Feb. 17 Beaver Island (10)
- 1936 Oct. 28 Ref. Meadows (4)

The area referred to above as "Reformatory Meadows" is east of the St. Cloud Reformatory and primarily occupies parts of Sections 4 and 5 of Haven Township. In this locality the Prairie Chicken persisted into the 1940's. In 1942 Hiemenz observed two on April 28, five on May 1, six booming on May 10, and five on May 15. Two nests were found, one with four eggs and one with sixteen. In 1944 two were seen on April 30, one on May 22 and two June 1. In 1945 the only bird seen was on June 3 plus a nest with ten hatching eggs. Hiemenz says that from 1947 on he searched the area many times but never again saw any Prairie Chickens at this location. The booming ground was in the SE 1/4 of Sec. 5 on State Reformatory land. The area is part of a wide glacial river bed. There is but slight topographic relief; the area was ditched long ago because of the high water table. Tall prairie grassland interspersed with sedge meadows was the

dominant vegetation in the past. The actual booming ground was on a slight knoll which was usually mowed for hay. Some of this area is now occupied by aspen thickets and by areas of such lowland shrubs as willow, red-osier dogwood and bog birch. The area is just west of the new St. Cloud Airport now under construction.

Several letters in the files of the Bell Museum of Natural History from Bernard Bailey of Elk River add to the Prairie Chicken records for that area. Since Bailey lived eight miles northeast of Elk River it is not definite whether he was speaking of Sherburne or Anoka County. Excerpts from his letters follow:

Feb. 19, 1917 "Rare throughout the county though a few still breed in nearly all parts. Nearly every section of suitable land raises a brood nearly every year."

Dec. 19, 1922 "Prairie Chickens more common than I ever saw them before."
Feb. 6, 1923 "Prairie Chickens increased the last half of October (1922) and until Nov. 10, when they were present by hundreds everywhere; remaining about the same until about Dec. 15th when they flew off to about one third to one half of their former number."

In 1957 I talked with Andrew Thoen who moved to Benton County, Graham Township, in 1880. He reported many Prairie Chickens in that area "many years ago." This may not have been in 1880 because he said that at first it was all timber-land on the uplands interspersed with meadow and that the birds "crowed" on the fields. The birds "crowed" on some of his land in Section 23 up the early 1940's. He said that the "White-breasted Grouse" were there at the same time.

The Prairie Chicken was reported south of Rice in the early 1930's, at least in the fall, since Grewe said his father "shot three or four out of a flock of about a dozen" in Watab Township, Sec. 15. Hiemenz saw only one chicken near Little Rock Lake in April 1934 and one one in April 1937.

David Christiansen, who formerly lived near Pine Point in Watab Township, Sec. 22, Benton Co., supplied the following observations. "The first time I observed these birds was in the fall of 1949. I never observed more than three or four at any one time. They were fully matured individuals; I never observed any young ones. They were rather slow in flight, in fact I just about picked one off with a corn cob. Most of our tillable land is on the prairie which extends uninterrupted north toward Rice. The birds seemed to feed mostly in the corn fields. After about four years in the region, 1949-52, I never observed them again."

Maybe it is significant that most of the recent records for the Rice area are for dates not in the breeding season. Six were seen by Grewe on October 24, 1956 about one mile southeast of Rice near where corn was being harvested. Fourteen were seen by Grewe just east of Rice during the same fall and seven in the same area in February 1958. During December 1957 four chickens were seen about one mile west of Rice. Another observer reported seeing two about January 1, 1957 along the railroad about two miles north of Sartell.

Morrison County also experienced the same decline following the 1925 year of abundance. Hiemenz observed five near Pierz in August 1932 and only one at Little Falls in June 1933, but saw a female with a brood one-third grown near Buckman on July 28, 1935. In a conversation with G. Henneh it was learned that there were "big flocks of Pinnated Grouse in late fall of 1937" about seven miles north of Ramey in Hillman Township. He said there were still a few there in 1960.

Hiemenz has spring and summer records of Prairie Chickens seen in five central Minnesota counties during the 1930's which surely suggest remnant breeding populations. The number seen in each locality is strikingly low considering the impressive number of localities. This could indicate that the birds were decreasing

at the same time over a relatively large area.

The Decade of Disappearance

I first started searching for Prairie Chickens in central Minnesota in Benton County during the early morning hours of April 28, 1953. After getting hopelessly stuck in the loose sand about one mile north of Little Rock Lake, I learned from a helpful farmer with a powerful tractor that Prairie Chickens "boom" in the upland hills of Langola Township, Sec. 23 just to the north. He said that one half mile north of his place, in Sec. 24, he had flushed a few chickens a couple days before while burning the meadow. On May 4, 1953 Al Grewe and I observed and heard two males booming in Sec. 14. Two birds were observed again on May 8. Joe Miller has lived on the west side of Sec. 13 since 1913. He said, in 1953, that he had heard Prairie Chickens every year, "except a couple years about four years ago." He indicated that there used to be many in Sec. 13 but for some time before (1953) he heard them only in Sec. 14.

In the spring of 1954 no Prairie Chickens were seen or heard in Langola Township of Benton County although the area was visited several times. Joe Miller had seen, "one or two during the winter but no pairs or young ones the previous year." A young pine windbreak was beginning to show above the grasses in the booming area. The area had many pine windbreaks by 1958. Today the area looks like a young pine forest.

A search was begun further north in Morrison County where, in the western part of Buckman Township (T. 39 N. R. 31 W.) on the south side of Sec. 23, two chickens were observed on the morning of April 11, 1954. (See Fig. 2) They flushed out of a corn stubble field, flew north over a low meadow, and landed at the edge of the upland near a hay stack. Goehring, Grewe and I watched them walk around for several minutes. No booming was heard.

The following morning, April 12, John Zorichak and I located eight Prairie Chickens in Sec. 14 after following the booming sound for more than one and one half miles. On the morning of April 15, I was accompanied by six college students. Six chickens were again seen in Sec. 14 but due to wind the booming was subdued and sporadic. Six were also observed the following morning. One of the seven seen on April 25 was perhaps a female. This Sec. 14 booming ground was in a sandy field planted to a winter grain. The young flattened plants did not cover much of the bare soil, so that Prairie Chicken tracks (and pheasant tracks) and the individual "stomping" territories could be seen. There were several poorly vegetated "blow out" areas nearby but to the east was a large tract of dense big blue stem grass with scattered small bur oak trees and oak grubs.

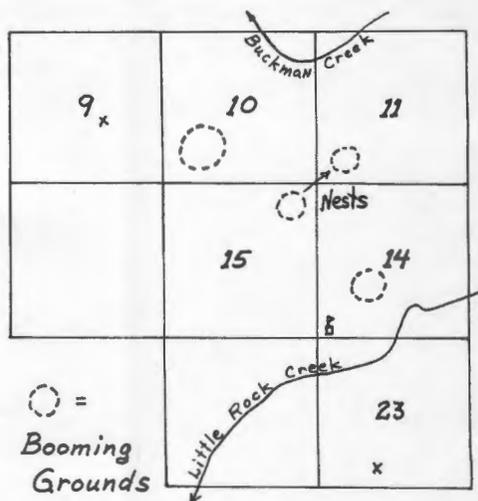


Figure 2. Location of booming grounds in part of T39N R31W in Morrison County.

A hunter reported shooting two chickens "by mistake" in or near Sec. 14 during the fall of 1954. During September and October of 1954 Fremling reported seeing 1-2 Prairie Chickens in a buckwheat field near the center of Sec. 9 over two miles westnorthwest of the Sec. 14 location. A single chicken was flushed from the same buckwheat field in January 1955.

On April 8, 1955, four Prairie Chickens were observed booming on a mostly bare area of winter grain near the northeast corner of Sec. 15. Other booming was heard westnorthwest. On April 10 no birds were seen in Sec. 15 so we proceeded westnorthwest to the southwest corner of Sec. 10 where four were discovered booming in a pasture. Another bird present was possibly a female. On the way back east we heard booming in the southwest corner of Sec. 11 and flushed four which flew east to an area of bur oaks. These four may have been displaced from Sec. 15. At least, in the immediate vicinity of this "Buckman prairie" area, part of Fuller's "Rich Prairie," the birds are known to have boomed in four different sections of land.

On April 22, 1955 six Prairie Chickens were seen booming on the Sec. 15 booming ground and seven, not all booming, in Sec. 10. On this date, midway between these latter two booming grounds, two adult red foxes with pups were seen. Four carloads of eager observers were on this trip.

The booming ground in Sec. 10 continued to be the most reliable area in which to observe the chickens. It was an essentially flat, closely grazed pasture on sandy soil. There were some slightly lower areas of weedy growth and sedge. A pond near the booming ground was occupied by a delightful variety of aquatic birds and mammals. In recent years even Sandhill Cranes have been observed in the area.

The most birds ever seen at the Sec. 10 booming ground was seventeen recorded April 20, 1956. The same morning none were seen or heard in sections 14 or 15. Otherwise the counts for 1956 were as follows.

T.39N. R.31 W	Sec. 10	Sec.15	Sec. 14
13 April 1956	6m., 1f.	1	4
15 April 1956	12	0	2+1 in tree
20 April 1956	17	0	0
8 May 1956	7	0	2
16 Sept. 1956	8-12 flushed near Harris farm NE 1/4 of Sec. 10 (Zorichak)		

In a letter from Zorichak, he says, "I specifically recall the three nests that were found. The location was in the NW 1/4 Sec. 14 of 39N-31-W, in an area of less than five acres, and in what appeared to be undisturbed prairie sod. Each nest contained fourteen eggs. The date is uncertain—early June—1956? A subsequent visit to the site revealed that the nesting ground was successful, and in one nest one infertile egg was found."

In the afternoon of March 30, 1957, Goehring and I visited the booming ground in Sec. 10 and found Prairie Chicken droppings and feathers indicating use of the booming ground. We met and talked with Mr. Charles Zehlke, the land owner, who had lived there since 1947 at which time there was a "very small flock." He said that with protection the birds had greatly increased.

The following morning thirteen birds were seen booming in the pasture near a fence and the small pond. One group of five was somewhat separated from a group of eight. We were looking for a good location for a blind. The numbers observed in 1957 on the Sec. 10 booming ground are as follows:

Mar. 31	13
Apr. 13	14
	Erected blind with J. Long
Apr. 15	12 and 2 females
Apr. 15	12
Apr. 18	11 and 4 females
Apr. 19	blind demolished by storm
Apr. 20	8 in afternoon
Apr. 21	3 in afternoon
Apr. 22	9
Apr. 27	11 and 1 female
Apr. 29	7 and 2 hybrids in afternoon
May 8	3 in afternoon
Oct. 8	3 flushed east of booming ground

The behavior and the timing of Prairie Chicken activity is of interest. One bird alighted on the fence wire and later walked on top of the blind. At one time it stomped its feet and boomed on top of a fence post. An hour and a half later it again boomed five

times on the post but did not stomp first.

On April 18, 1957 the blind was tipped over when we arrived. The first chicken came in close while we were re-locating the blind at 4:55 a.m. and the first booming was heard at 5:05. At 5:06 six others walked onto the booming ground from the long grass near the pond and at 5:07 four more walked from the same area. The usual behavior is to have the birds fly to the booming ground from some distant point not visible in the pre-dawn darkness. These birds may have been hiding while we were setting up the blind.

At 4:50 a.m. on April 22, 1957 nine were flushed from the booming ground as we approached. This time setting up the broken blind took eleven minutes but at 5:01 chicken "clucking" was still heard in the stubble field to the east and south. The first bird returned at 5:03, "clucking" nervously. The next four flew in at about one minute intervals. They all landed about sixty feet from the blind. There was still no booming. Then at 5:11 a.m. one was heard booming about 200 yards to the south, far from what could be considered the booming ground. It was not until 5:14 a.m. that the group on the booming ground started to boom. Only seven chickens eventually returned after the original disturbance.

On April 27 my wife and I were in the blind at 4:00 a.m. The first booming was heard at 4:15. Between 4:20 and 4:23 a.m. more flew in on all sides and fussed and boomed. During the morning a Sharp-tail hybrid was observed and photographed. This bird had orange brows, purple neck sacs, a barred breast, short pinnae, and a "sharp" tail which was all white beneath. The bird would stomp in one place but could not "boom." Instead it made a single grunt. It ran around with its neck in a low horizontal position. It was a very belligerent bird which spent most of the morning fighting on either the south or the northeast side of the blind. "He" must have been extremely frustrated. The

activity got so intense at one time during the morning that a Prairie Chicken was booming on top of the blind just six inches above our heads.

The following excerpts are taken from the field notes of H. Doty who visited the Zehlke booming ground in the afternoon of April 29, 1957. At 5:40 p.m. (DST) four were flushed as the blind was approached. After fifteen minutes at least one was still feeding about 400 yards east of the blind. Others were evidently moving back toward the blind because three were visible to the east by 6:10 p.m. At 6:20 p.m. he noted, "No change, the birds are extra cautious, we suspect that our shadows are visible through the blind." By 6:48 p.m. seven males were present on the booming ground at which time the first booming was heard. This was over one hour after entering the blind, perhaps illustrating the persistence of the birds. Two other birds arrived at 6:55 p.m. and then he noticed that there were "two purple sackers." If the last two to arrive were the hybrids, is it significant?

Booming was heard in Sec. 14 on March 31, 1957 but no counts were made because of falling snow. On April 13 two chickens were seen in small oak trees in Sec. 14 and another was in a jack pine by the old farm site in the northwest corner of Sec. 14. No birds were seen to use the former booming site in Sec. 15 probably because it had become covered with a rank weedy growth.

In 1958 there was activity as early as February 25 when five males and one female were observed on the Zehlke booming ground in Sec. 10. On March 23 there were ten birds seen but not all were booming. On March 29 seven Pinnated Grouse and one Sharp-tail hybrid were in Sec. 10. That morning two were booming on the "displaced area" near the southwest corner of Sec. 11 in a barren winter grain field. At the same time four were observed in the small bur oaks near the middle of Sec. 14. They were joined by the two from Sec. 11. Even with the six birds visible in the trees

more booming could be heard in the vicinity but no others could be seen.

It was cold, overcast and windy with a light rain on April 4, 1958 when five Pinnated and two Sharp-tail hybrids were seen on the Zehlke booming ground. No chickens were seen or heard in sections 11 or 14. We flushed five chickens from Zehlke's about 5:15 p.m. on April 26, 1958 when we put up a new blind. Grewe and Grether went back to the blind on the foggy morning of May 1 and saw four male Prairie Chickens, one Sharp-tail hybrid, and thirteen Sandhill Cranes. Five male chickens were in Sec. 11.

The area was not visited as frequently after 1958. On March 30, 1959 seven chickens were at Zehlke's. Only three were there on April 24, 1960 but the booming ground was occupied by 60-80 Snow and Blue Geese. No chickens were seen or heard in the nearby sections. Two chickens were flushed from the vicinity of the once used booming ground in Sec. 15 on April 2, 1961 and observed to fly to the west. A short time later seven males were booming vigorously enough at Zehlke's to suspect females in the vicinity. On April 22, 1961 there were eight birds at Zehlke's which did not fly when a Marsh Hawk

made several close passes at the birds and hovered very close. In fact the chickens seemed to "fight back."

I have no data for 1962.

On the foggy and windy morning of April 1, 1963 I walked across the wet pasture at Zehlke's and stood at the west side of the pond before I could count the four booming and fussing Prairie Chickens. Others may have been missed.

On April 25, 1964 I observed five very active and noisy Prairie Chickens on the Zehlke booming ground. These were destined to be the last I would ever see in that area. None were seen or heard in the nearby sections although it may have been too windy to hear well.

In 1965 Goehring visited the Zehlke booming ground with an ornithology class on two different mornings in May and saw only one booming Prairie Chicken each time. Since then, although the area has been visited each year, especially by Grewe, there have never been any Prairie Chickens seen or heard in the area.

The maximum numbers of Prairie Chickens seen at the various booming grounds each year are plotted on Fig. 3.

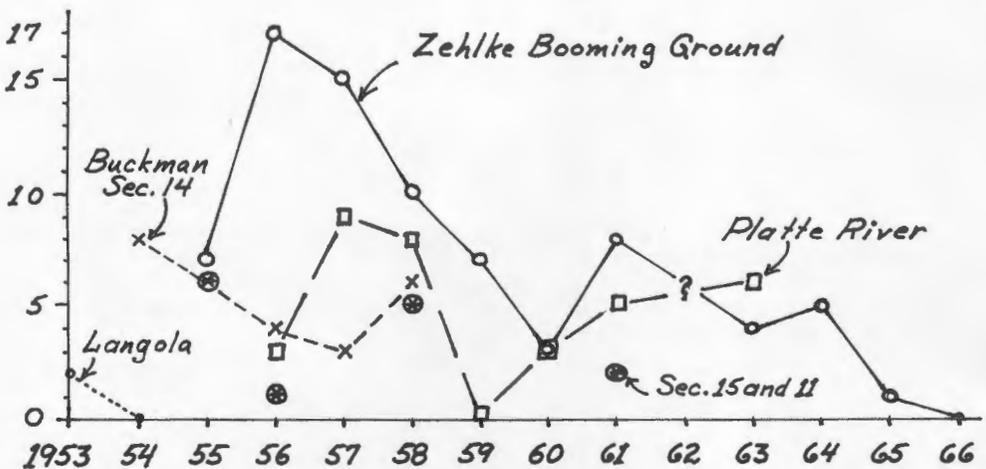


Figure 3. Maximum number of Prairie Chickens seen on booming grounds

In 1956 having heard reports of booming west of Vawter, we investigated and again became stuck. We did however also learn from Leo Brezinka that he had seen Prairie Chickens nesting in 1954 and 1955. (T.39 N. R.32 W., Sec. 2) Mr. Brezinka also reported eight Prairie Chickens seen during the winter of 1955-56. On that morning of April 21, 1956, booming was heard to the east, toward Sec. 1, from three locations in Sec. 2. Near the northwest corner of Sec. 1 four chickens were observed flying to a corn field but no booming was heard again in this location. (See Fig. 4)

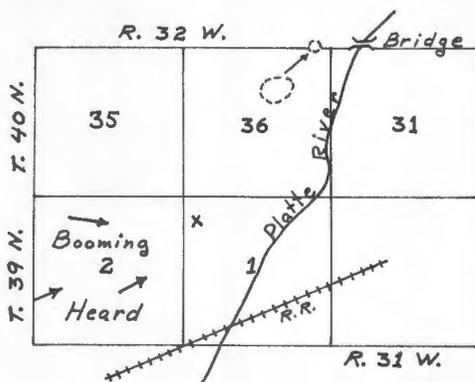


Figure 4. Location of the Platte River booming ground

However, on April 22, 1956, we found a booming ground near the Platte River in Little Falls Township, T.40 N. R.32 W. in the NE 1/2 of Sec. 36. Three birds were seen booming on a bare cultivated field and two others, which may have been females, flew northward to a grassy area. Three Prairie Chickens were again booming on this "Platte River booming ground" at 5:00 a.m. on May 8, 1956.

On April 22, 1957 six males and three female chickens plus three Common Crows were on the Platte River booming ground. The birds were a little farther northeast than the 1956 location on a slightly drier rise of land in an otherwise partly flooded field of sparse winter grain. Last year's booming area, due north of an abandon-

ed farm, was soy bean stubble.

When the Platte River booming ground was visited on March 5, 1958 there were seven males booming, one female, and one Sharp-tail hybrid. None were seen or heard at this site during two visits in March 1959. The booming area was covered with a dense weedy growth. Four chickens were flushed along a sandy roadside in the vicinity.

On April 24, 1960 three chickens were booming at the Platte River site. They flushed toward the large grassy area to the northwest where the booming continued although we could not see the birds. There were no birds on April 2, 1961 at Platte River at which time it was noted that the booming ground was mostly covered with quack grass. On April 22 five chickens flushed from the booming area even though we did not walk into the field and even though the weeds were too high to see the birds on the ground. There may have been more. One continued booming, in view, on the low knoll not far from the west end of the bridge which spans the Platte River.

No Prairie Chickens were seen or heard at Platte River on April 1, 1963, possibly because of the poor weather conditions. Goehring did observe six there on April 13, 1963. These were the last birds ever reported from this booming ground. The booming area had been plowed previous to April 1966, when last visited, at which time Sandhill Cranes were heard, but not located, to the west.

There is evidence that the geographic range of the breeding Prairie Chicken has decreased at the rate of about one county width per decade in east central and central Minnesota. Breckenridge (1929) saw four booming cocks during the spring of 1929 fifteen miles southwest of Minneapolis in Hennepin County. They may have persisted into the 1930's. Evidently the last chickens were observed in Wright and Anoka Counties in the 1930's. The last breeding birds in Sherburne County, and probably in

Kandiyohi County, were observed in the 1940's. The author's data indicate that the last records for Stearns and Benton Counties were in the 1950's. Figure 3 depicts the end of Prairie Chickens in Morrison County during the 1960's.

Thus, like a giant wave, the Prairie Chicken population was propelled toward central Minnesota over a century ago by the forces of habitat change. A crest was reached but could not be maintained. For years we have been on the back slope until finally now the wave has passed us by. Surely it will be a more lonely, sad, and quiet spring.

Postscript

Several recent observations have come to my attention which suggest that even if the breeding population is apparently gone from central Minnesota there is good evidence of sporadic wintering birds. Mr. Gates, who lives in the northeast corner of Langola Township in Benton County, saw a flock of 10-12 during the winter of 1966-67. This is less than two miles north of Joe Miller's where Grewe and I last saw two booming Prairie Chickens in 1953.

Fred Larson, the Register of Deeds for Morrison County, who has been observing Prairie Chickens for years, reported seeing a flock of 22 in October 1968 near Leader in Cass County on the farm of Riley Patterson. He saw five as recently as 1960 five miles south of the center of Little Falls near busy U. S. Highway 10.

An observation was made by Joe Gans in Benton County (T 36N R 30W Sec. 32) of two Prairie Chickens feeding in a soy bean field with several Ring-necked Pheasants in January 1969. The surprising coincidence is that this location is just over one mile north of the Reformatory Meadow where Hiemenz last saw Prairie Chickens, plus one nest, in 1945.

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THE FALL SEASON

by Carol Urness

(August 1 - November 30, 1969)

During the month of August generally warm and very dry weather prevailed over the state. The month's sunny skies, however, were not as memorable as its twelve tornadoes, including one that caused loss of life and serious property damage at Outing on August 6. Aside from that date, when there was some rain in most of the state, there was little precipitation in August.

September brought normal rainfall to the north, but continued dry weather to the south. August-September proved to be the driest period for the Twin Cities in the 131 years of records kept at Fort Snelling.

The weather in October was generally wetter and colder than normal. The temperature averaged about 5 degrees lower than usual for the month. Following on the heels of a dreary

month the Indian summer weather early in November was most welcome. The temperature during the month averaged 10 degrees above normal, and like Napoleon, we could pretend that winter would never come.

There were 267 species listed on 50 reports for the fall season—five more species and five less reports than last year. In the citations the general practice has been to choose significant dates for north and south counties, and to list concentrations when they were noteworthy. The order of presentation is date, place, number if used, and observer. It should be mentioned that there were many reporters for the Twin City area.

Common Loon: Latest 11-19 Duluth MC; 11-9 Aitkin KE; 11-10 Lyon PE; 11-25 Ramsey ETS; 11-11 Mille Lacs 100s EC; 8-18 Wright 8 ETS.

ARCTIC LOON: 11-22 St. Louis 1 JCG.

Red-throated Loon: 9-26 St. Louis JCG.

Red-necked Grebe: 8-15 St. Louis MC; 9-23, 11-1 St. Louis JCG.

Horned Grebe: Latest 11-8 Lyon PE; 11-19 Duluth MC; 11-29 Hennepin ETS; concentrations, 8-19, 9-16 Cook, 10 and 6 respectively, MAF.

Western Grebe: 10-9 Hennepin MHM; 10-25 Hennepin KP.

Pied-billed Grebe: 9-7 Wright ETS; 10-2 Washington 12+ RHJ; latest 11-15 Houston FL; 11-23 Hennepin VL; 11-29 Duluth BL and RGL.

White Pelican: 9-7 Jackson 900 to 1000 LAF; 9-15 Wright 700 DA; 10-7 Cottonwood LAF; 11-1 Nicollet KH.

Double-crested Cormorant: 8-29 Pope 13 WH; 10-5 Lyon 50 KE; 8-11 Duluth J. P. Perkins; 8-4 Pope WH; 10-12 Morrison LSR; 10-21 Hennepin VL and ETS; 11-15 Houston FL.

Great Blue Heron: 8-3 Carver 100 KH; 8-14 Wright 50 BAH; 10-19 St. Louis JCG; 11-1 Swift RBJ; 11-4 Pope WH.

Green Heron: 8-15 Nobles 8 HSH; 9-9 Hennepin 6 VL; 9-4 Mille Lacs MI; 9-8

Morrison LSR; 9-26 Carver TH and MHM; 10-3 Winona BTV.

Common Egret: 8-27 Pope 50 WH; 10-7 Hennepin 24 VL; 10-5 Ottertail KP for Alma Aune; 10-17 Houston FL; 10-26 Wabasha DGM.

Black-crowned Night Heron: 8-15 Cottonwood 6 LAF; 8-24 Freeborn 4 RJ; 9-13 Cottonwood LAF; 10-21 Hennepin WKE.

Yellow-crowned Night Heron: 9-5 Houston 3 BTV; 9-15 Houston FL 9-28 Hennepin CH.

Least Bittern: 8-1 Nicollet 2 DB.

American Bittern: 10-4 Mille Lacs MI; 10-24 Washington RHJ; 10-25 Cass MC for W.H. Carr; 11-11 Pope WH.

Whistling Swan: 11-29, 11-30 Wabasha 500 AFR, DGM; 11-30 Winona 500 BTV; 9-9 Ramsey JJ; 9-18 Marshall AR; 11-19 Morrison LSR; 11-25 Mille Lacs MI; 11-30 Ramsey EC.

Canada Goose: 11-1 Lac Qui Parle 1000s RBJ; 11-22 Olmsted 5000+ ETS; 8-6 Carver KH; 8-18 Nobles HSH; 8-17 Aitkin RHJ; 9-17 Duluth MC; 10-13 Cook MAF; 10-13 St. Louis JCG and HM; 11-30 Wabasha DGM; 11-30 Winona BTV.

White-fronted Goose: 10-11 Douglas 12 BAH; 11-11 Winona BTV; 11-11 Olmsted 3 KE; 11-28 Olmsted RGL.

Snow/Blue Goose: 10-9 Marshall 10,000 AR; 11-1 Lac Qui Parle 1000s RBJ; 9-25 Aitkin JGH; 9-26 Marshall AR and ETS; latest north 10-18 St. Louis JCG; 11-7 Marshall AR; early south 10-4 Washington WHL; 10-11 Blue Earth EDK; late 11-15 Washington RHJ; 11-22 Olmsted ETS.

Mallard: 10-29 Carver 1000+ TH; 11-9 Carver 4000 KH; 11-30 Hennepin CH and MM; 11-30 Wabasha DGM; 11-30 Duluth MC.

Black Duck: 11-29 Hennepin 25+ CH; 11-30 Carver 16 KH; 11-30 Duluth MC, Wabasha DGM and Winona BTV.

Gadwall: 9-10, 10-24 Carver TH; 11-1 Lac Qui Parle RBJ; 11-4 Winona BTV; 11-4 Carver 6 VL.

Pintail: 9-26 Marshall 50 ETS; 10-19 Hennepin 20 VL; 11-9 Carver KH.

Green-winged Teal: 10-18 Carver 15 TH; 11-4 Winona 7 BTV; 10-30 Duluth MC is the latest north; latest south 11-16 Houston FL; 11-19 Hennepin DB.

Blue-winged Teal: 9-14 Wright 100+ BAH; 10-13 Carver 75-100 KH; 11-10 Ramsey JJ; 11-10 Lyon PE.

American Widgeon: 8-28 Mille Lacs 50 MI; 10-2 Ottortail 50+ ETS; late north 10-4 Carlton JGH; 10-30 Duluth MC; south 11-24 Ramsey JJ; 11-29 Olmsted AFR.

Shoveler: 11-23 Hennepin 25+ CH; 11-13 Lyon PE; 11-29 Hennepin 12 ETS; 11-30 Hennepin CH.

Wood Duck: 10-21 Carver 2000 KH; 10-26 75-100 VL; 8-31 Cass BAH; 9-26 Roseau ETS; 11-29 Olmsted AFR; 11-30 Ramsey EC.

Redhead: 9-10 Carver 6 TH; 11-4 Winona 30 BTV; 10-25 Cook BL; 11-22, 11-30 Ramsey DB and KP, EC respectively.

Ring-necked Duck: 11-4 Winona 20 BTV; 11-9 Carver 200 KH; 11-9 Aitkin KE; 11-22 Ramsey DB and KP; 11-29 Olmsted AFR.

Canvasback: 10-19 Duluth 15 MC; 11-4 Winona 100 BTV; 11-11 Lyon PE; 11-19 Hennepin KP.

Lesser Scaup: 11-4 Winona 100 BTV; 9-28 Houston 300+ FL; (nothing like last year's report of a concentration of 25,000 on Lake Winnibigoshish!); 11-1 Aitkin RHJ; 11-30 Lake MC; 11-30 Hennepin VL and CH; 11-30 Wabasha DGM.

Common Goldeneye: 11-20 Duluth 45 JCG; 11-30 Lake 28 MC; 11-22 Wabasha DGM; 11-30 Hennepin WKE.

Bufflehead: 11-9 Aitkin 200 KE; 11-9 Carver 42 KH; 11-30 Lake MC; 11-27 Ramsey JJ; 11-29 Hennepin ETS.

HARLEQUIN DUCK: 10-29 St. Louis 2 imm., 11-15 3 imm. MC; 11-1 St. Louis (Lester River) 2 imm., 11-20 3 imm. JCG; 11-11 St. Louis, Steve Gilbertson.

Oldsquaw: 11-2 Cook 42 DB and KP; 11-13 Cook 2 JGH; 11-16 and 17 WRIGHT (Howard Lake) DA.

White-winged Scoter: 10-25 Cook 12 BL; 11-2 Cook 9 DB and KP; 10-22 Lyon 2 PE; 11-21 Ramsey JJ and RBJ; 11-23 Lake JCG; 11-30 Lake MC.

Surf Scoter: 10-19 St. Louis 6 MC; 10-19 Lake JCG; 10-29 St. Louis MC.

Common Scoter: 10-25 St. Louis BL; 10-25 Cook 7 BL; 11-2 Cook 2 DB and KP.

Ruddy Duck: 8-25 Winona 7 BTV; 11-29 Hennepin ETS; 11-29 Olmsted AFR.

Hooded Merganser: 11-4 Hennepin 50+ ETS; 11-4 Carver 200 VL; 10-24 Marshall AR; 11-13 St. Louis JCG and MC; 11-22 Ramsey DB and KP.

Common Merganser: 9-14 Winona 16 BTV; 10-26 Hennepin 18 VL; 11-13 Lake JCG; 11-22 Lake MC; 11-29 Olmsted AFR; 11-30 Wabasha DGM.

Red-breasted Merganser: 10-30 Winona 25 BTV; 11-29 Olmsted 10 AFR; 11-23 St. Louis JCG; 11-30 Ramsey EC.

Turkey Vulture: 10-8 Duluth 108 PBH; 10-9 Duluth 44 MC; 9-7 MC and PBH; 9-15 Duluth LSR; 9-25 Wabasha DGM.

Goshawk: 8-31 Cass BAH; 9-9 Duluth MC and PBH; 10-9 Duluth PBH; 10-25 Lake BL; 11-23 Pine MIG; 11-26 Duluth MC; 11-30 Ramsey 1 imm. EC.

Sharp-shinned Hawk: 9-7 Duluth 258 PBH, 262 MC; 9-20 78 CH; early north 8-1 Duluth PBH and MC; south reports 9-22 Carver TH; 11-6 Ramsey JJ; 11-27 Wabasha DGM.

Cooper's Hawk: early north 8-19 Duluth PBH and MC; 8-20 Todd VL; late 10-22 Cook MAF; south reports 10-4 Washington WHL; 10-6 Carver TH; 11-8 Winona FL.

Red-tailed Hawk: 8-8 Duluth 89 MC and PBH; 10-18 Duluth 68 PBH; early north 8-2 PBH; late 11-24, 11-28 Duluth JCG and MC respectively; early south 8-1 Carver KH; late 11-30 Winona BTV; 11-30 Hennepin MM.

Krider's Red-tailed Hawk: 9-13 Hennepin VL; 11-1 and 11-10 Lyon PE.

Red-shouldered Hawk: 9-20 Winona BTV; 10-8 Washington WHL; 10-28 Carver MHM.

Broad-winged Hawk: 9-16 Duluth 4409 MC; 9-17 Duluth 5013 PBH; 8-2, 10-11 early and late Duluth MC and PBH; MC; early south 8-16 Nobles HSH; late 10-28 Ramsey JJ.

Swainson's Hawk: 8-25 Dakota BTV; 9-4 Hennepin WKE; 10-26 Wabasha DGM.

Rough-legged Hawk: 10-27 Duluth 36 MC; 11-11 Ramsey 4 EC; 9-23 Duluth PBH; 9-23 Washington WHL.

Golden Eagle: 8-26 Duluth MC; 9-26 Duluth PBH; 10-12 Duluth 2 PBH; 10-13 Carver 1 imm. KH; 10-29 Lyon PE; 11-1 Lac Qui Parle RGL and RBJ; 11-7 Cook, Mrs. Hazel Solhaug; 11-15 Cook MAF; 11-16 St. Louis HM; 11-16 Wabasha 2 BTV.

Bald Eagle: 11-11 Wabasha 23 BTV; 11-21 Houston 11 ad. 3 imm. FL; 8-6 Chisago EL; 8-16 St. Louis RHJ; late records south 11-26 and 11-27 Wright (Howard Lake) 1 ad. DA; 11-28 Wabasha RGL; 11-30 Wabasha DGM; north 11-27 Duluth JGH; 11-28 Duluth MC.

Marsh Hawk: 9-12 Duluth 47 PBH; 10-18 Duluth 10 PBH; 8-2 Duluth MC and PBH; late 10-25 Cass MC; 10-27 Duluth MAF; south 8-20 Nobles HSH; 11-6 Carver TH; 11-28 Wabasha RGL.

Osprey: 9-12 Duluth 17 PBH; 8-9 Duluth MC and PBH; 10-22 MC for W. N. Carr; south early 9-8 Washington TH; 10-6 Lyon KE; 11-5 Hennepin TH.

Peregrine Falcon: 8-25 Duluth MC and PBH; 9-9 Duluth 5 MC and PBH; 9-20 Duluth BL and DB; 10-5, 10-9, 10-19 Duluth JCG, PBH, and MC; 10-26 St. Louis JCG; 11-21 Duluth 2 seen by J. Brandenburg; 10-6 Lyon KE and PE; 10-30 Hennepin WKE.

Pigeon Hawk: 8-14 Duluth MC; 8-17, 10-6 Duluth PBH; 9-20 Lake BL; 10-14 Hennepin RGL.

Sparrow Hawk: 9-17 Duluth 44 PBH;

10-4 Sherburne 10 BAH; early and late north 8-2 Duluth PBH; 10-26 St. Louis JCG; 10-16 Mille Lacs MI; south 8-5 Carver KH; 11-29 Lyon PE; 11-30 Carver TH.

Spruce Grouse: 9-27 St. Louis 5 RBJ.

Ruffed Grouse: Reported from Cass, Chisago, Cook, Crow Wing, Lake, Marshall, Mille Lacs, Morrison, Pine, St. Louis, Sherburne, and Winona counties.

Sharp-tailed Grouse: 9-26 Roseau 2 ETS.

BOBWHITE: 10-16 Watonwan 4 EDK; 11-10 Ramsey JJ.

Ring-necked Pheasant: Reported from Carver, Chisago, Cottonwood, Hennepin, Lyon, Olmsted, Ramsey, St. Louis, Watonwan and Winona counties.

Gray Partridge: 8-10 Nobles 2 HSH; 9-18 Wabasha DGM.

Sandhill Crane: 9-3 Morrison 4 EC; 9-6 Morrison 4 RBJ and TH; 9-11, 9-12 and 9-26 in Marshall County, 52, 68 and 34 cranes respectively, AR.

Virginia Rail: 9-7 Wright ETS; 9-21 and 11-6 Carver TH; 10-21 Watonwan EDK; 10-30 Lyon PE.

Sora: 8-31 Cass 12 BAH; 9-10 Winona 2 BTV; 9-6 Duluth (dead on road) RBJ; 10-5 Lyon KE; 10-25 Hennepin KP.

Common Gallinule: 9-21 Winona BTV.

American Coot: 9-30 Washington 2200 WHL; 10-5 Wright 1000 BAH; 10-22 Wabasha 1000 DGM; 11-11 Mille Lacs 1000 MI; 11-26 Lake JCG; 11-30 Hennepin CH.

Semipalmated Plover: 8-18 Nobles many, HSH; 9-6 Duluth 6 TH; 8-26 Dakota EWJ; 8-27 Ramsey JJ; 9-1 Duluth MC; 9-2, 9-22 Mille Lacs MI; 9-24 Washington WHL.

Piping Plover: Reported Duluth only, 8-5 through 9-13 by BL, BTV, MC, RBJ, TH, and DB.

Killdeer: 8-31 Pope 50 WH; 9-20 Duluth 37 BL; 10-10 Mille Lacs MI; 11-8

Dakota RGL; 11-11 Hennepin ETS; 11-12 Duluth TH.

American Golden Plover: 8-24 Nobles 35 HSH; 10-2 Clay 24+ ETS; 9-13 Duluth BTV; 11-9 Duluth KE; 9-11 Mille Lacs MI; 9-24 Washington WHL; 11-12 Lyon PE.

Black-bellied Plover: 9-21 Duluth 6 CH; 10-25 Duluth 10 MC; early 9-13 Duluth BTV; late 11-4 Mille Lacs MI; south 8-17 Nobles HSH.

Ruddy Turnstone: 9-13 Duluth 6 BTV; 8-1 Anoka WHL; 8-16 Nobles HSH; 9-6 Duluth TH and RBJ.

American Woodcock: 8-27 Duluth MC; 9-28 Kanabec DB; 10-5 Washington WHL; 10-9 Hennepin MM; 11-3 Mille Lacs MI; 11-9 Cook EL.

Common Snipe: 10-2 Ottertail 50+ ETS; 10-11 Watonwan 100+ EDK; 11-8 St. Louis JCG; 11-9 Morrison KE; 11-14 Lyon PE; 11-17 Ramsey JJ.

Whimbrel: 9-21 Duluth, by J. P. Perkins.

Upland Plover: 8-25 Hennepin 4 VL.

Spotted Sandpiper: 8-4 Mille Lacs 6 MI; 9-6 Duluth 6 TH; 9-2 Cook 7 MAF; 8-31 Cass BAH; 10-2 Winona BTV; 10-11 Hennepin ETS.

Solitary Sandpiper: 8-28 Mille Lacs MI; 8-31 Cass BAH; 9-17 Duluth TH; 8-1 Washington WHL; 8-3 Carver KH; 10-12 Hennepin RGL; 10-10 Washington WHL.

Willet: 8-31 Lac Qui Parle 2 KP; 9-26 Marshall ETS; 10-19 Duluth 19, by P. Getman.

Greater Yellowlegs: 8-17 Nobles, many HSH; 10-22 Washington 4 WHL; 8-27 Mille Lacs MI; 9-1 Duluth MC; 8-1 Anoka WHL; 8-8 McLeod MHM.

Lesser Yellowlegs: 8-6 Carver 6 KH; 9-30 Washington 10 WHL; 8-10 Duluth MC; 8-18, 9-11 Mille Lacs MI; 8-21 Wright ETS; 11-9 Carver KH; 11-11 Hennepin ETS.

Knot: 8-10 Duluth MC; 9-6 Duluth RBJ (2) and TH.

Pectoral Sandpiper: 9-23 Mille Lacs 22 MI; 10-28 Hennepin 23 ETS; 8-27 Mille Lacs MI; 9-13 Duluth BTV; 10-29 Lake MC; 11-9 Morrison KE; 8-14 Nobles HSH; 8-30 Carver KH; 11-8 Dakota RGL; 11-11 Hennepin ETS.

Baird's Sandpiper: 9-20 Duluth 8 DB; 10-18 Lac Qui Parle 6 BL; 9-1 Cass BAH; 9-6 Duluth TH; 8-19 Wright ETS; 8-26 Dakota EWJ; 11-1 Lac Qui Parle RGL and RBJ.

Least Sandpiper: 8-25, 8-29 Anoka 8, 9 WHL; 8-8 McLeod MHM; 8-10 Nobles HSH; 9-23 Carver TH; north 8-10, 8-11 Duluth MC, J. P. Perkins; 10-4 Mille Lacs MI.

Dunlin: 8-31 Cass 6 BAH; 9-1 Cass BAH; 9-20 Duluth BL, DB, BTV; 10-10 Mille Lacs MI; 11-5 Hennepin RGL.

Long-billed Dowitcher: 9-29 Hennepin 3 VL; 9-30 Hennepin ETS.

Short-billed Dowitcher: 9-28 Marshall 50+, 10-24 6, AR; 10-5 Lyon 15 KE; 10-8 Hennepin 13 CH.

Dowitcher, species?: 8-18 Nobles HSH; 8-27, 9-19 Mille Lacs MI; 9-6 Carver TH.

Stilt Sandpiper: 8-1 Sibley DB; 9-2, 9-11 Mille Lacs 5, 2 MI.

Semipalmated Sandpiper: 9-13 Duluth 10 BTV; 9-15 Mille Lacs 6 MI; 8-10 Sibley KP; 8-18 Nobles HSH; 10-30 Lyon PE; 8-10 Duluth MC; 10-2 Clay ETS; 10-10 Mille Lacs MI.

Buff-breasted Sandpiper: 9-13 Duluth 3 MC.

Hudsonian Godwit: 8-12 St. Louis PBH. (Very few fall dates for this species)

Sanderling: 9-6 Duluth 30 TH; 8-5 Duluth 5 MC; 9-13 Duluth BTV; 10-28 Duluth KP; 8-21 Wright ETS; 10-2 Clay ETS.

Wilson's Phalarope: 8-3 Nobles 7-8 HSH; 9-26 Marshall 3 AR.

Northern Phalarope: 9-28 Duluth, S. Robbins.

Glaucous Gull: 11-30 Duluth 1 imm. JCG.

Herring Gull: 11-4 Winona 60 BTV; 11-8 Ramsey 8+ RHJ; 11-10 Pope 5 WH; 11-29 Hennepin 50+ ETS; 11-30 Wabasha 10 DGM.

Ring-billed Gull: 9-26 Mille Lacs 250 MI; 10-23 Hennepin 500 VL; 11-27 Hennepin 200+ CH; 11-30 Wabasha 800 DGM; 11-13 Duluth JCG; 11-26 Carver TH.

Franklin's Gull: 8-23 Swift 300+ BAH; 10-2 Ottertail 500+ ETS; 10-13 Carver 300+ TH; 11-1 Lac Qui Parle 1000 RGL; 11-1 Kandiyohi, Meeker and Chippewa RBJ; 11-11 Pope WH; 11-12 Lyon PE.

Bonaparte's Gull: 11-5 Mille Lacs 50 EC; 11-9 Aitkin 500 KE; 8-9 Ramsey EC; 11-2 Winona FL; 9-6 Duluth TH and RBJ; 11-1 Aitkin RHJ.

Forster's Tern: 8-15 Nobles HSH; 8-25 Winona BTV; 8-31 Hennepin VL.

Common Tern: 8-1 Mille Lacs 13 BAH; 9-13 Duluth 8 BTV; 8-5 Carver KH; 8-28 Mille Lacs MI; 8-31 Swift BAH; 9-6 Duluth TH; 9-20 Marshall AR.

Caspian Tern: 8-24 Ramsey JJ; 8-31 Morrison LSR; 9-6 Duluth RBJ.

Black Tern: 8-14 Mille Lacs 5 MI; 9-2 Houston 4 BTV; 9-1 Cottonwood LAF; 10-12 Wright ETS.

Mourning Dove: 9-10 Ramsey 40 BAH; 10-19 Carver 50 KH; 8-5 Duluth MC; 10-9 Cook MAF; 10-27 Duluth JCG; 11-28 Blue Earth EDK; 11-29 Lyon PE.

Black-billed Cuckoo: 8-13 Hennepin KP; 8-18 Wright ETS; 9-11 Morrison LSR; 9-23 Washington WHL.

Screech Owl: 9-24 Olmsted HBW; 9-26 Hennepin MM; 11-29 Hennepin VL.

Great Horned Owl: Cass, Cottonwood, Hennepin, Mille Lacs, Nobles, Olmsted, Wright.



Snowy Owl: This owl remained around Farmington, Dakota County for a few days around December 10, 1969. It was the only report for the species this winter.

Barred Owl: 8-28 Cook JJ; 10-1 Chisago EL; 11-9 Blue Earth EDK; 11-17 Duluth MC; 11-23 Pine MIG.

Long-eared Owl: 9-27 Mille Lacs 2 MI; 10-18 Duluth 1 dead JCG; 11-15 Freeborn RJ; 11-30 Blue Earth EDK; 11-30 Hennepin VL; 11-30 Carver MHM; also 11-27 Duluth 2, D. Sheer.

Short-eared Owl: 10-19, 11-1 Duluth 3 by P. Getman, 1 M. Howe; 10-21 Marshall AR; 10-29 Blue Earth EDK.

Boreal Owl: 11-4 Cook, J. P. Perkins.

Saw-whet Owl: 9-22 St. Louis HM; 10-15 Chisago 1 banded, FVS; 11-4 Hennepin DB, RBJ, RGL; 11-5 Ramsey 1 banded MIG.

Common Nighthawk: 8-30 Duluth 188 PBH; 9-5 Hennepin 200+ VL; 9-5, 9-7 Duluth PBH; 10-2 Hennepin WKE; 10-4 Hennepin DB and CH.

Chimney Swift: 9-14 Hennepin 20 WKE; 9-22 Hennepin 50+ VL; 8-31 Cottonwood LAF; 9-1 Washington WHL; 9-5 Duluth PBH.

Ruby-throated Hummingbird: 9-6 Wright 2 ETS; 9-16 Cottonwood 3 LAF; 8-31 Chisago 1 banded FVS, 9-3 Beltrami MK; 9-26 Wabasha DGM; 9-28 Duluth KS; 10-2 Chisago EL.

Belted Kingfisher: 8-5 Carver 5 KH; 9-20 Carver 4 TH; 11-28 Duluth PBH; 11-21 Olmsted HBW; 11-30 Ramsey EC.

Yellow-shafted Flicker: 9-13 St. Louis approx. 50 HM; 10-8 Duluth 100+ JCG; 11-13, 11-28 Cook JGH, JP respectively; 11-29 Wabasha DGM; 11-30 Pope WH.

RED-SHAFTED FLICKER: 10-14 Pope WH.

Pileated Woodpecker: Anoka, Blue Earth, Carver, Chisago, Hennepin, Marshall, Mille Lacs, Pine, St. Louis, Wabasha, Winona, and Wright counties.

Red-bellied Woodpecker: Blue Earth, Carver, Chisago, Goodhue, Ramsey, Wabasha, and Winona counties.

Red-headed Woodpecker: 8-3 Cottonwood 17 LAF; 11-8 Mille Lacs MI; 11-29 Wabasha DGM; 11-30 Winona BTV.

Yellow-bellied Sapsucker: 9-18 Chisago 5 EL; 9-26 St. Louis 2 JCG; 9-16 Aitkin RBJ; 9-28 St. Louis HM; 10-16 Cook JP; 10-13, 10-14 Hennepin EWJ, DB.

Hairy Woodpecker: Beltrami, Carver, Cass, Chisago, Cook, Cottonwood, Crow Wing, Hennepin, Mille Lacs, Morrison, Nobles, Ramsey, St. Louis, Wabasha, Winona, Wright counties.

Downy Woodpecker: Carver, Chisago, Cass, Cook, Crow Wing, Cottonwood, Hennepin, Mille Lacs, Nobles, Olmsted, Ramsey, Wabasha, Watonwan, Winona counties.

Black-backed Three-toed Woodpecker: 10-22 Duluth KS; 11-9 Cook 3 EL.

Eastern Kingbird: 8-20 Duluth 25 MC; 8-23 Blue Earth 24 EDK; 9-6 Aitkin and Morrison RBJ; 9-12 Chisago BTV; 10-2 Chisago EL.

Western Kingbird: 8-18 Wright ETS; 9-12 Dakota BTV; 10-2 Chisago 3 EL.

Great Crested Flycatcher: 8-9 Duluth MC; 9-8 Wabasha DGM; 9-10 Winona BTV.

Eastern Phoebe: 9-7 Wright 4 ETS; 9-17 Carver 5 TH; 9-8 Morrison LSR; 9-28 Mille Lacs MI; 10-20 Carver TH; 10-27 Hennepin RGL.

Yellow-bellied Flycatcher: 8-9 Hennepin VL; 8-28 Pine MHM; 9-2, 9-8 Morrison LSR; 9-8, 9-15 Wright ETS; 9-15 Duluth KS.

Traill's Flycatcher: 8-22, 9-8 Wright 2, 6 ETS; 8-29 Duluth KS; 9-6 Morrison 7 LSR; 9-17 Hennepin ETS.

Least Flycatcher: 8-19 Morrison 6 LSR; 9-21 Hennepin VL; 9-23 Duluth KS; 9-25 Morrison LSR.

Eastern Wood Pewee: 8-31 Mille Lacs 4 MI; 9-14 Washington WHL; 9-24 Hennepin VL; 10-16 Cook JJ.

Olive-sided Flycatcher: 8-18 Nobles HSH; 10-2 Winona BTV; 9-1 Mille Lacs MI; 9-15 Wright ETS.

Horned Lark: 9-30 Cook 26 MAF; 10-19 Duluth 20 MC and JCG; 10-26 Wabasha DGM; 11-11 Hennepin VL; 11-13 Duluth MC and JCG.

Tree Swallow: 8-30 Cass 150+ BAH; 9-24 Watonwan approx. 1000 EDK; 9-6 Morrison RBJ; 9-26 Mille Lacs MI; 10-10, 10-21 Hennepin ETS, VL respectively.

Bank Swallow: 8-18 Hennepin 30-40 VL; 8-20 Washington 6 WHL; 9-1 Carver TH; 9-6 Morrison RBJ; 10-5 Lyon KE.

Rough-winged Swallow: 8-1 Chisago 15 EL; 8-2 Winona BTV; 8-19, 9-7 Wright 15+ and 1, ETS.

Barn Swallow: 8-18 Blue Earth 150 EDK; 9-7 Rock 260 LAF; 10-9 Duluth JCG; 10-21 Hennepin ETS; 10-29 Lyon PE.

Cliff Swallow: 8-1 Nobles, in good numbers, HSH; 9-6 Morrison RBJ; 9-6 Duluth TH; 9-13 Winona BTV.

Purple Martin: 8-18 Wright 100+ ETS; 8-28 Cottonwood 23 LAF; 9-4 Mille Lacs MI; 9-6 Duluth TH; 9-23 Hennepin VL; 10-10 Hennepin ETS.

Gray Jay: reported for November in Beltrami by MK. Also, in Cook and St. Louis counties.

Blue Jay: 8-1 Hennepin 20 WKE; 8-1 Chisago 10 EL; 9-16 Duluth 270 PBH; 11-11 St. Louis 8 HM.

Black-billed Magpie: 9-24 Mille Lacs (Onamia) MI for Al Mohler; 9-27 Roseau 5 EDK.

CLARK'S NUTCRACKER: 9-9 Hennepin VL; 9-27 Duluth, by Mr. and Mrs. Charles Flugum.

Common Raven: 8-21 Kandiyohi 20 BAH; 9-27 Duluth 30 JCG; 8-9 Duluth MC.

Common Crow: 8-1 Chisago 20 EL; 9-27, 10-12 Duluth 50 JCG; 10-17 Watonwan 254 LAF.

Black-capped Chickadee: Reported from Beltrami, Blue Earth, Anoka, Carver, Cass, Chisago, Cook, Cottonwood, Hennepin, Mille Lacs, Morrison,

Olmsted, Ramsey, St. Louis, Sherburne, Wabasha, Washington, Winona, Wright.

Boreal Chickadee: St. Louis reports 8-1 and 11-25 HM; 10-6 DB and JCG.

Tufted Titmouse: 9-10 and 11 Ramsey EC; 11-4 Washington EC.

White-breasted Nuthatch: Reported in Anoka, Beltrami, Carver, Chisago, Cottonwood, Crow Wing, Hennepin, Kandiyohi, Mille Lacs, Olmsted, Ramsey, St. Louis, Sherburne, Wabasha, Washington, Winona, Wright.

Red-breasted Nuthatch: Earliest dates south, 9-7 Hennepin EH; 9-8 Wright ETS; 9-8 Hennepin WKE.

Brown Creeper: 9-9 St. Louis, 1 banded HM; 9-19 Hennepin VL; 9-26 Cottonwood LAF; 11-27 Carver TH; 11-30 Ramsey JJ.

House Wren: 8-3 Hennepin 4 WKE; 8-15 Cottonwood 4 LAF; 9-14 Duluth KS; 10-8 Carver TH; 10-20 Olmsted HBW.

Winter Wren: 9-1 Duluth MC; 10-5 Duluth KS; 11-4 Hennepin ETS; 11-4 Carver VL; 11-10 Hennepin RGL.

Long-billed Marsh Wren: 9-7 Wright 4 ETS; 9-3 Duluth MC; 10-5 Lyon KE; 11-7 Lyon PE.

Short-billed Marsh Wren: 8-8 Carver 2 MHM; 8-18 Pope WH; 9-10 Hennepin KP; 9-25 Mille Lacs 3 MI.

Mockingbird: 8-16 Morrison 2 DB; 9-6 Morrison RBJ and TH; 11-8 Winona BTV; 11-22 Duluth MC; 11-23 Duluth JCG and R. Lender.

Catbird: 9-23 Morrison LSR; 9-24 Mille Lacs MI; 10-14 Hennepin DB; 10-15 Ramsey JJ; 8-25 Hennepin 3 WKE.

Brown Thrasher: 9-9 Chisago 6 EL; 10-11 Winona BTV; 10-22 Duluth MC; 10-28 Carver KH; 10-29 Cook MAF.

Robin: 9-28 Hennepin 143 MM; 10-8 Duluth 200 JCG; 11-21 Cook JP; 11-29 Duluth MC; 11-30 Nobles HSH; 11-30 Ramsey EC; 11-30 Hennepin CH.

Wood Thrush: 8-19 Itasca VL.

Hermit Thrush: 10-14 Hennepin 4

RGL; 10-15 Mille Lacs MI; 10-27 Carver TH; 10-28 Ramsey MIG.

VARIED THRUSH: 8-30 Hennepin DB; 10-16 Duluth KS; 10-22 Duluth, Mary Chagnon.

Swainson's Thrush: 10-11 Wright ETS; 10-19 Duluth KS and MC; 10-25 Lake BL; 10-29 Ramsey MIG.

Gray-cheeked Thrush: 9-9 Hennepin EWJ; 8-31 Hennepin VL; 9-14, 9-27, 10-14 Duluth KS.

Veery: 8-2 Crow Wing BAH; 8-24 Ramsey JJ; 8-26 Morrison LSR; 9-1 Duluth MC.

Eastern Bluebird: 9-20 Carver 20 TH; 10-18 Carver RBJ; 10-25 Morrison RBJ; 10-25 Lake BL; 11-9 Cottonwood LAF; 11-9 Wabasha DGM; 11-27 and 28 Cook JP.

MOUNTAIN BLUEBIRD: 10-14 Hennepin 2 DB and KP.

Golden-crowned Kinglet: 10-26 Anoka 15+ BAH; 11-9 Hennepin 15 CH; 8-27 Chisago EL; 9-24 Washington WHL; 9-25 St. Louis JCG; 9-29 St. Louis HM; 11-11 St. Louis HM; 11-22 Morrison LSR; 11-22 Washington WHL; 11-27 Carver TH.

Ruby-crowned Kinglet: 9-29 St. Louis 12 HM; 10-13 Pope 20 WH; 8-31 Hennepin WKE and CH; 9-10 Hennepin DB; 9-11 Morrison LSR; 9-25 Mille Lacs MI; 10-28 St. Louis KS; 11-5 Morrison LSR; 11-7 Hennepin RGL; 11-9 Cottonwood LAF.

Water Pipit: 9-26 Mille Lacs 30 MI; 10-14, 10-24 St. Louis 30 JCG; 9-13 Mille Lacs MI; 9-28 Duluth, S. Robbins; 10-2 Clay ETS; 10-18 Sibley RBJ; 10-27, 10-29 St. Louis JCG, MC; 11-1 Le Sueur KH; 11-5 Hennepin RGL.

SPRAGUE'S PIPIT: 10-15 St. Louis JCG.

Bohemian Waxwing: 10-25 Duluth MC; 11-22 Morrison LSR.

Cedar Waxwing: 10-21, 10-25 Chisago 65 EL; 11-4 Hennepin 200 RGL; 11-5 St. Louis 55 JCG; 11-6 Hennepin 200 WKE.

Northern Shrike: 10-27 Duluth 3 MC; 10-29 Carver VL; 10-30 Pope WH.

Loggerhead Shrike: 8-31 Cottonwood LAF; 9-6 Hennepin CH; 10-28 Washington WHL; 11-2 Carver KH.

Starling: 10-13 50 WKE.

Bell's Vireo: 8-2 Winona BTV.

Yellow-throated Vireo: 9-15 Wright ETS; 10-5 Chisago EL.

Solitary Vireo: 9-17 Carver 3 TH; 8-31 Hennepin CH; 9-5 Ramsey JJ; 10-3 Morrison LSR; 10-14 Hennepin VL.

Red-eyed Vireo: 9-2 Cook 5 MAF; 10-31 Hennepin 6 WKE; 10-8 Duluth KS.

Philadelphia Vireo: 8-2 Duluth MC; 9-5 Hennepin MHM; 9-6, 7, 8 Wright ETS; 9-8, 9-25 Morrison LSR; 10-1 Hennepin DB.

Warbling Vireo: 8-31 Cottonwood 4 LAF 9-4 Duluth PBH; 9-8 Morrison LSR; 9-22 Cottonwood LAF; 10-2 Winona BTV.

Black-and-white Warbler: 8-22 St. Louis 3 banded HM; 8-31 Hennepin CH and WKE; 9-22 Hennepin VL; 9-27 Duluth KS; 10-9 Duluth MC; 10-11 Chisago EL.

Golden-winged Warbler: 8-1 Mille Lacs BAH; 9-6 Wright BAH; 9-13 Hennepin DB; 9-24 Mille Lacs MI.

Brewster's Warbler: 8-31; 9-4 Hennepin VL.

Tennessee Warbler: 8-1 Duluth MC; 8-22 St. Louis 1 banded HM; 8-31 Washington WHL; 9-4 Hennepin DB and KP; 9-30 Washington WHL; 10-1 Morrison LSR; 10-1 Winona BTV; 10-8 Duluth KS.

Orange-crowned Warbler: 9-8 Wright ETS; 9-19 Hennepin EWJ; 9-23 Morrison 3 LSR; 10-9 Duluth KS; 10-9 Morrison LSR; 10-16 Hennepin VL; 11-3 Hennepin RGL.

Nashville Warbler: 9-10 St. Louis 4 banded HM; 9-8 Wright 4 ETS; 9-9 Hennepin WKE; 10-9 Morrison LSR;

10-10 Duluth MC; 10-18 Winona BTV;
10-26 Chisago EL.

Parula Warbler: 8-23 Wright ETS; 8-31 Hennepin VL; 10-2 Winona BTV.

Yellow Warbler: 8-1 Mille Lacs 15 BAH; 8-5 Duluth 5 MC; 9-2 Morrison LSR; 9-6 Carver MHM; 9-8 Wright ETS.

Magnolia Warbler: 9-9 Hennepin EWJ; 9-16 Ramsey BAH and VL; 9-28 Duluth JCG; 10-10 Hennepin CH.

Capo May Warbler: 9-6 Duluth MC.

Black-throated Blue Warbler: 9-2 Hennepin EWJ; 9-24 Hennepin VL.

Myrtle Warbler: 9-26 Carver 100+ TH; 9-27 Duluth 100s PBH; 9-8 ETS; 9-9 Hennepin WKE; 10-28 Carver MHM; 10-28 Pine MIG; 10-29 St. Louis JCG.

Black-throated Green Warbler: 8-18 Wright ETS; 9-1 Hennepin WKE; 9-14 Duluth KS; 10-2 Winona 2 BTV.

Blackburnian Warbler: 9-8 Wright ETS; 9-11 Morrison LSR; 9-15 Washington WHL; 10-2 Winona 2 BTV.

Chestnut-sided Warbler: 8-22 Wright ETS; 8-31 Hennepin WKE; 9-13 Winona BTV; 9-15 Duluth KS; 9-16 Ramsey VL; 9-24 Duluth KS.

Bay-breasted Warbler: 8-8 Duluth MC; 9-6 Morrison LSR; 9-8 Wright ETS; 9-10 Hennepin DB; 10-2 Winona BTV; 10-10 Cottonwood LAF.

Blackpoll Warbler: 8-31 Duluth MC; 9-10 Hennepin DB; 9-19 EWJ; 9-29 Hennepin WKE; 10-8 Duluth JCG; 10-9 Duluth KS.

Pine Warbler: 9-21 Hennepin VL; 10-7 Ramsey JJ; 10-9 Duluth KS; 10-25 Lake BL.

Palm Warbler: 9-5, 9-6 Duluth, PBH; 9-8 Wright ETS; 9-11 Hennepin WKE; 10-1 St. Louis 6 JCG; 10-6 Hennepin 6 VL; 10-14 Carver KH; 10-16 St. Louis JCG; 10-14 Ramsey MIG.

Ovenbird: 9-11 Morrison 4 LSR; 9-18 Duluth KS; 9-21 Hennepin VL; 9-23 Hennepin EWJ; 10-2 Hennepin VL.

Northern Waterthrush: 9-2 Morrison 4 LSR; 8-17 Chisago 1 banded FVS; 10-3 Duluth KS; 10-19 Pope WH; 10-21 Ramsey MIG; 10-25 Lake BL.

Connecticut Warbler: 9-6 Duluth RBJ and TH; 9-22 Hennepin VL.

Mourning Warbler: 8-19, 9-11 Morrison 2 LSR; 9-10 Hennepin DB.

Yellowthroat: 8-3 Cottonwood 7 LAF; 9-6 Wright 5 ETS; 9-23 Morrison LSR; 9-25 Duluth JCG; 10-2 Winona BTV; 10-25 Hennepin KP.

Wilson's Warbler: 9-2 Morrison 11 LSR; 8-15 Morrison 5 LSR; 8-22 Wright ETS; 8-24 Hennepin DB; 9-1, 9-6 Duluth MC, RBJ; 9-13 Morrison LSR; 10-2 Winona BTV.

Canada Warbler: 8-16 St. Louis RHJ; 8-31, 9-3 Hennepin CH, VL; 9-6 Morrison LSR; 9-12 Cottonwood LAF.

American Redstart: 8-9 Duluth 6 MC; 9-10 Mille Lacs 10 MI; 10-4 Washington RHJ; 10-14 Ramsey EC; 10-19, 10-22 St. Louis MC, HM.

Bobolink: 8-2 Winona 6 BTV; 8-11 Mille Lacs 20 MI; 8-16 Morrison RBJ; 8-24 Ramsey JJ; 9-13 Cottonwood 1 dead on road LAF.

Eastern Meadowlark: 10-1 Winona 8 BTV; 10-17 Washington 6 WML; 10-25 Wright BAH; 10-28 Mille Lacs MI; 10-30 Cook JGH.

Western Meadowlark: 11-1 Lac Qui Parle RBJ; 11-1 Pope WH.

Yellow-headed Blackbird: 8-25 Pope 100 WH; 9-13 Cottonwood 75 LAF; 10-18 Lac Qui Parle BL; 11-29 Lyon PE.

Red-winged Blackbird: 9-7 Wright 600+ ETS; 11-9 Cottonwood 3000+ LAF; 11-12 Duluth JCG; 11-22 Duluth MC; 11-30 Goodhue KE; 11-30 Winona BTV.

Orchard Oriole: 9-3 Winona BTV.

Baltimore Oriole: 8-1 Hennepin 12 WKE; 8-30 Cass 5 BAH; 9-1 Mille Lacs MI; 9-2 Morrison LSR; 9-11 Washington WHL; 9-15 Hennepin WKE.

Rusty Blackbird: 9-27 Wright 500+

ETS; 9-19 Mille Lacs 100 MI; 11-30 Lyon 100 PE; 11-13 Lake JCG; 11-18, 11-26 Ramsey CO, EC.

Brewer's Blackbird: 9-28 Duluth 27 VL; 11-6 Winona BTV; 11-13 Carver 12 TH.

Common Grackle: 11-9 Cottonwood 800 LAF; 11-15 Washington 200 WHL; 11-30 Mille Lacs MI; 11-30 Cook JP; 11-30 Olmsted ARF; 11-30 Chisago EL; 11-30 Winona BTV.

Brown-headed Cowbird: 8-7 Wabasha DGM; 9-27 Duluth JCG; 9-30 Hennepin VL; 11-1 Lac Qui Parle RBJ.

Scarlet Tanager: 9-17 Hennepin WKE; 9-22, 9-25 Duluth 7, 1 MC.

Cardinal: Reports from Blue Earth, Carver, Chisago, Cottonwood, Freeborn, Hennepin, Mille Lacs, Olmsted, Ramsey, Wabasha, Washington, Winona.

Rose-breasted Grosbeak: 9-8 Wright 4 ETS; 9-13 Morrison 4 LSR; 10-1 Winona BTV; 10-15 Hennepin WKE; 11-3, 11-11 St. Louis MC, JCG.

Indigo Bunting: 9-5 Hennepin 6 VL; 9-8 Morrison LSR; 9-26 Pope WH; 10-2 Winona BTV.

Dickcissel: 8-8 Cottonwood LAF; 8-30 Lac Qui Parle KP.

Evening Grosbeak: 9-4 Hennepin VL; 10-18 Chisago FVS; 11-10 Mille Lacs 200 MI; 11-12—11-24 St. Louis 100s JCG.

Purple Finch: 11-20 Chisago 16 EL; 11-29 Ramsey 12 CO; 9-11 Hennepin WKE; 11-3 Duluth KS; 11-15 Morrison LSR.

Pine Grosbeak: 11-13 St. Louis 50 JCG; 11-19 Cook 100 JP; 10-30, 11-5 St. Louis MC, JCG.

Common Redpoll: 10-26, 10-28 St. Louis 3000, "thousands" JCG, KS; 11-23 Wright 300+ ETS; 10-1 Olmsted HBW; 10-22 St. Louis HM; 10-24 Mille Lacs MI.

Pine Siskin: 10-1 Cottonwood 40 LAF; 10-9 and 10-17 St. Louis 1000 JCG; 8-3 Ramsey JJ; 8-6 Chisago EL; 8-16

Duluth 1000s KS; 11-4 Duluth MC; 11-30 Mille Lacs WJH.

American Goldfinch: 8-30 Cass 100 BAH; 11-25 Carver 42 KH; 10-6 Mille Lacs MI; 10-16 St. Louis JCG.

Red Crossbill: 8-10 Pope WH; 8-19 Hennepin VL; 10-1 Mille Lacs MI; 10-8 St. Louis JCG; also reported in Chisago, Cottonwood, Goodhue, Lyon, Pine, Ramsey, Wabasha, Watonwan, Winona.

White-winged Crossbill: 10-12 Lake 100, J. Brandenburg; 10-28 Goodhue 40 KE; 11-9 Cottonwood 40 LAF; 8-9, 10-8 St. Louis MC, JCG; 9-22 Hennepin VL; 10-18 Washington WHL; also reported in Dakota, Lyon, Marshall, Nobles, Olmsted, Pine, Ramsey, Watonwan, Winona.

Rufous-sided Towhee: 10-20 Pine 1 imm. MIG; 11-4 Duluth E. Putnam; 11-21 Ramsey CO.

Lark Bunting: 9-18 Duluth MC.

Savannah Sparrow: 9-6 Duluth 25 TH; 9-16 Mille Lacs 28 MI; 10-3 Morrison LSR; 11-1 Lac Qui Parle RBJ and RGL.

Le Conte's Sparrow: 8-30 Cass BAH; 9-6 Wright ETS.

Henslow's Sparrow: 8-2 Winona RBJ.

Sharp-tailed Sparrow: 10-2 Clay ETS.

Vesper Sparrow: 8-3, 10-1 Cottonwood 30, 15 LAF; 8-28 Pine MHM; 9-26 Cook MAF; 10-18 Carver RBJ; 10-27 Duluth MC; 10-25 Lake BL; 11-10 Pope WH.

Lark Sparrow: 11-30 Chisago 2 FVS.

Slate-colored Junco: 10-16 Duluth 300 KS; 10-26 Chisago 150 EL; 9-9 Hennepin ETS; 9-10 Carver KH; 11-30 Morrison LSR; 11-30 Duluth MC and KS.

Oregon Junco: 10-30 Washington 20 WHL; 11-23 Pope 30 WH; 10-1 Carver MHM; 10-1, 11-30 Winona BTV; 10-5 Morrison LSR; 11-30 Hennepin MM.

GRAY-HEADED JUNCO: 11-24—11-28 Duluth at feeder, JCG, MC.

Tree Sparrow: 11-11 Winona 125 BTV; 11-13 Carver 200+ TH; 10-13 Carver

TH; 10-19 Duluth MC and KS; 11-19 Cook MAF; 11-28 Cook JP; 11-30 Carver KH; 11-30 Hennepin MM.

Chipping Sparrow: 10-16 Mille Lacs MI; 10-16 St. Louis JCG; 10-21 Hennepin EWJ; 10-21 Wabasha DGM.

Clay-colored Sparrow: 8-31 Mille Lacs 6 MI; 9-15 Hennepin WKE; 10-8 Duluth KS; 10-9 St. Louis JCG.

Field Sparrow: 9-25 Carver MHM; 11-30 Winona BTW.

Harris' Sparrow: 10-14 Winona 8 BTW; 9-16 Beltrami MK; 9-18 Cook MAF; 10-6 Hennepin VL; 10-29 St. Louis MC and JCG; 11-1 Cook JP; 11-17 Watonwan EDK; 11-30 Cottonwood LAF.

White-crowned Sparrow: 10-16 St. Louis 7 JCG; 9-11, 9-20 Duluth KS, DB; 10-1 Washington WHL; 10-10 Carver TH, 10-23 Hennepin ETS; 11-4, 11-5 Duluth MC, KS.

White-throated Sparrow: 10-9 St. Louis 40 JCG; 9-17 Washington WHL; 9-17 Hennepin WKE; 9-29 Carver 76 KH; 11-23 Duluth MC; 11-25 Mille Lacs WJH; 11-30 Olmsted HBW; 11-30 Winona BTW; 11-30 Hennepin MM and WKE.

Fox Sparrow: 9-29 Carver 40 KH; 10-12 Hennepin 25+ BAH; 9-26 Carver KH; 9-27 Duluth KS; 9-28 Hennepin RBJ; 9-28 Kanabec DB; 11-11 Ramsey EC; 11-19 Cook MAF; 11-20 Duluth MC; 11-30 Hennepin MM.

Lincoln's Sparrow: 9-13 Duluth 6 BTW; 9-14, 10-11 Wright ETS; 9-16 Hennepin DB and EWJ; 10-14 Ramsey MIG; 11-2 Lake KP.

Swamp Sparrow: 10-2 Washington 6 RHJ; 10-18 Wright 4 ETS; 10-26 Duluth KS; 10-29 Carver TH; 11-1 Morrison LSR; 11-7 Hennepin RGL.

Song Sparrow: 10-6 Carver approx. 40 TH; 10-23 Chisago 50 EL; 10-28 Duluth KS; 11-4 Morrison LSR; 11-30 Carver KH; 11-30 Winona BTW.

Lapland Longspur: 11-10 Lyon 300+ PE; 11-30 Dakota 50+ DB; 9-24 St. Louis JCG; 9-27 Duluth RBJ and VL; 11-19 Duluth MC.

Snow Bunting: 10-27 Cook 100s MAF; 10-27 Lake 85 JCG; 10-11 St. Louis JCG; 10-17 Lake JGH; 10-24 Lyon PE; 11-5 Hennepin RGL.

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SUMMARY: There were some interesting and/or rare species reported in the fall season—the Arctic Loon, Harlequin Duck, Surf and Common Scoter, Bobwhite, Piping Plover, Whimbrel, Upland Plover, Hudsonian Godwit, Red-shafted Flicker, Clark's Nutcracker, Varied Thrush, Brewster's Warbler, Orchard Oriole, and Gray-headed Junco. The concentrations seem less in some cases; for example, there was no report like last year's 25,000 Lesser Scaup, 10-30 at Lake Winnibigoshish, MC, but this is not a valid generalization, as for example the report of 900-1000 White Pelicans reported this year by LAF in Jackson

county is larger than any of last year's reports. The concern for lesser numbers is an outgrowth of the worry over pesticides! The eagle reports were about equal for this year and last, while there were more Peregrine

Falcon sightings. And interestingly, in addition to the St. Louis reports there were reports in Lyon and Hennepin counties for the Peregrine. The only generalization that seems perfectly safe is that it was a good season.

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WOODCOCK SEX AND AGE RATIOS AND WEIGHTS IN MINNESOTA¹

by William H. Marshall

For several years, during the 1950's, information on hunter killed American Woodcock was obtained by University of Minnesota personnel. This was prompted by a personal interest and that of graduate students Stanley W. Harris, David P. Olson and John J. Kupa. The encouragement and assistance of sportsmen, especially F. John Ward and G. Norman Slade, was most important.

We had hoped to obtain some ideas as to migration of woodcock in this state—especially the possibility of differential movements according to sex or age. Since substantial variations in the amounts of fat on individual birds soon became apparent, we then obtained more weight data.

During 1953, 1954, and 1955 data were collected on sex ratios using a combination of bill length and width of the 3 outer primaries (Harris, 1953). Sixty of the 271 birds were sexed internally—none were aged. The results obtained during the three seasons (which were October 3 - November 8, 1953; October 3 - November 1, 1954; and October 1 - November 5, 1955) are shown in Table 1.

TABLE I
WEEKLY SEX RATIOS
MINNESOTA SHOT WOODCOCK — 1953-54-55

Period	1953		1954		1955		Totals		M/100 Fe- males	
	M	F	M	F	M	F	M	F		
Before Oct.	9	4	5	6	23	11	19	21	37	57
Oct. 10-16	13	10	3	4	18	29	34	43	79	
Oct. 17-23	2	7	2	2	5	6	9	15	60	
Oct. 24-30	16	21	20	16	5	2	41	39	105	
After Oct.	31	15	15	1	1	16	16	100

¹Paper No 7161 Scientific Journal Series, Minnesota Agriculture Experiment Station, St. Paul, Minnesota 55101.

Although the ratio of total males to females shot was highest towards the end of the season a coefficient of correlation analysis by periods indicated little correlation as the season progressed.

A more concerted effort, using envelopes for sending wings to my office at the University, and distributing scales to obtain weights, was carried out in 1958 and 1959. The analyses of sex and age was done by John Kupa on the basis of the width of the 3 outer primaries 2 centimeters below the tip of the feather and on the wear shown in the primary feather tips (Sheldon, et al. 1958). These data are arranged by an unequal grouping of dates which take into account mid-week days when no data were available.

In 1958 a total of 287 wings were collected from within a 40 mile radius of Hinckley, Minnesota. Table 2 shows the result for 283 birds sexed and aged (4 were discarded).

TABLE 2
SEX AND AGE DATA
MINNESOTA SHOT WOODCOCK — 1958

Period Oct.	Adult		Total	Juv.		Total
	Male	Female		Male	Female	
1. 1-10	4	15	19	12	13	25
2. 11-15	15	26	41	34	42	76
3. 17-21	14	24	38	29	23	52
4. 25-30	8	9	17	8	7	15
Totals	41	74	115	83	85	168

Sex Ratios: There were 41 males (36%) to 74 females in the adult group. In all but the last six days of the month the ratio of adult males to females was of low magnitude—21%; 37%; and 37% respectively. In the last six days it was nearly even—8 to 9 birds.

In the juvenile group the six ratios for the season were nearly even—83 males to 85 females. This was also true by the four periods although periods two and three reverse the ratios.

Age Ratios: The total kill indicates 168 juveniles to 115 adults or that 60% of the bag was made up of juveniles. There was some variation by periods. Thus, during period 1 the percentage was 56, period 2—64; period 3—37 and period 4—46. This may indicate a movement of juveniles out of the areas toward the end of the season or, of course, a movement in from the north of adults. The former seems more likely as the number of birds in the coverts decreased.

In 1959 a total of 198 wings were collected from the same area. Dates for 20 wings were not recorded and 5 were unuseable. Table 3 shows these data.

TABLE 3
SEX AND AGE DATA
MINNESOTA SHOT WOODCOCK — 1959

Period Oct.	Adult		Total Adult	Juv.		Total Juv.
	Male	Female		Male	Female	
1. 1-4	9	8	17	4	13	17
2. 7-12	14	19	33	15	17	32
3. 14-18	4	10	14	6	6	12
4. 20-25	13	11	24	6	4	10
5. 29-Nov. 2	4	2	6	5	3	8
Totals	44	50	94	36	43	79

Sex Ratio: Males comprised 47% of the sample of 94 birds in the adult age class. There were differences in sex ratios of adults by period. The per cent of adult males decreased from period 1 through 3 being 53%, 42%, and 29%. Then they increased to 54%, and 67% at the end of the season.

Males comprised 45% of the sample of 79 juvenile birds. The per cent of males rose throughout the month forming 24%, 47%, 50%, 60% and 62% of this segment.

Age Ratios: The total sample of 193 wings showed that 47% of the population was made up of juveniles. The percent of juveniles during the first three periods was fairly even (50%, 51%, and 54%). This dropped to 29% in the fourth period, and rose again to 58% at the end.

In 1958 and 1959 we were also interested in weights with two ideas in mind—1) Perhaps there would be a difference in weights recorded for woodcock in the eastern United States which might indicate a different population and/or race of birds and 2) Perhaps weights would give a clue to migration.

Scales were loaned to several hunters and in other instances trips were made to their homes to weigh the birds after return from a successful trip.

In 1958 weights of 270 birds were obtained as summarized in Table 4.

TABLE 4
WEIGHTS OF 270 FALL
SHOT MINNESOTA WOODCOCK — 1958

Period	Adult		Juvenile	
	Male	Female	Male	Female
1. (Oct. 1-10) Sample (38) Mean	3 164.3	11 203.3	12 155.5	12 201.5
2. (Oct. 11-15) Sample (115) Mean	15 167.5	26 209.1	34 158.4	40 211.4
3. (Oct. 17-21) Sample (85) Mean	13 169.3	24 221.7	25 169.1	23 222.1
4. (Oct. 25-30) Sample (32) Mean	8 167.3	9 216.8	8 170.8	7 227.5

Generally speaking, both adult sexes showed slight weight gains from period 1 through 3 and then lost a little weight from period 3 through 4. Both juvenile sexes gained weight through all sampling periods, with the greatest gain being made from the first to the third period.

It is interesting to note that juvenile males began their weight gain at a point ten grams lower than adult males but equalled them by period 3. The juvenile females exhibited a more striking increase to weights above those for adult females. Sample sizes limit further speculation at this point.

In 1959 weights of 121 birds were obtained as shown in Table 5.

TABLE 5
WEIGHTS OF 129 FALL
SHOT MINNESOTA WOODCOCK — 1959

Period	Adult		Juvenile	
	Male	Female	Male	Female
1. (Oct. 1-4) Sample (22) Mean	6 167.7	5 185.6	2 148.0	9 193.4
2. (Oct. 7-12) Sample (40) Mean	6 166.0	13 211.5	7 166.2	14 209.6
3. (Oct. 14-18) Sample (14) Mean	2 171.5	8 215.5	2 167.0	2 197.0
4. (Oct. 20-25) Sample (30) Mean	13 183.5	10 221.2	5 171.6	2 211.0
5. (Oct. 28-Nov. 2) Sample (14) Mean	4 177.7	2 219.0	5 184.0	3 224.3

The weights of both adult sexes increased steadily the first four periods and then dropped a little in the last period. Both juvenile sexes showed increasing weights throughout the periods except for the females between period 2 and 3. The juvenile males were 20 grams lighter than adult males at the opening of the season but were equal to them by the second week and were greater at the end of the season. The comparative weights of females by ages varied more, but juvenile females taken during the last period were 5 grams heavier than adult females.

These weights were compared with those available in the literature—Nova Scotia (Tufts, 1940), Michigan (Blankenship, 1957) and Wisconsin (Greeley, 1953). In Table 6 data were lumped by two week periods and by sex classes to correspond with tables shown in these publications.

TABLE 6
WEIGHTS, IN GRAMS, OF FALL
SHOT WOODCOCK FROM FOUR AREAS

State	MEAN WEIGHT MALES				MEAN WEIGHT FEMALES			
	Oct.		Oct.		Oct.		Oct.	
	No. 1-15	No. 16-31	No. 1-15	No. 16-21	No. 1-15	No. 16-21	No. 1-15	No. 16-21
Nova Scotia	12	160	42	175	13	202	31	216
Michigan	55	158	32	172	49	196	28	216
Wisconsin	15	164	65	170	24	198	80	215
Minnesota (1958)	64	160	54	169	89	208	63	222
Minnesota (1959)	29	165	45	175	45	198	23	219

On the basis of these data there does not appear to be any regional differences in weights. The range for males is 7 grams in the first half of October and 6 grams in the second. For females the range is 12 grams and 7 grams, respectively.

In all cases birds taken in the last half of the month weighed more than those taken in the first half.

A search of the literature revealed that only Greeley (1953) had published weight data by sex and age classes. A comparison of the Minnesota weight data with Greeley's indicates no differences among the four sex and age classes during the two halves of October.

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NOTES OF INTEREST

MOUNTAIN BLUEBIRD SIGHTING—On October 14, 1969, as I was driving out of Hyland Park in Bloomington, Hennepin County, around 1:30 p.m. I noticed a bird sitting on the stop sign. It dropped to the ground several times and returned to sit on the sign, and then it hovered over the ground and returned to sit on the gate. The bird showed a blue back when dropping to the ground but when it returned to sit on the gate it faced me and I saw the dark eye, blue throat fading through the breast to white under the tail. I was sitting in the car about 15 to 20 feet away and used my binoculars (Tasco 8:40WA). The blue color was very different from an Eastern Bluebird—lighter, brighter, the best adjective I've found is

"cerulean." I used Robbins et al "Birds of North America" to identify the bird as a Mountain Bluebird. A second bird stayed in the background and was periodically chased by the first one; it appeared to be the same shape but I could not get a good look as they flitted and hovered and kept moving down the power lines. After about five to ten minutes of viewing and following the birds, I left to notify Mrs. Jack Mauritz, who lives in the Park District, and she saw one of the birds later in the afternoon in the company of some Eastern Bluebirds. About 3:30 p.m. Don and Shirley Bolduc arrived and both saw the two birds, still with the flock of Easterns, and they identified these as a pair of Mountain Bluebirds, male and female. The Bolducs have seen these birds many times in the West; for Mrs. Mauritz and me it was a first.—**Karol Pieper, 3615 Grand Ave., Minneapolis, Minn.**

CLARK'S NUTCRACKER IN HENNEPIN COUNTY—On September 9, 1969 five of us were spending the day at Hyland Lake Park. My sister from Seattle and I were leaving early right after lunch, but drove around to the further parking lot first. Killdeer, Blue Jays and Yellow-shafted Flickers were in the grass, probably interested in grasshoppers. When this bird flew up from our approaching car to a small tree about 75-100 feet away I thought Blue Jay but stopped the car because something in the pattern did not seem right. With my 8 x 30 Zeiss binoculars I saw the head and chest of the bird were entirely gray, black eye, wings black with a white patch and white in the tail. I was about to check for variants in Gray Jays when my sister said, "It looks just like a bird we have in Seattle called the Clark's Nutcracker." I checked in my book by Robbins, Zim and Singer and found our bird. She said one could hold up a piece of bread in one's hand and the nutcrackers would swoop by collecting the bread as they flew. We drove back and got the other women who came and watched the bird for about a half hour, catching grasshoppers and then flying to the near-by trees. This is the first time I had ever seen a Clark's Nutcracker. Also a first for Irene Dahl and Vi Merry. Alvina Joul who has seen many of these birds in the west also confirmed our sighting.—**Violet Lender, 2817 Robbins, Minneapolis, Minnesota.**

ANOTHER VARIED THRUSH RECORD—On December 11, 1969, at 4:30 p.m. my wife saw a bird in the top of an oak tree in our yard that looked like an immature Robin but had a shorter tail. Light conditions were poor. The bird flew away before I could get my binoculars. On Sunday, December 14, at 10 a.m. she again saw the same or a similar bird. This time it was on a shoveled path in a neighbor's yard (the snow cover was about 10 inches). It appeared to be searching in the snow for food like a Robin would search for worms, and in behavior it reminded us of a Robin. We both observed the bird for about three minutes and I was able to walk within 25 feet of it before it flew to a low bush. It had a large orange eye stripe and a robin-like breast with a grey band across it. After checking Peterson's Western Bird Guide and Robbin's Birds of North America and also the Loon, Volume 38, No. 1, March 1966, we are positive that we saw our first Varied Thrush—probably a female. **Robert Nordgren, 78 Seymour Ave. S.E., Minneapolis, Minnesota.**

WINTER RECORD OF A CANADA X WHITE-FRONTED GOOSE HYBRID(?)—On December 20, 1969, the day of the Collegeville Christmas Bird Count, Bob Russell was covering the campus of St. John's University. His area included a small part of a lake that is kept open all winter by warm water discharge from the college's power plant. Every winter several wild Mallards and a few free-flying Canada Geese can be found among a flock of semi-domestic Mallards. In past years such species as American Coot, Wood Duck, Snow Goose and White-fronted Goose (first Minn. winter record) have win-

tered at this location. This year Bob found among the usual Mallards 3 Black Ducks, 3 Canada Geese and the strange-plumaged goose in question. The next day Bob and I returned to the lake and studied the bird for about a half hour at a range of 10-20 feet. The description of the goose is as follows. Size: about the same as the 3 Canada Geese present (which we feel were average-size Canadas); Body color: uniform greyish-brown except for head (see below), a black tail, and a white rear under the tail; Legs: orange; Bill: pink with a black tip; Head, a white patch at the base of the bill as in the White-front, but also with a diffused washed-out whitish cheek patch that extended around the eye to form a distinct white eye-ring.

Conclusion: There is no question about the bird in question and the Canada Geese being wild. Bob and I had checked this area in early November and the geese were not present, so they must have migrated in later in the month. All four geese were healthy and free-flying. However, there is considerable question about the identification of this goose as a Canada X White-fronted Goose hybrid. I know nothing about hybrid geese, nor could I find anything about them in the several books I checked. My tentative identification is more of a guess than anything. The goose would be an adult White-front because of the white at the base of the bill, the orange legs, and the pink bill. There was no speckling on the belly, but I've read that not all White-fronts have this speckling. However, I feel this bird may be part Canada Goose because of the suggestion of a cheek patch and because of the larger size (though a larger White-front race called the Tule Goose exists). Therefore, I feel that the goose is the above-mentioned hybrid. I would welcome any comments from readers who can offer any information or even a more positive identification based on my details.—**Kim R. Eckert, 1515 Central Ave., Red Wing, Minnesota.**

MOCKINGBIRD—While making my daily rounds of St. Mary's College campus on November 8, 1969, I heard a strange call coming from our apple orchard, the trees of which are still loaded with unpicked apples. The sound came from the ground beneath the trees, so I stealthily walked among them and came upon what appeared to be a Mockingbird feeding on a fallen apple. The bird then flew up into a tree where I had a good chance to study him for several minutes. His bold black and white pattern, long bill and yellow eye confirmed my observation. As he flew off toward the valley across the creek, his white wing pattern became very evident. He has not been seen in the area since.

FIELD SPARROW—On November 18, 1969 while walking along the creek in St. Yon Valley, I saw a Field Sparrow among a flock of Tree Sparrows and juncoes. Thinking out loud I said to myself I hope this bird stays for the Christmas Census. On several subsequent trips to the same area I failed to spot him again. Two days before Christmas I went to the Union Center to pick up my mail. As I walked along the sidewalk near Aquinas Hall, I noticed the snow had melted near the wall of the building and there, feeding on the grass seed of the open ground, was a Field Sparrow. His rufous cap and eye patch, two white wingbars and pink bill and legs were unmistakably those of this sparrow. He was seen on our Christmas count, December 28, and again on January 1st by Harding Huber, Ray Glassel and me.

WINTERING BLUEBIRDS—On December 26, 1969, two days before our Christmas census, my nephew Fran Voelker and I made a scouting trip of our count area. In East Burns Valley we saw 7 Eastern Bluebirds feeding along the roadside and in the creek bed. On the day of the census, December 28, the birds were still there and two more were observed in each of the

two valleys, Cedar and Pleasant. On January 1st, Ray Glassel, Harding Huber and I saw 15 Eastern Bluebirds in a Pickwick Valley apple orchard. We saw many Robins feeding on the hackberries near Lake Winona. We also observed a Yellow-bellied Sapsucker near Pickwick and a score of Red-headed Woodpeckers throughout the Winona area.—**Brother Theodore Voelker, St. Mary's College, Winona, Minnesota.**

HOODED WARBLER OBSERVATION—On September 10, 1969 between 4:30 p.m. and sundown on a dull day while reaching for my glasses (to straighten out my astigmatism) to determine whether I was looking at a Ruby-crowned Kinglet or a Chestnut-sided Warbler (it was the latter), the immature Chestnut-sided flew into an oak tree, leading me to something much more interesting. The bird in question was somewhat larger than the Chestnut-sided. It was without streaks and wing-bars. The back was pale olive, and the breast (what I saw of it) was a very pale yellow. However, its face was a bright yellow surrounded by black feathers. The bib was not completely developed. In the light in which I saw it and among the oak leaves, both the back and breast appeared much more pale in color than the bird is shown in either Peterson's Guide or Birds of America. The bird was at a distance of about 40 feet and at eye level for less than ten seconds.—**Mrs. John S. Peake, 43 Pheasant Lane, North Oaks, White Bear Lake, Minnesota.**

LOON CONCENTRATION ON MILLE LACS LAKE—Just at dawn on November 11, 1969, I had occasion to be in a small boat proceeding from Hazelglade Resort on Mille Lacs Lake, to Spider Island, located about a half mile off shore. This area lies between Isle and Wahkon, at the southern end of the lake. The weather was clear and cold, with a northwest wind of 5 to 10 mph. Dick Smith of White Bear was my companion. As the sky brightened, we began seeing birds overhead. It was still too dark to determine the species, but we noticed that they flew singly, and each bird was flying toward the east. As the sun rose, more and more of these birds were visible, on all sides and far overhead. By now we had arrived at the island, and we realized that the flying birds were all Common Loons. As far as we could see, clear to the horizon, there were loons everywhere, all flying straight east. The air was filled with these big birds for the next couple of hours, during which time literally hundreds of loons were within sight of our location. They all maintained the west to east flight pattern observed at sunup. At about 9 a.m. this began to change, and soon the loons visible were engaging in diving, swimming and seemingly aimless flight. In other words, normal loon activity. I used my 7 x 35 glasses diligently, in a vain effort to pick out a Red-throated Loon, but to no avail. We left Spider Island in mid afternoon, and at that time many loons were still in evidence, flying about, and feeding. In the past, I have observed many of these birds on Mille Lacs in late autumn, but this heavy west to east flight seems worth noting. Very conservatively, I would estimate that at least 500 loons passed through my viewing area between 7 a.m. and 9 a.m. of that day. It seems that Mille Lacs is an important link in the migration route of the loons. I suppose this might be because of an abundance of fish like tullibees, central location, and the fact it freezes later than most lakes. On another occasion, my wife and I counted more than a hundred loons from Wigwam Bay, to the south end of the lake, on highway 169. This was October 26, 1966, and an unseasonably hot, windless day. The thermometer stood at 70 degrees, with not a cloud in sight. As far as we could see, with scope and glasses on the bright glassy surface, there were loons, along with Horned Grebes and many diving ducks.—**T. R. Campbell, 5267 W. Bald Eagle Blvd., White Bear Lake, Minnesota.**

A NOTE ON EAGLE NEST ADORNMENT—While banding Bald Eagle nestlings on the Chippewa National Forest, we have observed a very curious behavior. In all of the 12 nests climbed into, we found a fresh sprig of white pine needles. This was not part of the nest structure or nest lining, but appears to be placed in the nest at random. It is always green and fresh, always white pine, and is apparently replaced from time to time. It occurred in all nests observed, regardless of the species of the tree the nest was in (red pine, aspen, elm, white pine). Red pine is three times more abundant than white pine on the Forest. The only conclusion is that Bald Eagles consider white pine needles as something very special in the nest. It is interesting to consider the function of this nest adornment. Someone suggested the possibility of an insect repellent from some chemical in the pine needles. Maybe it's a method of communicating between the eagle pair, or insures the pair bond during the nesting cycle. One of the pair must decide which nest to use (if they have more than one), and this may be a way of indicating the choice.—**John Mathisen, Chippewa National Forest, Cass Lake, Minnesota.**

TREEFROG IN SAPSUCKER'S NEST—In "The Loon," Volume 41, Number 3 Mr. Thomas C. Dunstan reported finding a treefrog in an Osprey nest. In the summer of 1968 I made an observation resembling his. In June and July I used to visit a small woodlot across the N.W. corner of Shakopee Lake, 5 miles from Onamia, Mille Lacs County. There in a maple tree, about 25 feet off the ground, was a Yellow-bellied Sapsucker's nest. I used to watch the adults feeding their young in the nest and later in the nearby trees. On August 1 I saw something peeping out of the entrance to the nest. Through my binoculars I saw the front part of a treefrog sitting there. He was occupying the nest after the sapsuckers had gone.—**Michael Ivanovs, Onamia, Minnesota.**

CURIOUS CROSSBILL-SISKIN BEHAVIOR—Perhaps the readers of The Loon would be interested in a curious episode I observed involving Red Crossbills and Pine Siskins. On the afternoon of December 31, 1969 I went to Wirth Park in Minneapolis and stationed myself in a place where I could observe the feeder located near the curator's cottage in the Eloise Butler Sanctuary. The side of the feeder facing me was occupied by a male and female Red Crossbill. There were quite a few small winter birds in the vicinity, including some Pine Siskins. The siskins would enter the crossbill's "side" of the feeder and periodically I would see one fluttering around one of the crossbills. Observing this activity with my glasses, I discovered that from time to time a Pine Siskin would try to steal a seed from the beak of a crossbill. None of my books describe this activity, and I am wondering if any Loon readers have seen or reported it. I suppose something like this could be expected of Pine Siskins as they are aggressive and quick. Also, their beaks are, I suppose, the best well-adapted of our native finches for crushing seeds. On the other hand crossbills, while they have a beak which is admirably designed for opening pine cones, may not have a beak which is so efficient for holding seeds.—**Charles L. Horn, Jr., 5100 Juanita Avenue, Edina, Minnesota 55424.**

FEMALE ALBINO ROSE-BREADED GROSBEAK—On June 27, 1969 we saw a bird with a large bill come to the sunflower seeds. It was the shape and size of the Rose-breasted Grosbeak, but when it flew there was much white showing, in fact the breast appeared to be pure white. June 28 it came to the window feeder again, and sat long enough for us to see faint streakings on the breast, with the general markings of a female Rose-breasted Grosbeak, except that the lines and stripes leaned to a rufous color,

and the ordinary lighter grosbeak markings were pure white. We could only decide that this was an albino phase of the female Rose-breasted Grosbeak. We saw the bird often during the first week of July, and then no more. The above took place at our former home on the Minnesota River Bluffs.

RED-BREASTED NUTHATCH NESTING IN BLOOMINGTON—From Aug. 16, 1968 and through the winter of 1969 we were regaled by the twitterings and little tinhorn sounds of 5 Red-breasted Nuthatches. There was a continual stream of argument between 3 males and 2 females. One cold winter day I put some sunflower seeds on my red-gloved hand, stood under the feeder, and tinhorned in my best nuthatch fashion. Soon a Red-breasted Nuthatch lit on the feeder and as I called, the bird eyed me, left the feeder and took a seed from my hand. Three times the nuthatches came and sat on my hand, both male and female—the last bird becoming selective and throwing out a seed or two. Our records show that we saw Red-breasted Nuthatches until May 22, 1969 and then again on June 14. On June 27 we saw the female on the suet bag, and on June 30 we noticed that she was diligently carrying bits of suet away, so we felt sure that she had a nest nearby. On July 1st she appeared with two young who sat on the eaves and fluttered their wings as she flew up and down with bits of suet for them. They were large and much brighter in color than the parent. On July 2 the female again appeared on the suet bag, and three others lit on a branch nearby, two of them fluttering their wings for food. We were not sure if the fourth nuthatch was a young bird or the male parent. The female appeared to be very fussy, and soon took her brood into more dense cover. The above also took place at our former home on the Minnesota River Bluffs.—**Edward and Sophia Harms, 4236 Wooddale Ave., Minneapolis, Minnesota.**

BOBWHITE OBSERVATION IN WINONA—October 4, 1969 we heard an unusual bird call from the maple tree in our backyard in Winona. Cleaning upstairs, I ignored it the first time, then after a couple of repetitions, I asked Mr. Dahm, washing storm windows by the garage, if he'd heard. He agreed it was "different." "Sounds like a game bird," I said. I took binoculars and went for a look. The calling had stopped. As I rounded the corner of the house there was this buffy bird with slightly raised crest, but now on the south fence-line, near our water supply. Has that Ruffed Grouse (a visitor in the yard two weeks before, 3 - 3:40 p.m., on Sept. 20) come back, I thought? No, this was smaller, no feathers on its legs, and that face—it Couldn't be! Then, coming across the easterly neighbor's yard in single file, were 7 young Bobwhite, 2 males and 5 females, with the unmistakable facial pattern, to join their mother under the bushes about the pool area. They did not drink, however, just stood in a quiet group. Mr. Dahm had a good look at the birds from the garage shelter. The little covey, reunited with mother, took off from whence it came, eastward across two rear lawns, disappearing at the alley line. The birds were here less than five minutes. With glasses I went around the block, but did not see them again. The Audubon Nature Encyclopedia, Vol. 2, p. 294, says Bobwhite may travel 2-3 miles from their hatching place. Ken Krumm, local U. S. Wildlife official, thinks the birds may have come from grasslands along our lake or river. This is the first time we had heard the quail's gathering call, and the first time from the height of a large tree.—**Mrs. J. Milton Dahm, 357 E. Fifth St., Winona, Minnesota.**

LATE RUBY-CROWNED KINGLET OBSERVATION—On the last day of the Twin Cities' record breaking 89 hours of continuous snowfall in early December, 1969, I was out on our deck brushing off snow from the feeders. From this deck one looks down one story to the driveway. As I finished cleaning the feeders, I glanced down toward the driveway in the direction

of the steps leading up to the front of the house. (The deck is on the back of our home). By the steps is a 10 year old White Cedar. At 8 a.m. on December 9, 1969, I was surprised and delighted to see a Ruby-crowned Kinglet dart into the Cedar, which was heavily laden with snow. The kinglet was probably looking for insects and larvae under the "umbrella" of snow on the branches. At the time that I first saw the bird, the light was poor because of the leaden skies and the snow falling; but I recognized the shape of the bird as that of a kinglet, and I did see the wingbar. The tiny bird really showed no color against the snow, and just seemed very "dark." At noon on the same day, the Ruby-crowned Kinglet appeared at one of our log feeders fifteen feet from the front door of the house. At this time I ascertained that it was a Ruby-crowned Kinglet without the aid of a pair of binoculars. I saw the broken eye ring and the plain dark olive green head; but I could not tell at that time whether it was a male or female as it did not erect its crown feathers. It was sampling suet and peanut butter mixed with cracked corn. At 3 p.m. it appeared again at the same log feeder. On December 10, 1969, the snow had finally stopped and at last I was able once more to put out some of my traps in hopes that I would be able to trap and band some of the winter finches that were feeding at our various and sundry feeders. When the snows are very deep, all of my banding activity is conducted on the deck, as my various ground traps are buried and quite inoperable. Five Potter-type 2 and 3 cell traps were placed on the deck at 8 a.m.; 3 on the railing, and 2 on the floor of the deck. At 10 a.m. I was very happy to see the Ruby-crowned Kinglet go into one of the 3 cell traps on the floor. While examining the bird as I was banding him (red feathers erected on crown as I held him), I examined him for fat content by blowing on his feathers so I could see his body. There was substantial fat on his belly and in the axillar region. I considered him in good condition with a "fat class" of 2+. This is a common amount of fat seen on a migrant during spring and fall at this latitude. I saw the Ruby-crowned Kinglet again on December 10, feeding on suet and peanut butter from one of our log feeders in the back yard. This observation was at 3:30 p.m. From December 11, through December 15, I saw him at least three times each day eating peanut butter which he seemed to prefer above suet. The night of the 14th was quite cold with the temperature near 5 degrees F. I wondered whether the little sprite would last through the night. He did, as I noted above that I observed him on the 15th. I did not see him on the 16th; and I observed him again 3 times on the 17th of December. The 17th was a warm day for that time of year; the temperatures were in the 30's, and it sleeted that night, I did not see him after the 17th of December of 1969. In checking my banding records, I found that in 1964 I trapped and banded a Ruby-crowned Kinglet on November 16, 1964. It was captured in a mist net. On November 24, 1964, I banded another Ruby-crowned Kinglet. It was trapped in my "Figure 8" trap (large ground trap shaped like a "8"). The bait was water dripping into a pie tin, on the ground. Both of these November '64 records were also males.—Mrs. Murray Olyphant, Jr., 4000 Hidden Bay Road, St. Paul, Minnesota.

SHRIKE KILL—The date was March 26, 1969 about 5:10 p.m. when a Loggerhead Shrike captured a House Sparrow under a black hill spruce, about twenty feet from me, in my backyard in north Minneapolis. The sparrow struggled violently, wings beating and continuously crying calls, but the shrike fought with it and striking it often and holding the bird down with its bill. After about five minutes, it flew with the bird about 35 feet, near our outdoor fireplace, rested momentarily and then flew north to a neighbor's bush, wedged the bird between an upright trunk and a 45 degree angle branch. Then the bird tugged and started to tear and feed on its victim.

Sometimes the dead sparrow came loose and dropped to the ground but it was picked up and rewedged. The bird worked one hour from capture to finish, then it flew to a flowering crab and rested about ten minutes—then flew away.—John Jarosz, Museum of Natural History, University of Minnesota, Minneapolis, Minnesota.

ADDITIONAL WOODCOCK RECORDS FOR WESTERN MINNESOTA—After reading the article on “American Woodcock Near Itasca State Park” by Dr. William Marshall, in the December issue of *The Loon*, I am prompted to write the following: We moved to the Detroit Lakes area in 1966. On April 11 of that year I observed three male American Woodcock performing in our woods, 3 miles east of town. Heavy snows and a short cold period of 2 or 3 days put a halt to spring migration activities. Several weeks later, around May 1, I heard a male Woodcock performing near a Tamarac-Spruce swamp, 3/4 mile north of our home. Each year since that time I have heard and observed male Woodcocks performing near our home—some years late into May. Also in 1966, I observed a male Woodcock performing 1/2 mile N. E. of Pine Lake on the Tamarac National Wildlife Refuge. I have checked this area each year from 1966 - 1969 and found a male Woodcock performing on nearly the same spot. This was probably not a migrating bird since it was active throughout the month of May. I have yet to locate a Woodcock nest or flush a brood in this area of Becker County, but then I have made little effort in this regard. I have heard male Woodcocks performing on the Red Lake Wildlife Management Unit, south of Williams, Minnesota and I suppose that area with its numerous beaver flowages and artificial impoundments provides suitable habitat for breeding Woodcock. The American Woodcock to me is an amazing and unique bird. Between 1960 - 1965, I established and ran a number of singing count routes in Mille Lacs and Kanabec Counties. I noted particularly the high counts in and around the Mille Lacs Wildlife Management Unit. I attributed this to the large number of active beaver colonies within the Refuge (closed to beaver trapping for 10 - 12 years) and the scattered small dairy farms surrounding the area. Some limited grazing and maintaining wild hay meadows seems to enhance Woodcock habitat. It is interesting to note that literature on the American Woodcock prior to 1940 indicates a non-existent or very low population north and west of the Twin City area. The American Woodcock seems to be an extremely manageable game bird. With good beaver management and perhaps supplemented with some shore line clearing along streams and around alder and Tamarac swamps, Woodcock will respond quickly.—L. J. Koopman, Route 2, Box 6, Detroit Lakes, Minn.

BOOK REVIEWS

A Place In The Woods. By Helen Hoover. (Knopf) 1969. 292 pages. \$5.95.

Have you ever wanted to quit your job, leave the city for good, get yourself a log cabin on a beautiful wilderness lake in northern Minnesota, and settle down there with your spouse? We all have, of course. But Helen and Adrian Hoover actually did it, and thereon hangs a tale.

As told in this latest book by Mrs. Hoover, this tale is a fascinating true

account of the adventures and misadventures of the Hoovers at their home on the Gunflint Trail. **A Place in the Woods** contains many pages of perceptive nature observation, artfully shared with us; yet, more than any of the author's previous books, this is the human story of the Hoovers themselves.

Never grimly, often with dry humor, Mrs. Hoover recounts the many frustrations, the frequent mishaps, the

unending hard work, and the really bad luck that these two innocents from Chicago experienced during their early years in the woods. Their worst luck came when an accident left both Helen and Adrian Hoover with painful and partially disabling injuries that took months to heal. That accident also wiped them out financially and blasted all hopes they had of earning anything immediately. All this never made them think of leaving their wilderness home, but for many months it actually forced them to live on poor and scanty food. Finally, economic necessity forced Mrs. Hoover to become a nature writer—a fact we may be thankful for.

Among Minnesota nature writers, Sigurd Olson may be the master of exposition, but Helen Hoover clearly is master of the anecdote. And she strings anecdotes together with great skill to make an easy-flowing narrative that is difficult to lay down. Some incidents in this new book appeared in her earlier books, but here they are far different in scale—much expanded or much condensed; and most of the material here is entirely new.

Mrs. Hoover, who is an MOU member, spoke at the 1967 annual meeting of the MOU. Those of you who heard her, and those who have read her earlier books, know how entertaining and informative she can be. Her sentences sparkle, her chapters vary in content, pace, and mood, and every page is interesting.

A Place in the Woods deserves a place on your bookshelf.

Robert E. Turner

The Hidden Forest. Text by Sigurd Olson. Photos by Les Blacklock. (Viking Press) 1969. 127 pages, 64 in color. \$14.95.

The Whitetail fawn photo on the front of this book's jacket strikes me as perhaps the most hauntingly beautiful wildlife photograph I have seen. And Les Blacklock's other color photos are nearly as good. With their captions and a three-page note on the photography, they fill 71 pages—more than half of this splendid book.

Chosen from more than 500 photos submitted by Blacklock, the illustrations are uniformly outstanding for their beauty and their ecological significance. The captions or legends for the photos, unfortunately, are not on the pages with the pictures they describe. This is necessary because the pictures "bleed"—that is, run off the edges of the pages, without white margins. This makes for artistic unity and big color plates, but the legends would be most helpful if they were with the pictures.

Besides the fawn, the photos include shots of Whitetail buck, Red Fox, Red Squirrel, Coyote, Cottontail, Bobcat, Raccoon, Cape May Warbler, Great Horned Owl, and Mallards. The remaining pictures show closeups of the forest floor or broader scenes of northern woods and waters. I doubt that any book contains a better collection of color nature photos by one photographer.

Some big picture books of nature have fewer pictures than this one and cost more. Many have little or no text. But Sigurd Olson's text for this book is ample, and in many parts it reads like a prose poem. It gives us what amounts to a short and pleasant course in forest ecology.

We hear so much about Sigurd Olson as a wilderness guide and latter-day voyageur that we sometimes forget that he is also a trained ecologist, a longtime college professor of biology, and an old pro at outdoor writing. In **The Hidden Forest** he is at his best. This book (and most of what Olson writes) demands some concentration, for his sentences are loaded with information; but his writing is so good that he readily commands our full attention, and we read him effortlessly and with pleasure.

Now in its second or third printing, this book is the result of a happy collaboration between two outstanding Minnesota naturalists. I recommend **The Hidden Forest** highly.

Robert E. Turner

The Technique of Bird Photography. By John Warham. (The Focal Press, London and New York) 1956. According to a recent ad, this book of 199 pages now costs \$9.95, or it is free with your new membership in a book club.

I own a number of books on wild-life photography. Each is well written, well illustrated, and full of information. Some of these books are fairly recent; but regarding technical matters of films, shutters, lenses, and cameras, each is somewhat obsolete.

This 1956 book by John Warham

is the most out-of-date of the lot. It also is very British in its references to brand names and to size and types of equipment. Warham is good in his descriptions of photographic blinds (which he and other Englishmen call "hides"), and he is good on nest-finding and on certain other matters pertinent to bird photography. But I am sure you would learn more (and get much more for your money) by reading the hardbound books on nature photography by Russ Kinne and by Allan Cruikshank and the paperbacks by David Linton and by Erwin Bauer.

Robert E. Turner

1969 ENDOWMENT FUND CAMPAIGN

On behalf of the Minnesota Ornithologists Union, the Endowment Fund committee wishes to take this opportunity to acknowledge and thank the following people for their contributions to the recent M.O.U. Endowment Fund campaign. Your interest and support have helped to build the fund to a level where it can start to help Minnesota birds and birding on a continuing basis.

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American Woodcock on nest in Hubbard County. Photo by Gerald H. Maertens. (See notes of Interest)

The **LOON** Organ of the Minnesota

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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 M.O.U. officers wish to point out to those interested in bird conservation that any or all phases of the M.O.U. program could be expanded significantly with gifts, memorials or bequests willed to the organization.

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The President Writes . . .

HAZARDS OF NATURE STUDY

Surely nature study must be the safest of hobbies, yet some caution is necessary. I once peeked over the top of a low wall and almost bumped noses with a big python coming up the other side. When you travel in America snakes can be a danger, for poisonous snakes occur in parts of most states, even Minnesota.

Accordingly, when I am in unfamiliar territory I usually inquire about poisonous snakes. In western South Dakota I once asked a local resident, "Any rattlesnakes around here?"

"Not many," he said. "They're so scarce now that it would be an honor to be bitten by one.

I never will be able to see it that way. Even when it is not fatal, the bite of a poisonous snake can be agonizing, it can cripple you for life, and it can ruin you financially by putting you in the hospital for weeks.

At times some birds can be dangerous. Marsh Hawks have rapped my head with their talons more than once when I have been at their nests. And when I was some 15 feet high in a flimsy tamarack tree, clinging with one hand and operating a camera with the other, I was photographing a Long-eared Owl's nest when the parent bird attacked me.

Photographer Fred Truslow was raked on the scalp by a Barred Owl. And in England a photographer lost an eye when attacked by a large owl. In Montana a friend of mine once found a Rough-legged Hawk with a broken wing. When he tried to befriend the bird, it sank its talons completely through his arm just above the wrist.

Raptorial birds have cruel beaks, too. Bird banders know that even a little shriek can inflict painful wounds on bare hands. Bitterns and larger herons can stab dangerously with their bills, and I have read that a crane can stab a person fatally.

Large wild mammals should never be trusted. Deer have killed people, and at least one woman was killed by a Pronghorn Antelope buck. I could fill this magazine with true bear stories, some of them frightening. When I was a ranger-naturalist in Yellowstone during the 1950's Black Bears caused more than 100 injuries—some of them serious—to park visitors each summer. Before you enter a national park, impress upon your children that real bears have nothing in common with Smokey Bear, Yogi Bear, and Hamm's Bear. A full-sized Black Bear is bigger, stronger, and more fearsomely armed than a big gorilla.

On the Wyoming plains in the failing light of a late afternoon I once spotted a herd of big grazing animals a couple miles away. Thinking they might be Wapiti, I hiked toward them for a closer look. But the closer I got the darker it became. By the time I was within 200 yards of the beasts it was night, and in the darkness I still could not identify them. Suddenly there was a snort, and the whole herd stampeded directly toward me. Alarmed, I ran straight at them, shouting and clapping my hands. At about 25 yards the oncoming wild horses—for such they proved to be—swerved slightly and thundered past me.

Traveling on skis early one winter, my friend Dave Condon, former Chief Naturalist of Yellowstone, approached too close to a bull Moose. Without warning, the huge deer charged. That's how Dave became the only person ever to climb a tree while wearing skis.

ROBERT E. TURNER

THE NESTING ECOLOGY OF SOME HAWKS AND OWLS IN SOUTHEASTERN MINNESOTA

by Paul Le Duc

I. INTRODUCTION

This study was undertaken with the intention of determining ecological requirements for all breeding pairs of raptors on a six and one-half square mile tract of land in southeastern Minnesota. Since the task proved to be too broad for the amount of time available, however, my efforts were confined to a study of the larger common hawks and owls. Included in this category are Red-tailed Hawks, Barred Owls, and Great Horned Owls. Other raptors nesting in the area, but not considered in this study, include Screech Owls, Sharp-shinned Hawks, Cooper's Hawks, and Sparrow Hawks. Red-shouldered Hawks also nest in this part of the state, but are not abundant. Broad-winged Hawks and Rough-legged Hawks are seen occasionally, but only during migration or the winter months.

A number of field observers have already accumulated considerable data about the species considered in the study. Baumgartner (1939) concluded that human interference is the chief limiting factor in determining the size of Great Horned Owl populations and territories. Orians (1955) conducted a Red-tailed Hawk survey in Wisconsin concerning their food habits and nesting density. Orians and Kuhlman (1956) examined ecological requirements for density and interaction between Red-tailed Hawk and Great Horned Owl populations in the same state. Hagar (1957) conducted a similar investigation in New York State.

In this study data were obtained for nesting densities, territory size, habitat requirements, productivity, food habits, and interspecific as well as intraspecific behavior. Most data were collected from the study area, although observations from other portions of southeastern Minnesota were

also made and are included here as well.

II MATERIALS AND METHODS

Field work was begun in late March, 1968, and extended through mid-summer, 1969. A total of 84 days was spent collecting data, the most intensive work being done in late winter and spring. In 1968, two and one-half square miles of study area were examined. However, data from an area this size were too inconclusive, hence the amount of terrain investigated in 1969 was expanded to six and one-half square miles (Figure 1). This area is located in Winona County, Minnesota (Range 6 West, Township 105 North, Sections 20, 21, 28, 29, 31, 32, and 33). Dividing the study area, Campbell Valley extends northeast to southwest through it, with numerous coulees branching from it, some as much as one-half mile long. Throughout the area, the tops of the bluffs are approximately 500 feet above the valley floor, and in most instances the slopes are densely wooded. Approximately 35% of the total area is covered by forest, the remainder being used for agricultural purposes (Figure 2). Dominant forest vegetation consists mainly of oak-hickory associations on the dryer slopes and maple-basswood associations on the moister valley floor. Patches of southwestern slopes are typically open grassland bordered by stands of birch and aspen. Since the northern portion of the valley is densely wooded, only the southern portion and the surrounding uplands are used for agricultural crops, which include primarily corn and fodder.

This area was chosen as a representative sample of the valley network in this locale, formed by the Mississippi River system. In most instances, the wooded portions of the study area



FIGURE 2. The wooded areas of the study area (shown in dark).

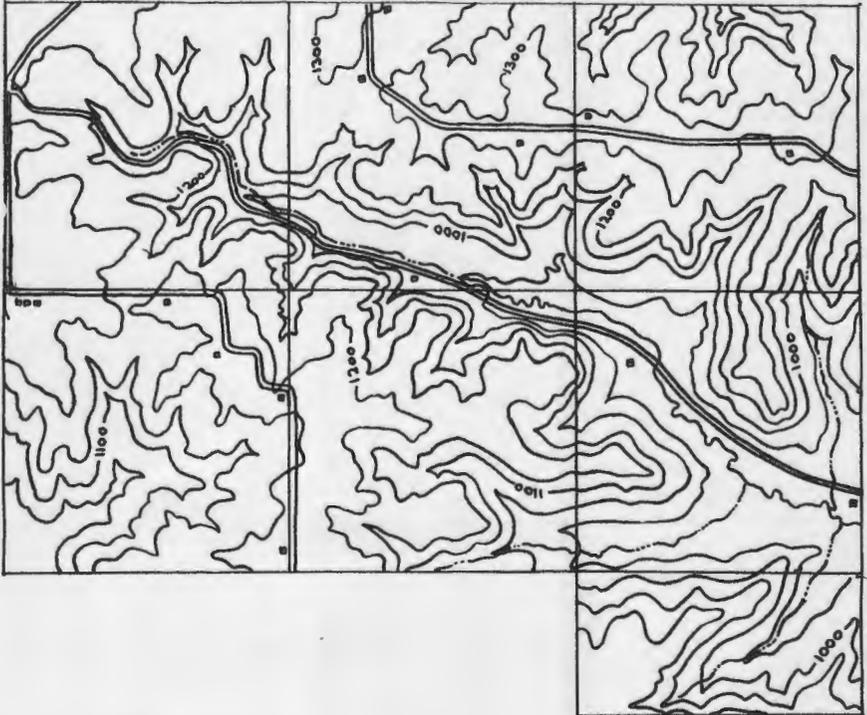


FIGURE 1. The topography of the study area.

are undisturbed, although some logging and quarrying are taking place. However, this is the case throughout southeastern Minnesota. Located only 12 miles from Winona, Minnesota, the region is easily accessible by car.

During field operations in the spring of 1968, it was found that it was much easier to locate nesting sites early in the year, while the trees were leafless. Consequently, in 1969, preliminary field work, consisting of an examination of the whole study area, usually with the aid of snowshoes, was begun in January and extended throughout March. All trees which contained stick nests large enough to have been built by Red-tailed Hawks, or trees which contained hollows large enough to accommodate Barred Owls or Great Horned Owls, were marked with Glo-brand blaze orange paint, sprayed on four sides of the trunk at breast height. The locations of these trees were then plotted on a field map. After the nesting season was underway, the area was again checked for active nests. All potential nesting sites were approached with the aid of climbers and safety belt. Besides locating nesting sites, all sight and sound data were also recorded, since these birds show activity in their territories even before the actual nesting season, while building new nests or repairing old ones, or defending their territory against intruders.

Following trails of the preceding summer, a live-trap program was begun on the study area during late winter, 1969. The objective of this phase of the field work was to mark and track as many of the resident large raptors as possible, thereby determining definite nesting territories. Four bal-chatri traps, described by Berger and Hamerstrom (1962), were used with several modifications (Figure 3). The nooses were attached to the traps by running the loose end around one of the strands of chicken-wire and crimping it to the stem of the noose with a $\frac{1}{4}$ inch piece of 1/16 inch carburetor tubing (Carl Johnson, personal communication). Using this

method, the attached nooses remained in an upright catch position much longer than they had previously. Several traps were modified by lacing the door on one side of the quanset-shaped trap, rather than on the bottom. This change facilitated placement and removal of lures.

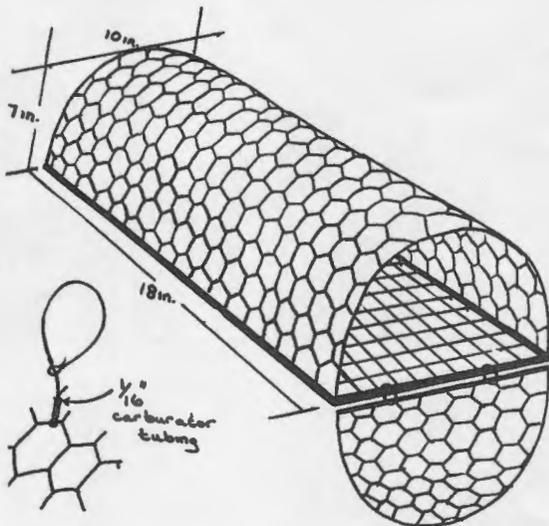


FIGURE 3. Bal-chatri live trap showing modifications.

Pigeons were the most easily secured bait, being live-trapped near the railroad yards in Winona using a large falling door live-trap baited with a handful of corn. These birds were able to withstand 24 hours of below zero Fahrenheit temperature in the bal-chatri traps and still be active lures, if provided with food and a small amount of scratching material. After the snows had melted, white laboratory rats, dyed brown, were used for bait. The traps then had to have an insert of one inch chicken wire as lining to keep the rats from pulling the nooses through the wire and biting them off.

When used as a lure for hawks, the traps were placed in conspicuous positions, usually not more than 200 yards from a vantage point likely to be used by a hawk, or, if a hawk was seen hunting near a road, the trap was dropped from the window of a

slowly moving car. Traps set for owls were usually set in the open near edge cover or in wooded coulees known to be frequented by owls. Some dried leaves were placed inside each trap, so the movement of the bait would cause rustling, helping to attract raptors in the dark. All trapped raptors were marked with Glo-grand spray paint (Keith, 1964) using the colors red, blue, and yellow. The first bird trapped was sprayed red over the entire right wing, the next was sprayed red over the entire left wing, and the third was sprayed red over the entire body, exclusive of the wings. Each of three birds was marked with a different color. Only a small number of raptors could be marked in this way, but the size of the study did not warrant using more inclusive methods.

Data on nesting sites were also recorded. The type of tree in which the nest was located was noted; the exact height of the nest above the ground was measured with the aid of an inclinometer; and a compass was used to determine the exposure of the slope at the base of the next tree. The quadrat sampling technique (Cox, 1967) was used to determine the structure and composition of forest tree communities around each nest tree. The area measured consisted of 476 square yards, 119 square yards in each quadrat around the nest tree. All trees with a diameter at breast height (d. b. h.) of 12 inches or more were included. Those with a d.b.h. of less than 12 inches were excluded since they were not high enough to provide a suitable crotch for nest building.

Data regarding food habits were also collected during field operations. Prey items were found in the nests or scattered about the ground beneath them, occasionally seen in a flying raptor's talons or identified from pellets with the aid of a skull key (Driver, 1950).

III. RESULTS AND DISCUSSION

Field work in 1968 indicated that one pair of Red-tailed Hawks and two pairs of Barred Owls had por-

tions of nesting territories within the two and one half square mile study area (Figure 4). Only the hawk nest was located, the owl density being estimated from sight and sound data.

In the spring of 1969, it was estimated that the expanded six and one-half square mile study area supported a population of four pairs of Red-tailed Hawks, three pairs of Barred Owls, and at least one Great Horned Owl. After intensive search, only three hawk nests were located (Figure 5). An additional pair of hawks utilized the northern portion of the area as part of their territory, but no nest was discovered (Figure 6). The 1968 pair was believed to have moved to a nest approximately 0.50 mile distant in 1969, since the territories for a pair of Red-tailed Hawks were almost the same both years. The distances between the three 1969 nests were 0.75, 1.27, and 1.07 miles, for an average distance of 1.03 miles. Hagar (1957) indicated that adjacent nests of Red-tailed Hawks in New York were separated by an average of 1.1 miles. Including the pair of hawks which did not nest within the boundaries of the study area, the total population was estimated to be one pair per 1.62 square miles. This figure indicates a more dense population than those reported by Orians (1955) and Hagar (1957) of one pair per 2.2 square miles. However, variations in nesting habitat may account for this difference, the river valley network of this region offering more extensive timber tracts.

One Barred Owl nest was located, but only after it had been destroyed. Therefore, hootings and sightings were the prime sources of information for estimating the size of the owl population. A total of 24 Barred Owl observations was made within the study area through 1968 and 1969. These are indicated on the map (Figure 7). The territory inhabited by a pair of Barred Owls in 1968 in the northernmost portion of the study area was pre-empted by a Great Horned Owl early in 1969. This observation is in accordance with that of Baumgartner

(1939), who indicated that no other species of large owls intrude into *Bubo's* territorial range. Centers of activity for all owls in the area were generally 0.75 to 1.00 mile apart. The total owl population was one pair per 1.62 square miles.

It had been hoped that territory size for the resident raptors could be determined by capturing, marking, and releasing these birds. However, prolonged sightings had to be utilized, since the live-trap program was not successful. In 38 trap-days and 40 trap-nights, only two Red-tailed Hawks were captured and marked. These were both one year old birds, not yet having a rufous tail, and probably non-breeders because they were captured April 3 and 12, at which time the nesting season was well underway, and neither was seen in the area again after release.

On six occasions, raptors were entangled in the nooses of the traps, but managed to disengage themselves. Sign in the snow and/or mud indicated that the traps were sometimes carried or dragged as far as sixty yards from the original site or lifted over obstacles as high as five feet. During two of these incidents three pigeons were lost to raptors. Two were last to a mature Red-tailed Hawk. The latter was observed eating them after it had ripped the side door of the trap from its hinges and had broken several 40 pound-test nooses. Thereafter the doors were wired securely. Another pigeon managed to get its head stuck through the chicken-wire body of the trap and was killed by a raptor, probably an owl as the killing took place at night.

All sightings of raptors are marked (Figures 6 and 7) and give a rough outline of territory size. The hawks from nests 1 and 2 were observed on several occasions as far as 0.75 mile from their respective nests and were kept under observation until they returned to their nesting sites. The territory size for these two pair of hawks was estimated to be approximately 0.80 to 1.00 square mile. The other two pair of hawks in the area were

not watched on as many occasions, but sightings indicate that they also established territories of approximately the same size.

Since owls are not as readily seen as hawks, the size of their territories was more difficult to estimate. Nevertheless, it was noted that the density of large owls in the study area was the same as the density of Red-tailed Hawks. Moreover, the centers of activity for both types of raptors were almost the same distance from others of the same species. Hootings of individuals heard over long periods and sightings indicated that the ranges of Barred and Great Horned Owls were nearly the same expanse as those of Red-tailed Hawks. Observations in 1968 indicated a pair of Barred Owls used coulee 7 and the adjacent lowlands, but there were not enough data gathered to be able to define territories (Figure 4). In 1969, a pair of Barred Owls used this same territory but more data were noted from coulee 6 than 7 (Figure 7). It indicated that a pair of owls used both coulees, the opposite slope, and the valley floor between, giving them a minimum nesting territory of approximately 0.60 to 0.70 mile. A Great Horned Owl in the northern-most portion of the area was seen and/or heard in coulees 2, 9, 10. A pigeon killed one night just south of Coulee 9 must have been a victim of this owl. This point of attack was included within the owl's territory, giving it a minimum range of 0.60 mile.

Habitat requirements for nesting Red-tailed Hawks within the study area did not vary to any considerable degree (Table 1). The tree preferred for nesting sites was oak, probably because this species was common and provided high inaccessible crotches in which nests could be built. Outside the boundaries of the study area, however, one nest was discovered high in a basswood tree, in a forest which was dominated by the same species. Although located approximately 25 miles west of the study area, this locale did not differ appreciably from portions of the latter in either topography or

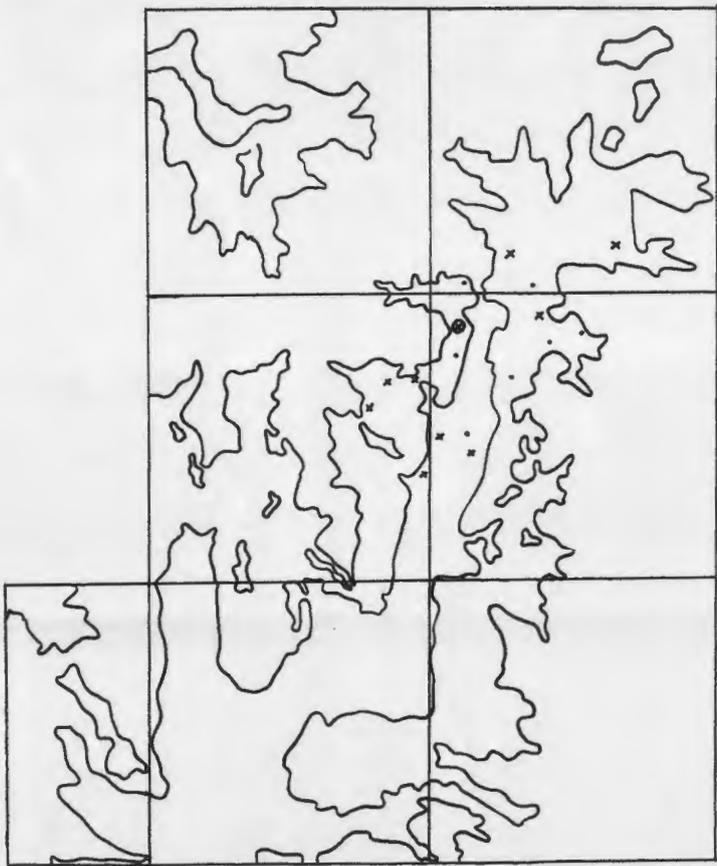


FIGURE 4. Raptor territories and nests located in 1968.
X Barred Owl sighting
● Red-tailed Hawk sighting
⊗ Red-tailed Hawk nest

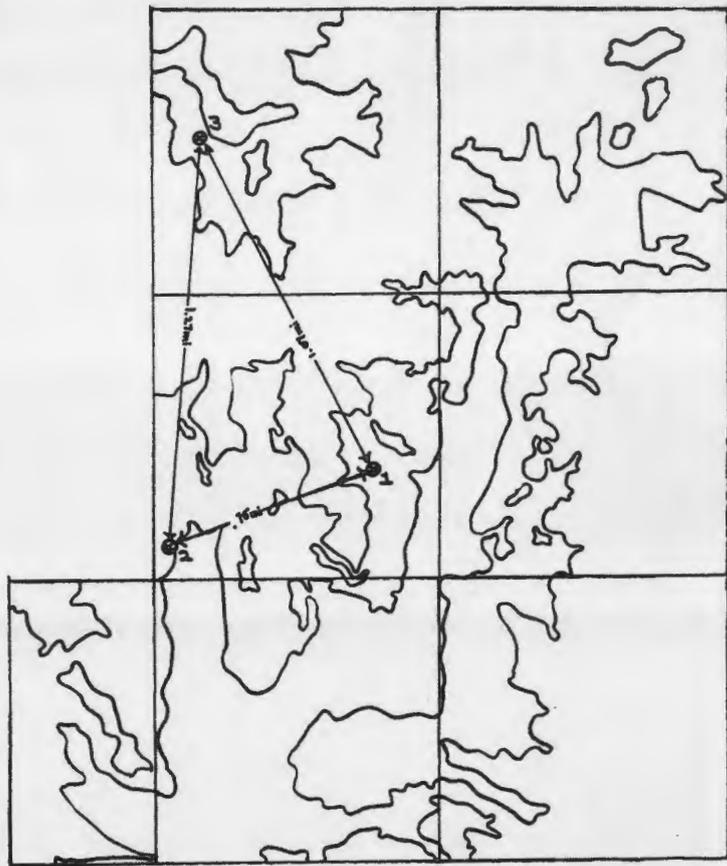


FIGURE 5. Red-tailed Hawk nests located in 1969.

vegetative composition. Hagar (1957) indicated that Red-tailed Hawks in New York State tend to nest in the dominant trees within a particular study area. However, Orians and Kuhlman (1956) found that in Wisconsin Red-tailed Hawks preferred elm nesting sites even though this species was out-numbered by both sugar maples and white oaks.

The height of eight Red-tailed Hawk nests averaged 58.5 feet with a range of 41 feet to 86 feet. This figure agrees closely with that published by Orians and Kuhlman (1956) of 57.0 feet. Bent (1939) found that the nests of these species located in hardwood regions of southeastern Massachusetts "... were in oaks, varying in elevation from 35 to 48 feet."

TABLE 1. Habitat requirements for nesting Red-tailed Hawks, Barred Owls, and Great Horned Owls.

Species of nest tree	Height of nest (ft.)	Exposure of nest	Density at nest site (trees per square acre) +	D.B.H. at nest (in.)
Black oak*	58	70° E of N	77	23.6
Northern* red oak	56	90° E of N	68	28.3
Basswood*	86	0° (N)	106	16.2
red oak	64	60° E of N	58	20.7
Northern* red oak	52	90° E of N	19	26.1
Northern* red oak	54	80° E of N	106	19.7
Northern** red oak	41	90° W of N	68	22.3
Northern* red oak	57	30° W of N	77	24.6
			Aver. = 73 + 29	Aver. = 22.7 + 3.6
White oak*	14	90° W of N	0	32.8

*Red-tailed Hawk nest

**Great Horned Owl nest

+Barred Owl nest

+Density figures for portions of the study area other than the nest sites (trees per square acre):

257

39

68

174

174

160

In all cases within the study area, the preferred slope exposure upon which the hawks built nests was north to east with a tendency to build on more east-facing slopes. One exception to this inclination was a nest found near Rollingstone, Minnesota, about 30 miles north of the study area. This nest containing two young was located on a northwest-facing slope. No difference of habitat was noted from other portions of the study area with the

same exposure. Another nest located in much more open country near Troy, Minnesota, was also found to have a western exposure. However, stands of timber suitable for nesting sites are limited in this part of the state, as evinced by the use of this particular nest over a number of years (personal communication with area farmers).

At first examination, the density figures reflect a large variation in preferred choice of forest denseness for nesting sites by Red-tailed Hawks. However, these values are found to be considerably lower than those from other portions of the area (Table 1). Six tracts, which had the same exposure and the same type of arboreal community as that found near the nest sites, were chosen for comparative purposes. Four had density values greater than 145 trees per square acre and two reflected values which were within the range of those found at nest sites. This, coupled with the observation that all nest sites were relatively open areas, even the two located within dense woods, indicated that Red-tailed Hawks do not seek extremely dense wooded areas for nesting sites. In fact, many nests of this species are built in full view of busy highways in southern Minnesota. Orians and Kuhlman (1956) also concluded that Red-tailed Hawks preferred open country in Wisconsin having found 80 or 90 nests in open situations.

Bent (1939) described the Barred Owl as "... a forest-loving bird, living mainly in the deep, dark woods, heavily wooded swamps..." Throughout the state, this is probably true, this owl usually being associated with swampy regions. However, the remains of the nest of this species found in the study area reflected just the opposite. It was located in a very open situation on a western slope, with no trees withing the quadrate surrounding the nest as tall as the low nest site. The nest itself was located in a six inch depression of a hollow tree stump with a large opening (six feet by one foot) only fourteen feet above

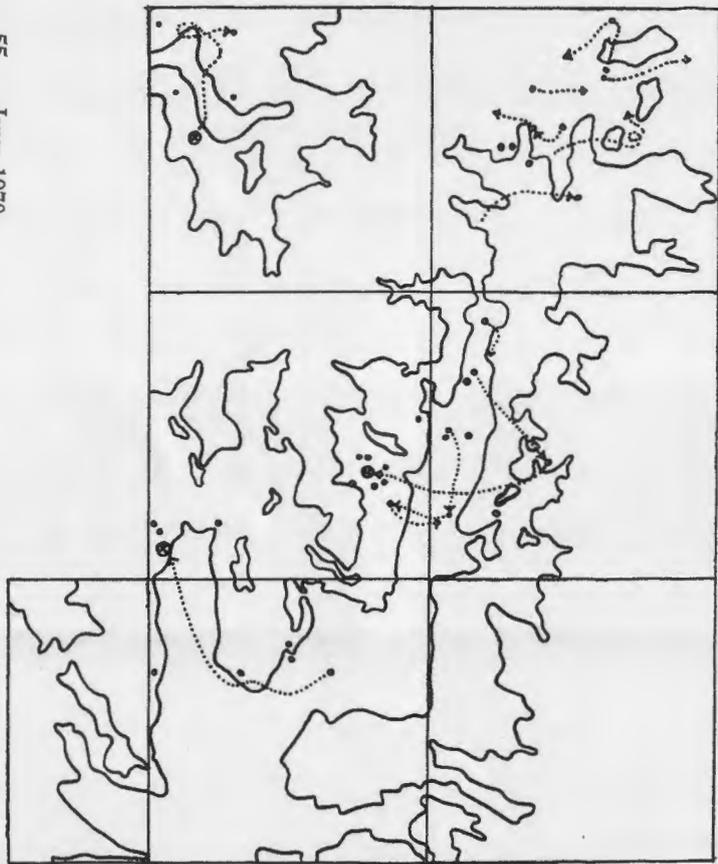


FIGURE 6. Red-tailed Hawk territories, 1969.
 ● Roosting site
 ● Line of flight
 ⊗ Nest

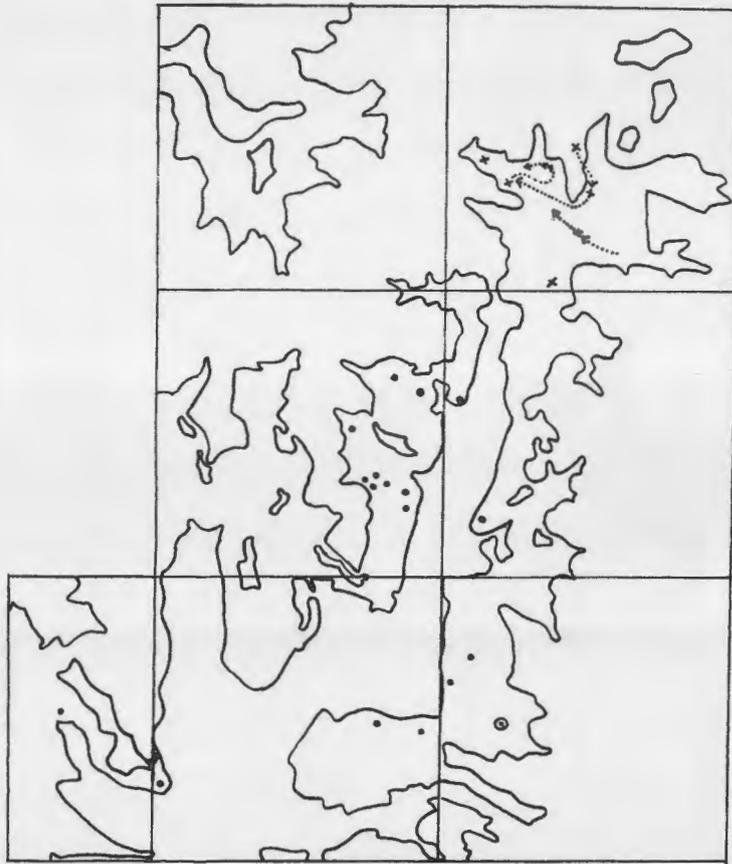


FIGURE 7 Owl territories, 1969
 ● Barred Owl hooting and/or sightings
 X Great Horned Owl hooting and/or sightings
 ● Line of flight
 ⊗ Nest

the ground. No nesting material was found within the cavity, the egg(s) having been deposited on rotting wood chips. However, numerous breast feathers from the owl were scattered within the hole.

The two Great Horned Owl nests located in 1969 were varied in their sites. One pair used the 1968-Red-tailed Hawk nest near Troy. The other was situated in a small cavern, two feet deep, in the eastern face of Sugar Loaf Rock, within the city limits of Winona.

Seven active nests of Red-tailed Hawks were examined over the two year period (Table 2). Only three of these were checked when they contained eggs, two of which had three eggs (Figure 8) while one nest had one egg, for an average of 2.33 per nest.

TABLE 2. Productivity data for Red-tailed Hawks and Great Horned Owls.

Study area Nest site	No. of eggs laid	No. of eggs hatched	No. of young fledged
1968 (1 nest)	unknown	2	2
1969			
nest 1	1	1	1
nest 2	3	0	0
nest 3	unknown	1	unknown
Troy nest			
1968	3	3	3
1969*	unknown	1	2
Rollingstone nest	unknown	2	2
Sugar Loaf* nest	2	2	2
Peterson nest	unknown	2	unknown
*Great Horned Owl nests			

One nesting attempt failed completely, probably immediately after the hatch. The nest was examined on May 7, 1969, about two weeks after the earliest hatch should have taken place and no egg shells were found in or near the nest, which would have been the case if a predator had destroyed the eggs or if the nest had been deserted before the hatch. It was believed that a predator, either a raccoon or Common Crow killed the young, as evinced by the lack of sign left in the nest. On May 18, 1969, a similar situation arose of a nestling Red-shouldered Hawk which was found dead near the base of its nest tree in the Whitewater Management Area with a small puncture wound in the base of its skull. The fresh kill appeared to have been the work of crows that same morning, since the nest had been checked the

previous day. If the nestling had not been discovered, it probably would have been carried away or eaten by a forager.

The other nest with three eggs had a successful hatch but only two of the young survived until time to leave the nest. The cause of the death of the other nestling could not be determined with certitude. Since it happened during the first ten days after hatching, and the other nestlings survived, the death could have been due to starvation, bad weather, or overcrowding by the nest mates. However, predation is another possibility.

Of the five nests periodically rechecked until the end of the nesting season, only four were considered successful. Eleven young hatched and seven survived to the age when they could leave the nest for an average of 1.4 young fledged per nest. Orians and Kuhlman (1956) found that the average number fledged per nest in Wisconsin for three successive years was about 1.4 young, with a variation from 1.1 to 1.8 young fledged per nest.

Since the Barred Owl nest had already been destroyed at the time of discovery, no data were available regarding clutch size. The height of the nest and its opening made it easy prey for raccoons. Apparently the eggs had been broken and eaten, since only portions of shells were found in the nest. No juvenile Barred Owls were ever seen within the study area, but the amount and variation of hooting in the late summer indicated that at least a few must have been produced and had survived.

No nest was located for the Great Horned Owl in the study area, but the nest of a pair found in an old-Red-tailed Hawk nest near Troy, Minnesota, produced one young in 1969. No data were obtained for clutch size from this nest even though the owlet was only a few hours old when discovered. The Sugar Loaf nest contained two eggs in late February, and it was believed that both young were successfully raised.

Several sightings were made of Red-tailed Hawks performing mating procedures. Dr. William Green of the U. S. Fish and Wildlife Service (personal communication) reported seeing two Red-tailed Hawks in Winona County engaged in the mating ritual on March 2. This consisted of the hawks' circling and diving around one another, culminating in locking of beaks and descending to the ground. Three other observations were made in nine days from March 19 to March 28 in Winona County. Brother Theodore observed a pair of the same species performing the mating ritual on March 19; Brother Charles Severin, F.S.C., saw copulation between two Red-tails on the St. Mary's College campus on or about March 23; Marius Morse and the writer saw a pair of these hawks performing mating preliminaries over the study area.

Bent (1937) determined the incubation period for Red-tailed Hawks to be 28 days. Using this length of time, the peak laying time for these hawks in this area was determined as the last week in March or the first week in April. Hatch dates for three nests were set at April 18 to April 21, April 25 to April 26, and May 1 to May 3. The nestlings which hatched in May left the nest on June 10, having been on the nest five weeks and three days. The nestling which hatched on April 25 or April 26 left the nest on June 6, having been in the nest five weeks and six days.

A newly hatched Great Horned Owl was found in the Troy nest on March 21, 1969, the body feathers of which had not yet dried out after hatching. The incubation period for this species being 28 days (Bent, 1938), the laying date was determined to have been



FIGURE 8. Clutch of three Red-tailed hawk eggs in nest.

February 21. The young owl was almost completely feathered out by April 30, but still in the nest. When the nest was checked on May 7, it was empty, but the young bird was seen in the nesting woodlot. The period of time the bird spent as a nestling was therefore set at approximately six weeks, almost the same period as that of the Red-tailed Hawks.

The owlet left the nest at approximately the same time that the young hawks were hatching. Perhaps in areas where these two species nest in close proximity, which includes much of southern Minnesota other than the river valleys in the southeastern portion, the food supply would prove to be too scarce for both species to nest simultaneously.

No data were obtained for Barred Owl nesting dates, but their increased activity indicated their nesting time coincided closely with that of Red-tailed Hawks.

A total of 45 food items was collected during the study (Table 3). Eighteen were taken from a Great Horned Owl's nest or identified from pellets; seventeen were recovered from Barred Owl pellets; ten were found under or in Red-tailed Hawks' nests or were seen being carried by these birds. The latter incidents occurred twice; once the victim was an unidentified snake and another time was an unidentified rodent. Both these items were included in the food list of this hawk.

Of the total number of food items, it was noted that 77% were rodents, most of which are considered animals harmful to man, with the possible exception of the fox squirrels. The Ring-necked Pheasant listed under prey for Red-tailed Hawks was seen being eaten by the latter in mid-January, 1969. Still warm when recovered, it obviously had been killed by the hawk. However, deep snow cover and cold weather conditions prevalent in the area at this time probably made this bird more vulnerable than normal to predation. Even so, a sizeable population of pheasants for southeastern Minnesota river valleys was noted dur-

ing the spring months. The Minnesota Department of Conservation reported that this portion of the state supported

TABLE 3. Prey items of the raptors studied.

BARRED OWL	
11	meadow voles
1	white-footed mouse
1	Common Grackle
1	Blue Jay
1	Ruffed Grouse
1	rodent (unidentified)
1	snake (unidentified)
Great Horned Owl:	
5	Norway rats
3	meadow voles
1	thirteen lined ground squirrel
1	eastern chipmunk
3	Yellow-shafted Flickers
4	rodents (unidentified)
1	bird (unidentified)
Red-tailed Hawk:	
2	fox squirrels
1	eastern chipmunk
1	bull snake
1	norway rat
2	meadow voles
1	Ring-necked Pheasant
1	snake (unidentified)
1	rodent (unidentified)

a large population of these birds. The other game bird found to be more abundant than pheasants in the area was the Ruffed Grouse which appeared on the raptors' food list only once. Plucked feathers and a few bones were found under a roosting spot used by a Barred Owl. The breeding population of the grouse in April was estimated to have been about one per 25 acres. Therefore, it was concluded that neither grouse nor pheasants formed a major portion of any raptor's diet, although they were preyed upon occasionally.

In four of six trips to the Great Horned Owl's nest near Troy, Minnesota, Norway rats were the exclusive food items found in the nest, with one exception when a meadow vole was noted along with two rats. Judging from these prey remains, it appeared that the owls hunted extensively near the farmers' barns. Three Yellow-shafted Flickers were found in the owl nest at one time. Normally these birds could escape the larger, slower raptor. These birds were found in the nest the day following a heavy density of migrating flickers. The owl probably had taken advantage of their prevalence as well as an inappropriate roosting spot chosen by the woodpeckers.

Considered as a group, it appears that these large raptors are a benefit

to area farmers. No poultry remains were found near any of the nesting sites and none was reported killed by raptors, even though some farmers did observe hawks picking dead chickens out of manure spread on fields.

In most cases, Red-tailed Hawks were observed not to be extremely aggressive in defense of their territories, often tolerating other raptors of the same and of different species quite close to their nests. A number of times during the two nesting seasons, more than one pair of Red-tailed Hawks was observed hunting within 1/2 mile of one another, and usually these sightings were made not more than 1/4 mile from a known nest. Apparently a definite buffer zone had been established between adjoining territories of these hawks in which either pair could hunt. The map (Figure 6) also indicated that a large portion of the area between nests was unused, which suggested a certain amount of buffering between territories. Occasionally, however, evidence was found that indicated some territory defense had taken place. On the morning of April 20, 1969, numerous primary wing feathers from a Red-tailed Hawk were found scattered about the ground approximately 200 yards from nest 1 on the study area. The shafts were partly broken which indicated that they had been removed violently. No sign in the area indicated any mammalian interaction. Later in the day, the male hawk from this nest was observed to have many primary feathers missing. The incident, therefore, was believed to have been precipitated by another raptor's intrusion into a defended area close to this nest. Later that day a third Red-tailed Hawk was seen being warned out of the same area by the nesting pair. On March 22, 1969, an adult Bald Eagle was seen being attacked by an adult Red-tailed Hawk. The smaller hawk was decidedly the aggressor. It actually taloned the back of the eagle, causing it to leave the area. The nesting season was just then getting underway, and it was believed that this was hawk territory defense.

The earliest aggressive pre-nesting behavior was observed on February 24, 1969. The deep snow cover during January and February of this year probably caused many of the area hawks and owls temporarily to vacate their usual home ranges and seek more suitable hunting grounds, as only one observation of any raptor was made in eleven field days during a period extending from January 23 to February 24. This sighting was of a Red-tailed Hawk which appeared to be wandering. Reports from area farmers, who normally see and/or hear hawks and owls, also indicated an unusual lack of raptors. Future observations with less severe winters may produce earlier dates for the birds' selection of nesting sites.

While hawk eggs or young were in a nest, it didn't seem to be dangerous to climb to that nest. In sixteen separate ascents to seven different nests, the closest approach an adult ever made was a distance of about three feet. This occurred only once. At another nest which was visited one time only, the adults made numerous stoops, but never coming closer than fifteen feet. The usual reaction to a climber was defiant screaming and circling above the nest site.

The nestlings assumed definite defensive positions in the presence of the climber, but only after they had their eyes open. Prior to this time, usually about the first two or three days of their lives, they just lay in the bottom of the nest, completely defenseless. Later two typical reactions were encountered. In the more aggressive position, the young bird would either lean on its tail or stand on its legs if possible, facing the intruder from the far edge of the nest, with beak opened wide and feathers ruffled. The wings were usually held outstretched. Occasionally a cry was uttered similar to that of the adult, but more high pitched. More often than not the nestling was silent. The other more passive position was encountered in 1968, but not recognized as such until 1969. The single 1969

nestling in nest 1 in the study area never displayed the aggressive behavior described above. Rather, it always lay flat on its white ventral side, extended its wings partway, and partially tucked its head under them. This position provided a certain amount of camouflage, as the brown dorsal side of the nestling blended quite well with the coloration of the nest.

The nestlings in the 1968 nest near Troy seemed to display a social position in their defensive attitudes. One nestling always exhibited the aggressive position, while the other lay at its feet, in the more passive posture. The more aggressive bird was the first to leave the nest; after this the second bird showed a more threatening position. Both nestlings in the Rollingstone nest displayed the aggressive posture when approached by the climber, but one was noticeably more bold than the other. Apparently there is a certain amount of hierarchial social ranking among nest mates, similar to a peck order among a flock of chickens. This ranking is probably determined by hatch date, the first to hatch being the largest and strongest.

When handled, adult Red-tailed Hawks often displayed a position similar to the aggressive nestling posture, but much more dangerous to the handler. By leaning farther back on the tail or by actually lying on its back, the hawk's formidable talons were exposed, ready to grapple with any opponent. Once the talons were secured, however, the bird was fairly docile.

The Great Horned Owls using the hawk nest near Troy in 1969 exhibited erratic behavior when the nest was approached. Although no attacks were ever made upon the climber at this nest, literature is replete with reports of savage reprisals by these birds. (Bent, 1938). An attack upon a climber in South Dakota by one of this species resulted in the climber temporarily losing consciousness while in the tree (Rory Vose, personal communication). At the approach to the Troy nest the first few times, the male flushed from

a nearby roosting spot and sought the security of the denser cover in the woodlot. During the last visits to the nest, the male was most often not detected. The female did not flush during the first visit, even though an approach was made to within approximately 50 feet of the nest tree. The next visit she left the nest, but only after the climbing of the tree had actually begun. She was not seen in the area again during this visit which lasted about 12 minutes. During the next two examinations both owls became very agitated, repeatedly flying and roosting as close as 30 feet to the climber, all the while clicking their beaks and softly hooting. Neither adult remained in the area during the next inspection, but the following time the female stayed, became very excited and roosted as close as 30 feet to the nest while it was being examined.

The young owl in the nest became increasingly defensive. The first two weeks of its life, approximately the amount of time required for it to open its eyes, the owlet was very passive, showing no resistance to being handled. At 31 days of age, it finally displayed a defensive posture after much handling during the banding procedure. Facing the climber from the far edge of the nest, the owlet spread its wings slightly and ruffled its feathers, which resulted in its looking much larger than it actually was. These actions were accompanied by a clicking sound similar to that emitted by the parents, and a soft squeak, which was interpreted as a cry for help to the parents, neither of whom, incidentally, were seen or heard in the area.

Only one incident was observed in which these owl's domain was invaded by another raptor, and this, unfortunately, took place while the climber was near the nest. Either his presence or the warning hoots of the nearby female owl cautioned a wandering Rough-legged Hawk to leave the area. The hawk had approached to within a distance of approximately fifteen feet from the nest. The agitation of the owl could not be directly attribut-



FIGURE 9. Paul LeDuc holding young Red-tailed Hawk from nest near Troy, Minnesota.

ed to the presence of the hawk, since the former was already incensed at the climber.

IV. CONCLUSION

Even though this study was conducted on a relatively small scale, it is felt to have been productive. Some inferences drawn from this study of the species considered were:

1. Hawks and owls require a certain minimal territory from which other birds of the same species are vigorously excluded. However, individual pairs of hawks and owls tend to share the same or greatly overlapping home ranges. Evidently their habits do not present sufficient interference with one another for strife to take place, especially since the hawk hunts for food in daylight and the owl is nocturnal.
2. Hawks show a definite tendency to nest in a specific of habitat: large, mature oaks in fairly open stands on north to eastern slopes. Owls do not show any particular preference for nesting sites—they seem to utilize whatever site is available.
3. These raptors' food habits are definitely beneficial to area farmers, the bulk of their diet being harmful rodents.
4. Occasional human interference did not result in any nesting failures. The greatest natural enemies of raptors in this area apparently were Common Crows and raccoons.

An extra benefit of this study was its demonstration of wholesome cooperation and communication between college students and area farmers in projects which are mutually beneficial.

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THE WINTER SEASON

December 1, 1969 - February 28, 1970

As the high totals on the Christmas counts also showed, the winter season of 1969-70 produced many records of species attempting (and some succeeding) to over-winter in Minnesota, north of their usual winter range. The White-crowned Sparrow records were the first for this season in the state and the high number of White-throated Sparrow reports was also unusual. There seems to be something in the pattern of the fall weather that makes birds that are normally migrants linger on into the winter. With the help of feeding stations some of them are successful in wintering in Minnesota. The Field Sparrow in Winona, and the Swamp Sparrow and Brown Thrasher in Duluth were examples this year.

Robins, contrary to what many people think, normally winter here, either as flocks or individual stragglers. Usually the largest flocks are along the North Shore of Lake Superior when the mountain ash crop is heavy. This year although the mountain ash berries were in good supply in the north, the big flocks were along the river bottoms in the southeastern part of the state. They were joined by groups of Eastern Bluebirds which have only been reported in flocks in the winter a few times before. Rob-

ins and bluebirds are dependent upon wild food for their survival but the Varied Thrushes that show up here in the winter seem to stay near feeding stations. In the past decade this species has become a regular, though rare, winter visitant.

The most exciting bird to be spotted in Minnesota in quite a while was the Dipper Mary Muehlhausen found on the Temperance River. This was not only a first record for the state but also the first time it had been reported east of the Black Hills. Although Clark's Nutcrackers were also seen in the fall they had not previously been reported for decades.

It would be interesting to know if the White-fronted Goose and Ross' Goose at Rochester were the same individuals that wintered there last year. Also the Barrow's Goldeneye at Black Dog, Dakota County may be the same bird as last year. This species has been reported in the St. Paul area for the last 4 or 5 winters. I wish some enterprising photographer would try to get close to it since there is neither a specimen or photograph of this species for the state.

The bird most often reported this winter was the Common Redpoll. Last winter was also an invasion year for this species. This year it was joined

in invasion numbers by Pine Siskins and Red Crossbills. Pine Grosbeaks were also present in good numbers in the northern half of the state.

There were a couple of visitants from the Arctic that were quite scarce this winter. Snowy Owls were only seen three times—the lowest number in many years. The number of Glaucous Gulls on Lake Superior was the lowest for the ten years I have been observing them. This may possibly be related to the vanishing winter fisheries on the tip of the western arm of Lake Superior.

Style notes: The location given for most records is only the county name. If the number of birds seen is not noted after the date then one can assume only 1-2 individuals were reported. Additional information is sometimes given in the county summaries if it is considered interesting or significant as to number, place or date. The numbers given are usually the highest count reported. For many species the state was divided into **North** and **South** halves with the dividing line the northern boundary of Stearns County. All species reported are listed, even permanent residents.

Red-necked Grebe: 12-27 (2) Lake Superior, St. Louis Co. JCG.

Horned Grebe: 12-26, 1-10 Lake Superior, St. Louis Co. JCG.

Pied-billed Grebe: 11-29 (RG, BL), 12-26 (MMC) Lake Superior, St. Louis Co.; 12-1 Hennepin FN; 12-13 Winona FZL; 1-26 Olmsted KRE; 1-24 (RG), 2-15 (EMB) Goodhue.

Whistling Swan: 12-3 (400, DGM), 12-7 (200, BTV), 12-29 - 1-2 (DGM) Wabasha; 12-13 (4) Winona FZL.

Canada Goose: All winter (10-20,000) Rochester, Olmsted Co.; 12-2 Hennepin CLH; 12-7 (150) Wabasha BTV; 12-13 Winona FZL; 12-20 (4) Rice OAR; 2-17 - 18 (21) Worthington Nobles Co. (HSH, HCK).

WHITE-FRONTED GOOSE: 12-7 Wabasha, BTV, 1-7 (BTV), 1-11 (VL), 1-27, 31 (CW) Rochester, Olmsted Co.

Snow Goose: 1-24 Virginia, St. Louis Co. (PE, KRE); 12-20 (2, BTV), 1-1 (RG), 1-26 (6, KRE), 2-5 (3, CW), 2-14 (4, KRE), 2-17 (4, ETS) Rochester, Olmsted Co.

ROSS' GOOSE: 12-20 (BVT), 1-11 (VL) Rochester, Olmsted Co.

Mallard: Wintered **South** in Anoka Olmsted, Ramsey, Stearns, Carver, Hennepin, Winona, Chisago, Wright, Washington, Dakota, Goodhue (500, KRE), Rice, Wabasha; **North** in Beltrami (4, RCR), Duluth (12, JCG), Cook (100, JCG), Morrison.

Black Duck: Wintered **South** in Anoka, Olmsted, Ramsey, Scott, Carver, Hennepin, Washington, Dakota, Goodhue (50, KRE), Wabasha, Stearns (3, KRE), **North** in Cook (6, JCG), St. Louis (Virginia, KRE).

Pintail: 12-13 Dakota EMB; 12-20, 1-1 Winona FZL; all winter Goodhue KRE, RG; 2-19 Carver KH.

Green-winged Teal. 12-28 (2) Winona BTV; 1-24 (2) Virginia, St. Louis Co. KRE, PE.

Blue-winged Teal: 1-2 (crippled) Hennepin RG.

American Widgeon: 12-13 Hennepin CLH; 12-20 Winona FZL.

Shoveler: 12-11 Hennepin CLH.

Wood Duck: 12-14 Olmsted KRE; 12-18 Lyon HCK; 12-27 (KH) - 2-8 (KRE) Carver; 12-27 (4, BL) - 2-28 (4, JJ) Ramsey; all winter Goodhue EMB, KRE, RG; 1-24 (2) Virginia, St. Louis Co. KRE, PE; 2-24 Anoka MHM.

Redhead: 12-13 Goodhue KRE.

Ring-necked Duck: 12-20, 1-3 Winona FZL; 1-11 Olmsted VL; 1-24 Virginia, St. Louis Co. KRE, PE; 2-28 (2) Ramsey JJ.

Canvasback: 12-3 (20) Wabasha DGM; 12-30 (2, VL) - 1-2 (RG) Dakota.

Lesser Scaup: Last **South** 12-13 Goodhue KRE; 12-14 (2) Olmsted KRE. Last **North** 12-11 Lake JCG; 12-20 (10) Morrison LSR. Wintered 12-13 - 1-3 Winona FZL; 1-1 Olmsted RG; 1-24 Virginia, St. Louis Co. KRE, PE; 2-24 Cass MHM; 2-28 Ramsey JJ.

Common Goldeneye: Wintered **South** in Dakota (100-400), Ramsey, Wabasha (75), Hennepin (100), Sherburne (5), Winona (50), Chisago (10), Stearns (30), Goodhue (20), Olmsted (10); **North** in Beltrami, Pine, Lake, Cook (50), St. Louis (10).

BARROW'S GOLDENEYE: 12-13— all winter, Dakota EMB.

Bufflehead: 12-11 Hennepin VL; 12-20, 1-3 Winona FZL; 2-7 Dakota DAB; 12-11 (JCG) - 1-3 (RL) Lake Superior, St. Louis Co.

Oldsquaw: All winter, Lake Superior. Greatest number 12-26 (75) Lake MMC; 2-7-18 (25) Cook JCG.

White-winged Scoter: 12-20 Winona FZL; 1-3 (34), 1-5 (2) Lake Superior, Lake Co. MMC.

Ruddy Duck: 12-14 Olmsted KRE; 12-27 Carver KH.

Hooded Merganser: 12-5 Hennepin CLH; 12-14 (KRE) - 1-24 (RG Olmsted; all winter, Dakota EMB.

Common Merganser: Last migrant flocks, 12-3 (50) Wabasha DGM; 12-13 (20) Winona FZL. All winter **South** in Dakota (10), Wabasha (6), Sherburne; **North** in St. Louis (5), Lake, Cook, Pine.

Red-breasted Merganser: All Dec., 1-13 (3) Lake Superior, St. Louis Co. JCG; 2-11 Wabasha BTV; 2-17 Olmsted ETS.

Goshawk: 12-20 Stearns KRE; Feb., Anoka WHL; all winter, Rice GNR.

Sharp-shinned Hawk: 12-20 Rice OAR; 1-1 Duluth RL; 2-8 Wabasha DGM; 2-14 Sherburne NMH; 2-18 Wabasha BTV.

Cooper's Hawk: 1-5 Carver MHM; 1-13 Anoka WHL; 2-15 Winona BTV.

Red-tailed Hawk: Wintered **South** in Goodhue, Hennepin, Wabasha, Olmsted, Wright, Dakota, Nicollet, Winona, Houston, Rice; **North** in Lake (1-25, KRE), Cook (1-31, ELC).

Red-shouldered Hawk: Wintered in Winona, Wabasha.

Rough-legged Hawk: Wintered **South**

in Olmsted, Dakota, Hennepin, Wabasha, Nobles, Winona, Ramsey, Rice, Blue Earth; **North** in Lake, Cook.

Golden Eagle: 1-2 (2) Agassiz Refuge Marshall Co. (staff).

Bald Eagle: Wintered **South** in Chisago, Dakota, Goodhue, Wabasha (12-5 K. Krumm reported 98 including 27 Imm.; BTV reported peak Dec. count of 131; fewer in Jan.), Winona, Lyon (12-25, HCK); **North** in Duluth (12-2, two, 12-18, 1-5, MMC), Lake 1-3, DAB; 1-31 T. Savaloja), Rice Lake Refuge, Aitkin Co. (2-27, two, CEP).

Marsh Hawk: Dec., Nobles HSH.

Peregrine Falcon: 12-23 Duluth MMC.

Pigeon Hawk: 12-6 Fillmore AFR; 1-3 Lake DAB, RG, BL.

Sparrow Hawk: Wintered **South** in Le Seuer, Chisago, Ramsey, Anoka, Hennepin, Wabasha, Olmsted, Fillmore, Wright, Dakota, Pope, Jackson, Winona, Scott, Rice, McLeod, Lyon, Stearns, (12-20), KRE).

Ruffed Grouse: Reported from Cook, Lake, St. Louis, Mille Lacs, Aitkin, Marshall, Chisago, Stearns, Goodhue, Wabasha, Fillmore, Winona, Morrison, Clearwater.

Sharp-tailed Grouse: Reported from Rice Lake Refuge, Aitkin So.; Agassiz Refuge, Marshall Co.

Ring-necked Pheasant: Reported from Lake (1-31), Castle Danger, T. Savaloja), St. Louis (Duluth), Morrison, Watonwan, Anoka, Chisago, Pope, Washington, Carver, Ramsey, Cottonwood, Rice, Lyon, Dakota, Hennepin, Wabasha, Olmsted, Fillmore, Stearns, Wright, Nobles, Winona, Freeborn.

Gray Partridge: Reported from Watonwan, Blue Earth, Rice, Dakota (28), Goodhue, Yellow Medicine, Redwood, Fillmore, Olmsted, Nobles, Wright.

American Coot: Wintered in Olmsted, Ramsey, Dakota, Winona (18).

Killdeer: 12-22 (BTV), 2-21 (RG) Winona.

Common Snipe: Wintered in Winona, Olmsted, Ramsey, Scott, Houston,

Hennepin (2-27, five, VL), Sherburne (2-15, two, KP).

Glaucous Gull: Wintered on Lake Superior in St. Louis (maximum count, 2), Lake (maximum count, 2).

Herring Gull: Last **South** on 12-27 (6) Ramsey BL; 1-6 Dakota EMB. Wintered on Lake Superior (maximum count, 500, 1-11, Lake, JCG).

Ring-billed Gull: Last **South** on 12-4 (300), 12-13 Hennepin CLH; 12-7 (130) Wabasha BTV.

Mourning Dove: Wintered **South** in Ramsey, Stearns, Goodhue, Olmsted, Rice, Blue Earth, Lyon, Hennepin, Chisago, Wabasha, Nobles, Watonwan, Winona, Cottonwood, Pope; **North** in Duluth (12-23, six, MMC; 1-9, three, JKB). Last migrant 12-10 Duluth JCG.

Screech Owl: Reported from Hennepin, Olmsted, Nobles, Rice, Ramsey.

Great Horned Owl: Reported from Ramsey, Stearns, St. Louis, Dakota, Lyon, Hennepin, Olmsted, Wright, Nobles, Winona, Rice, Watonwan, Blue Earth, Mille Lacs, Aitkin, Marshall, Clearwater.

Snowy Owl: 12-5 Duluth O. Finseth; mid-Dec. Duluth J. Avelar; 2-15 Clay (fide EGA).

Barred Owl: Reported from Crow Wing, Aitkin, Wabasha, Winona, Stearns, Hennepin, Houston, Goodhue, Fillmore.

Long-eared Owl: 12-11 Duluth D. Sheer.

Short-eared Owl: 12-15 (2) Lyon PE; 1-14, 2-6 Watonwan EDK; 2-20 Bagley, Clearwater Co. RCD.

Boreal Owl: 1-30-31 Tofte, Cook Co. Mrs. Hognlund and Superior National Forest staff.

Saw-whet Owl: 1-17 Fillmore AFR; 2-27 Bagley, Clearwater Co. RCD.

Belted Kingfisher: Reported in Dec. from Wabasha, Winona, Ramsey, Goodhue, Lyon. Last seen on 1-2 Dakota RG, EMB; 1-4 Ramsey JJ.

Yellow-shafted Flicker: Wintered **So.**

in Lyon, Dakota, Goodhue, Winona, Olmsted, Carver, Watonwan, Blue Earth, Hennepin, Pope, Washington, Cottonwood, Rice, Nobles, Fillmore, Wabasha; **North** in Duluth.

Pileated Woodpecker: Reported from Cook, Lake, St. Louis, Crow Wing, Mille Lacs, Aitkin, Clearwater, Winona, Carver, Blue Earth, Stearns, Ramsey, Hennepin, Chisago, Wright, Washington, Rice, Dakota, Wabasha, Goodhue, Fillmore.

Red-bellied Woodpecker: Reported from Winona, Hennepin, Carver, Goodhue, Ramsey, Chisago, Washington, Lyon, Wright, Fillmore, Wabasha, Olmsted, Aitkin (all winter at feeder in Aitkin, fide JB).

Red-headed Woodpecker: Reported from Winona, Olmsted, Stearns, Goodhue, Houston, Chisago, Rice, Fillmore, Wabasha, Mille Lacs (1-6-12, Isle, MI).

Yellow-bellied Sapsucker: 12-1-10 Hennepin VL; 12-20 Stearns KRE, PE; 1-1 Winona BTV, RG; 1-3 Hennepin Mrs. EFH.

Hairy Woodpecker: Reported from 28 counties.

Downy Woodpecker: Reported from 30 counties.

Black-backed Three-toed Woodpecker: 1-24 Gnesen Twp., St. Louis Co. KRE, PE; 2-21 Cook EMB.

Horned Lark: Wintered in Aitkin, Winona, Pope, Rice, Nobles, Wright, Watonwan, Blue Earth, Lyon, Stearns, Chisago, Dakota, Olmsted, Fillmore, Sherburne, Wabasha. Migration in the **South** was noticeable 1-31 - 2-7. Migration **North** 1-31 Clearwater RCD; 2-9 Hubbard ETS; 2-15 Morrison LSR; 2-22 Marshall (Agassiz staff).

Gray Jay: Reported from Cook, Lake, St. Louis, Clearwater (Itasca State Park), Beltrami (Turtle River, Blackduck), Aitkin (1-25, three, Jacobson, RG).

Blue Jay: Reported from 30 counties.

Black-billed Magpie: Daily, Agassiz Refuge, Marshall Co. (staff); 1-13 Rice

Lake Refuge, Aitkin Co. CEP; 2-20 (3) Clearbrook, Clearwater Co. RCD.

Common Raven: Wintered in Cook, Lake, St. Louis (Jan.-Feb. 2-300 at dump in Gnesen Twp., JCG), Aitkin (Rice Lake Refuge, CEP; McGregor, RG), Hubbard, Beltrami, Marshall, Clearwater (more common than usual, RCD).

Common Crow: Wintered in Pine, Carlton, Morrison, Winona, Hennepin, Carver, Watonwan, Blue Earth, Stearns, Washington, Ramsey, Wright, Lyon, Pope, Dakota, Rice, Cottonwood, Mower, Freeborn, Nobles Chisago, Fillmore, Olmsted, Wabasha, Aitkin, Clearwater, St. Louis (1-16, twenty, Gnesen Twp. dump, JCG), Lake. Migration in the **North** 2-6-22.

CLARK'S NUTCRACKER: 12-6 Grand Marais, Cook Co. Don and Judy Lar-mouth **vide** JCG; 12-8-18 Gunflint Lake, Cook Co. Peggy Heston.

Black-capped Chickadee: Reported from 29 counties.

Boreal Chickadee: Reported from Cook, St. Louis, Beltrami (Turtle River, ETS).

Tufted Titmouse: Reported from Winona, Goodhue, Olmsted, Fillmore, Wabasha, Dakota, Hennepin, Cottonwood (2-26, small flock, Mt. Lake, **vide** Mrs. LAF).

White-breasted Nuthatch: Reported from 25 counties from St. Louis to Beltram south to Nobles to Winona Counties.

Red-breasted Nuthatch: An invasion year. Reported from 22 counties from Cook to Beltrami south to Nobles to Winona Counties.

Brown Creeper: Wintered in 22 counties from St. Louis (all winter, Hibbing, HM) to Beltrami (12-28, Saum, MK) south to Nobles to Winona Counties.

DIPPER: First Minnesota record; probably same individual seen on following North Shore streams in Cook Co.: 1-29 Temperance River MHM; 1-31 Cascade River VL, RL, MMC; 2-1 Pop-

lar River MMC, ELC; 2-7 - 3-7 Temperance River (many, many people).

Winter Wren: 12-6 Fillmore AFR; 12-7 Hennepin KRE.

Mockingbird: 12-13 - 1-2 Redwood PE.

Brown Thrasher: 11-15 - 3-29 Duluth Twp., St. Louis Co. JCG.

Robin: A few wintered in Cook, Lake, St. Louis, Morrison, Renville, Fillmore, Olmsted, Cottonwood, Ramsey, Blue Earth, Freeborn, Chisago, Wabasha, Nobles, Washington; flocks (40-60) in Hennepin, Rice, Winona, Goodhue.

Varied Thrush: Male, late Dec. - early April, Duluth E. Wahlberg **vide** JCG; adult, 1-9 (C. Feller **vide** RBJ) - 1-27 (VL) - later? Tanner's Lake, Washington Co. (seen also by BL, DAB, M. Howe, KP).

Eastern Bluebird: 12-26 (6), 1-1 (12), 2-19 (2) Winona BTW; 12-28 (3) 12-30 (5) Wabasha DGM; 1-24 (3) Wabasha RG; 11-27 - 12-27) Cook JP.

Golden-crowned Kinglet: Wintered in Winona, Blue Earth, Goodhue, Stearns, Cook (2-1, Grand Marais, EL), Cottonwood, Rice, Lyon, Fillmore, Wabasha.

Ruby-crowned Kinglet: 12-4 Wabasha DGM.

Bohemian Waxwing: First seen 12-4 Morrison HD; 12-4 Duluth A. K. Arndt. Flocks of 20-80 reported from Crow Wing, Morrison, Nobles, Beltrami, Marshall, mid-St. Louis. Large numbers (up to 2000) in Duluth in Jan. and early Feb. Last report 2-27 Morrison HD.

Cedar Waxwing: Small flocks (less than 100) reported erratically throughout the state from Cook to Winona to Cottonwood to Polk Counties; 13 observations in Dec., 11 in Jan., 22 in February.

Northern Shrike: Reported by 23 observers (out of total of 63) in the eastern part of the state from Cook to Winona to Stearns to Marshall Counties.

Meadowlark sp.: 12-15 Lyon PE; 12-30 Watonwan EDK; Dec. (5), Jan. (1) Nobles HSH.

Western Meadowlark: 12-28 Winona BTV.

Redwinged Blackbird: Wintered in Hennepin, Dakota, Goodhue, Lyon, Wabasha, Morrison (Dec.) Ramsey, Watonwan, Carver, Winona, Houston.

Rusty Blackbird: All winter in Olmsted, Hennepin; Dec. in Rice, Yellow Medicine.

Common Grackle: Wintered in Lyon, Olmsted, Cook, Stearns, Wabasha, Hennepin, Goodhue, Winona, Clearwater, St. Louis, Mille Lacs.

Brown-headed Cowbird: 1-1 (8) Winona RG, BTV.

Cardinal: Reported from Yellow Medicine, Hennepin, Winona, Wabasha, Olmsted, Wright, Ramsey, Rice, Cottonwood, Chisago, Carver, Washington, Lyon, Goodhue, Blue Earth, Stearns, Mille Lacs (Princeton).

Evening Grosbeak: The least abundant winter finch in the **South**; small flocks erratically seen in Hennepin, Dakota, Stearns, Cottonwood, Lyon, Goodhue, Chisago, (35-50 all winter). More abundant in the **North** with reports from Clearwater, Lake, Morrison, Marshall, Aitkin, Crow Wing, Mille Lacs, St. Louis (12-23, 100, Duluth, MMC), Beltrami (2-9, 225, Bemidji, ETS).

Purple Finch: In the **South** wintered in good numbers from Mille Lacs, Morrison, Chisago to Winona, Cottonwood, Nobles Counties. Only report for the **North**, 2-23 (8) Hubbard RBP.

Pine Grosbeak: Common in the **North** with reports from Cook (12-12, 100, JP) Lake, St. Louis (12-27, 142) Duluth, MMC; 12-20, 268, Hibbing, HM) Marshall, Crow Wing, Carlton, Aitkin (1-25, 150, RG) Hubbard, Beltrami (2-9, 150, ETS), Pine (2-18, Willow River, RBJ). Only reports for the **South** on 12-20 (3) Stearns KRE; 2-26 (3) Hennepin BAH.

Hoary Redpoll: First seen on 12-20 Stearns KRE; 12-22 Redwood KRE, PE; 12-27 Duluth MMC. No other reports until Feb. (2-3 Hennepin VL; 2-4 Rice GNR) when seen by 13 observers

through 2-28 (Hennepin, CKS: and also EMB). Greatest number: 4 in Duluth MMC.

Common Redpoll: Most abundant bird for whole winter throughout the state. Reported in the **South** from Lyon, Hennepin, Stearns, Wabasha, Olmsted, Fillmore, Wright, Swift, Nobles, Dakota, Rice, Cottonwood, Chisago, Ramsey, Pope, Goodhue, Blue Earth, Carver, Winona, Washington; in the **North** from Cook, Lake, St. Louis, Mille Lacs, Crow Wing, Morrison, Hubbard, Clearwater, Marshall, Aitkin, Beltrami, Pine, Cass.

Pine Siskin: Erratic but common especially in the **South** where reported from Hennepin, Wabasha, Ramsey, Lyon, Swift, Anoka, Chisago, Washington, Wright, Winona, Goodhue, Blue Earth, Stearns, Rice, Carver; in the **North** from Lake, St. Louis, Morrison, Mille Lacs, Clearwater.

American Goldfinch Wintered in good numbers throughout the eastern part of the **South** as far as Jackson and Blue Earth Counties; in the **North** only reported from Morrison (1-2 all winter).

Red Crossbill: Erratic but common especially in the **South** where reported by 28 observers from Lyon, Hennepin (20), Stearns, Wabasha, Olmsted, Swift, Ramsey, Cottonwood, Chisago (22), Winona Sherburne, Rice, Washington, Goodhue (15); in the **North** reported by 8 observers from St. Louis (20), Clearwater (25), Beltrami, Mille Lacs, Crow Wing, Morrison.

White-winged Crossbill: In the **South** reported by 15 observers from Lyon, Hennepin, Ramsey, Winona, Cottonwood, Stearns, Chisago, Washington, Nobles (15); in the **North** reported by 8 observers from Aitkin, Lake, St. Louis (small groups, 1-6, moving down the North Shore until mid-Jan., JCG), Clearwater, Beltrami.

Rufous-sided Towhee: Mid-December through winter, Burnsville, Dakota County, *vide* DAB.

Slate-colored Junco: Wintered from Duluth (up to 12 daily, K. Sundquist),

Hibbing, Beltrami (flocks, MK), Marshall Counties south in increasing numbers throughout the state.

Oregon Junco: From 1-3 reported by 18 observers in junco flocks in the southern half of the state.

Tree Sparrow: In the South wintered in good numbers; only reports in the

North: Mille Lacs (1-3 all winter, WJH); Gnesen Twp., St. Louis Co. 1-24, two, KRE).

Field Sparrow: 12-19 through winter, Winona BTV; seen by RG on 1-1.

Harris' Sparrow: 12-20 Hibbing, St. Louis Co. HM; 12-1-31 (2) Cottonwood Mrs. LAF; 12-22 (2) Yellow Medicine PE; 2-7 (several) Jackson HSH.

WHITE-CROWNED SPARROW: 12-22 Redwood PE, KRE; 1-31 at feeder near Cascade River, Cook Co. K. Denis.

White-throated Sparrow: Reported by 14 observers through mid-Jan. from Lyon, Hennepin, Wabasha, Swift, Cottonwood, Rice, Chisago, Goodhue, Carver, Blue Earth. Also reported throughout the winter from Hennepin (2 observers), Crow Wing, Olmsted, Winona, Chisago, Blue Earth, Ramsey, 1-31 Cook T. Dyke.

Fox Sparrow: 12-28 Swift HSH.

Swamp Sparrow: 1-22 - 4-18 Duluth K. Sundquist banded; 2-21 (RG, DAB - 2-28 (BTV) Winona.

Song Sparrow: Reported by 5 observers through late Dec. from Yellow Medicine, Wabasha, Henneepin, Blue Earth, Carver. 12-20 throughout winter, Winona BTV; 1-31 Cook JB.

Lapland Longspur: 12-10 (6) Winona BTV; 12-23 (150) Rice GNR; all winter, Lyon HCK, PE.

Snow Bunting: Wintered throughout the state. Reported from 21 counties. Last in South 2-28 Lyon PE.

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HAWKS AND HAWKING IN MINNESOTA

Summary of A 1969 Questionnaire

In 1965 the Minnesota Legislature passed a law allowing the use of hawks for purposes of falconry under regulations prescribed by the Commissioner of Conservation (Chap. 188 Laws of 1935). These regulations, which are set forth in Commissioner's Order No. 1759, allow the capture and retention of hawks for falconry under permit and in accordance with the regulations set forth in the Order and any additional restriction specified in individual permits. Hawks, under Minnesota law, are protected animals and, therefore, cannot be sold or bartered. Property rights in hawks retained under permit remain with the State. Permits may be issued without fee to Minnesota residents who are at least 15 years old. Hawks may not be taken on private property without the landowner's permission and only half the fledglings may be taken from any nest. Peregrine Falcons and Gyrfalcons may be taken only during fall migration. Other regulations are given in the Order. As of April 10, 1970, there were 45 hawk permits in force in Minnesota.

Since little has been known about the activities of falconers in Minnesota, it was decided late in the summer of 1969 to send a questionnaire to all having hawk permits inquiring as to the status of hawks and falconry and to ask for suggestions and comments regarding regulations of this activity. In all, 55 questionnaires were mailed and of these 26 were returned that were complete enough for statistical purposes. Twenty-three of these 26 respondents had kept hawks during the previous 12 months. About a third of these—9 of the 26—reported that they had used hawks for flying at wild animals—that is, falconry in the usual sense—during the previous 12 months. Of those who had not done so, some were training their birds, some had injured birds they were keeping as pets, and others had only kept hawks for a short period of time and then released them.

Of the 27 hawks reported as being kept under permit during the period, nearly half (12) were Red-tailed Hawks and a third (9) were Sparrow Hawks. Two had Broad-winged Hawks and there was one report each for Cooper's Hawk, Prairie Falcon, Pigeon Hawk and Marsh Hawk. It should be noted that no Peregrine Falcons or Gyrfalcons were reported, although a few permits had been issued to more experienced falconers for these birds.

The hawks were obtained in several ways, and for the 23 hawks for which the method of capture was reported 9 had been taken from a nest, 3 captured as young birds, 4 captured as adults, 5 were taken as injured or non-flying birds, and 2 had been imported from outside Minnesota. What happened to the birds the falconers obtained? Of 30 for which information on this was reported more than half (17) were eventually released to the wild. Many of these had been obtained in summer or fall and were released before winter set in. Five of the hawks (1/6 of the total) died during their captivity (one from coccidiosis); at least 3 escaped, 3 were shot or otherwise killed, and 2 were given away. Several of the respondents report keeping Red-tailed Hawks as long as two years with the birds remaining in good health and one had retained a redtail for 5 years.

We also inquired as to the number of protected birds and mammals and other wildlife that hawks flown for hunting had taken. Six of the respondents reported on this. They stated that the annual take of protected animals by their birds ranged from 2 to 15 animals per hawk. The most usual (median) figure was 3 protected wild animals per hunting hawk during the 12 months—hardly a cause for concern regarding depletion of game populations. The number of non-protected animals, such as mice and ground squirrels, taken per bird ranged from 2 to 100 with a median of 4. It is quite evident that most of the

food eaten by the captive hawks came from other sources. One respondent remarked that the only wildlife his Sparrow Hawk captured was grasshoppers.

The respondents resided at various places in the state but there were more in the Twin Cities area than elsewhere. Since falconers are especially interested in hawks and frequently observe them, they were asked as to their opinion on trends in abundance of hawks. There was no uniformity of answers even for individual counties, but a general summary of their replies is as follows:

Decrease in number of resident hawks was reported by eight of the observers. In Stevens County of western Minnesota Red-tailed Hawks and Marsh Hawks were reported to be decreasing. A general decline was reported for the Twin Cities area (Ramsey, Hennepin, and Carver counties) for all hawks except Sparrow Hawks. One respondent estimates the decline in Hennepin County to have been 35 to 40 percent during the past eight years. In Freeborn County, Red-tailed Hawks and Sparrow Hawks were reported to be declining. In Fillmore County, adjacent to Iowa, hawks other than Red-tailed Hawks were reported as "very rare." However, **little change** in hawk abundance was reported by 10 observers in Washington, St. Louis, Beltrami, Clearwater, Anoka and Cook counties for hawks in general and specifically for Red-tailed Hawks in Hennepin and in Ramsey County.

Increase, at least over 1968, was reported by nine observers: the increase being for Sparrow Hawks in Hennepin and Winona Co's., Red-tailed Hawks in Fillmore and Douglas counties and Red-tailed Hawks in Clay County in the Northwest. One respondent reports an increase in Broad-winged Hawks in Cook County, and another, more quantitatively inclined, reports that in a 20-square-mile area in Douglas County there were 2 Red-tailed Hawk nests in 1968 but 5 in 1969. Although this information is for the most part subjective it does indicate

that Red-tailed Hawks and Sparrow Hawk populations are maintaining themselves. This is of considerable importance since most of the hawks retained by Minnesota falconers are of these two species.

General enthusiasm for hawks and protecting them was shown in the space left on the questionnaire for comments and suggestions. Often these remarks were expanded to the back of the sheet or filled several additional pages. Hawks and hawkling have a special fascination today as they have had for thousands of years. One respondent remarks, "Birds of prey are majestic and magnificent and I would hate to see the day when I could no longer watch them fly in the sky." Another says, "It is a rare privilege to know a hawk personally." Another states, "Everyone in the family enjoys the Sparrow Hawk, even the beagle." Still another, who was a soldier in Viet Nam when he received the questionnaire, remarked, "Hawks fascinate me."

As to suggestions, all agreed that hawks should have more protection, especially from hunters who sometimes shoot them illegally. One respondent even went so far as to suggest that the high-powered rifle be out-lawed. Several pointed out that there is unnecessary killing of hawks by some farmers who consider all hawks to be "chicken hawks" and suggest that hawks doing damage be trapped and hauled away. Educational material on the value, beauty and identification of hawks was suggested, as was closer review of qualifications of those who apply for hawk permits. Other suggestions included "legalize the sale of hawks"; "permit special long hunting seasons for falconers"—several mentioned this; "make the Great Horned Owl a protected bird"—it is now the only unprotected raptor in Minnesota; "decrease use of pesticides"; and "have falconer's organizations police their sport." Most of these suggestions would require legislative action to change state laws.

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Carl Walin (St. Louis Park), John A. Haugen (Gilbert), Eliot Schaeffer (Brooklyn Center), Larry Doelle (Winnona), Jim Lamont (Edina), Greg Bunce, (New Brighton), Richard Maus (Alexandria), Robert W. Ripperberger (Minneapolis), L. David Mech (Fridley), Loney Anderson (Albert Lea), Lincoln Gray (Northfield) and Roger A. Knutson (Richfield).—**Prepared by John B. Moyle, Technical Assistant to the Director, Minneapolis Division of Game and Fish, April 8, 1970.**

NOTES OF INTEREST

AMERICAN WOODCOCK OBSERVATIONS—NORTHWESTERN MINNESOTA—Over the past several years on a number of occasions, American Woodcock have been observed in northwestern Minnesota. On October 26, 1968, a woodcock was shot on the Agassiz II wildlife management area, Norman County (T.146N., R.45W., Section 28, NW $\frac{1}{4}$) by Maertens. The bird flushed from a low swail in an aspen "island" while the author was hunting Ruffed Grouse. While conducting a dead deer search on the East Park Wildlife Management Area, Marshall County (T.158N., R.44W., Section 20 NE $\frac{1}{4}$) on May 9, 1969, a lone woodcock flushed from an aspen thicket on two occasions. The bird was observed by both authors. Davis picked up a dead woodcock on a trail adjacent to the NW $\frac{1}{4}$ of section 8, T.158., R.44W., on October 12, 1969. The bird apparently had been shot by a hunter probably hunting Ruffed Grouse the day before the bird was found. There have been other occasional reports of woodcock seen and or bagged by hunters but not verified. The front cover photo is of an American Woodcock on a nest taken on May 11, 1968. The nest was located on the Kabekona Wildlife Management Area (NE $\frac{1}{4}$ NW $\frac{1}{4}$ section 25, T.143N., R.33W.), Hubbard County. The nest was located on a cutover area adjacent to Kabekona Creek and was located by game manager Roger Lehmann.—**Gerald Maertens, Crookston, Minn.**

TOWNSEND'S SOLITAIRE SEEN AT ST. PETER—On April 3, 1970, I sighted a single Townsend's Solitaire a few blocks from Gustavus Adolphus College. I noted every field mark so that I was sure to make a positive identification. It permitted a very close approach of within a few feet, or almost directly below it, as it was eating hawthorn berries. The environment was that of a dried-up stream bed with cedars, boxelders, elms, summac, cottonwoods and other trees in the immediate area. I first saw the solitaire on the ground under a cedar as it was probably searching for food. It soon flew a short distance to a limb where I first got a good look at it and finally, to a hawthorn. I left while it was still perching in the hawthorn, after I had watched it for about five minutes. I didn't see the solitaire the following day nor have I seen it since. I'm currently a member of South Dakota's Ornithologists' Union. This is the third solitaire that I've seen. Peterson, in his *A Field Guide to Birds*, describes the solitaire as an "accidental" in Minnesota.—**John M. Lewis, P. O. Box 692, St. Peter, Minnesota.**

NIGHT FEEDING OF A CHICKADEE—We have a feeder next to our kitchen window which is a simple platform mounted on a pipe and is close enough

to the window for me to reach out and spread the seed. During supper on March 12, 1970, between 7:00 and 7:30 when it was completely dark, I looked out and was surprised to see a Black-capped Chickadee feeding. The light from the large kitchen window illuminated the feeder and some of the snow-covered ground in the yard beyond. The bird's feathers were rather puffed up, but he was attacking the sunflower seeds vigorously, perching on the raised edge of the platform instead of flying to a tree to open the seeds. Occasionally he flew down to the lighted area of the ground, hopped around and then flew back up to the feeder. We have a double-hung window and several times he flew up to it and perched on the frame of the storm window and watched us through the glass. When I opened the window a couple of times, he stayed on the frame or on the feeder and I was able to touch his feet and the end of his tail. He did not appear to be injured but his movements on the ground didn't look quite normal. I can't put a finger on what was different and it may have been due to the lighting but when you're watching birds off and on all day you'll notice something abnormal. He remained till about 8 o'clock.—Mrs. Robert C. Binger, Dellwood, White Bear Lake, Minnesota.

RED-THROATED LOON ON LAKE HARRIET—On April 17, 1970, I stopped about 9:30 a.m. by Lake Harriet bandstand to look at Red-necked Grebes, which were quite close to shore. I drove over to the canoe racks west of the stand where I had a very good view of the bay area near the bandstand. Using a Bauch and Lomb 20x scope on my window, I checked out how many grebes there were to be seen, five were swimming to the right of the stand. I swiveled the scope toward the lake on my right and saw an immature loon. As I concentrated on this loon I began to see how slightly upturned its beak was, and checking further, I saw its back and back of neck and head were very mottled looking with pale grey and white spotting. This brought to mind the Red-throated Loon. We had been looking for this bird in Florida at Christmas, and had identified some at Cape Canaveral or the bay off Merritt Island. I checked my field guide and started checking the bird again. My view was excellent, a distance of less than 200 feet using a scope with light from my right—I saw the bird with markings similar to the immature loon: except for the mottled back and neck, the white on the front part of the neck came up near the eye, the eye was red, the beak light in color. I checked a nearby Common Loon to judge the beak size, its beak was very thick and black. Looking back at the unusual loon, I saw what a small thin pale-colored beak it had and how graceful the bird looked in contrast to the Common Loon. I would judge I watched the bird a good 10-15 minutes, all this while I did not see it ride lower in the water or lower its head, although I did see it roll its body sideways and up, to scratch or clean with its feet. After this time, it began moving in front of some Red-breasted Mergansers and I noted its size was similar to these birds. Checking my guide, I found the mergansers were 16 inches in length and Red-throated Loons were 17 inches, this made me more sure about the identification. Suddenly the loon was airborne, I quickly swung the scope toward its flight. I had a chance to see the wing stroke rise high while in flight, with a long, lean wing. The bird had flown toward the southeast corner of the lake. On the way over to a friend's home, I saw the Frank Exners and told them what I thought I had seen. They drove over to the southeast part of the lake and did see this loon, but while setting up their scope outside, the bird left. I looked over the lake later and saw an immature loon on the south side, but arriving there I could not find it. Checking over my field guides later, I learned from the COMPLETE GUIDE TO AMERICAN WILDLIFE by H.H. Collins, Jr., that the Red-throated Loon "Can spring into the air without pattering on water; will often fly rather than dive." The loon I saw became

airborne quickly and flew quite high—similar to a duck's flight—then arced off toward the southeast. There is good reason to believe that seeing thees loons in Florida made me more aware of the upturned look of the head.—**Evelyn Stanley, 4317 Toledo Ave., N., Minneapolis, Minnesota.**

WESTERN GREBE ON LAKE CALHOUN—On April 16, 1970 about 8 a.m. I decided to stop at Lake Calhoun on my way to work to see what might be on the lake. My initial observations were made from the Southwest shore so that I was looking into the sun. I quickly spotted a large grebe-like bird perhaps 500 yards east of me. Its size became apparent when I saw that there were two Common Loons between me and the bird. As I could see very little detail because of the sunlight, I drove to Thomas Beach on the South shore of the lake. I quickly located a Western Grebe about 300 yards Northeast of the beach. I am familiar with the species, having seen it off Carmel, California. I passed the word along and when I returned to the same place in the late afternoon there were several other people looking for it. A gentleman with a scope located it much further out in the lake at the extreme limit of my glasses. Most of Western Grebe records for Eastern Minnesota seem to come from the Minneapolis lakes. Since these are heavily scouted by birders, this suggests the species may occur more frequently in the area than generally believed.—**Charles L. Horn, Jr., 5100 Juanita Avenue, Edina, Minnesota 55424.**

ADULT LITTLE BLUE HERON AT HERON LAKE—On May 9, 1970 at 11:15 a.m. while birding alone at the north end of Heron Lake, Jackson County, I noticed a heron wading in the marshy edge of the lake about 80 yards away. Even when viewed through binoculars, it was discernible that this dark-colored heron was much smaller than a Great Blue Heron, and yet was somewhat longer and thinner than the chunkier Black-crowned Night Heron. During the 15 minute observation of the bird through a 25x scope, skies were clear, and the sun was almost directly overhead. Then without any apparent cause, the bird flew off eastward, and when at a great distance it could be seen gaining altitude by flying in wide circles until it was finally lost from sight. The color of the body and wings was slate-blue; the color of the head and neck was maroon. The sharply-pointed beak was noticeably dark blue in color, but the exact color of the dark legs was indistinct at that distance. This is surprisingly, the second Little Blue Heron I have seen within the past year; the first being the much observed bird found last May at Frontenac.—**Bill Litkey, 506 Ingelwood Ave., St. Paul, Minnesota.**

WESTERN SANDPIPER FOUND IN MILLE LACS COUNTY—On June 1, 1970 I saw a Western Sandpiper feeding in a wild rice pond near Onamia together with four Dunlins, five Semipalmated and a White-Rumped Sandpiper. This bird looked to me at once unusual. Fortunately for me the sandpipers came often close together and I could see them all at a time like on a page of a bird book. The Western was noticeably bigger than the Semipalmated, but smaller than the White-rumped. His bill was "dunlinlike," but shorter and less decurved than in a Dunlin. As he stopped at several inches from a Semipalmated I could see clearly his somewhat rustier back and crown. His breast was coarser and denser streaked than of the Semipalmated and looked much darker. Both birds had black legs. He looked almost like the Western Sandpiper in the "Audubon Water Bird Guide" which I used then in the field. The movements of the Western, while feeding, were rather fast and full of energy like that of a Semipalmated Sandpiper. But the White-rumped moved slowly, stopping for a longer while in one place and probing the same muddy spot many times. I made these notes while watching my birds at 3-5 p.m. with the sun in my back, concealed by an earthen wall around the pond. Binocular 6x30. The birds were

moving almost continuously back and forth and often were not more than 20 steps from my hideout.—**M. Ivanovs, Onamia, Minnesota.**

A RECENT MINNESOTA NESTING RECORD OF THE LONG-EARED OWL—Roberts (1932) in *Birds of Minnesota*, notes that the Long-eared Owl is “common and generally distributed” throughout the state. He cites breeding records from the southeast all the way north to Roseau. In the past ten years there have been very few summer records of this species within the state and no nests have been found for quite some time. (The last recorded Minnesota nesting occurred in May, 1961, when Dick Grant found a nest with four young in Hennepin County.) The sightings which have been reported have mainly been from the northeastern boreal zone. In view of the recent history of this owl in Minnesota it seems noteworthy for me to report the discovery on May 25, 1969, of a Long-eared Owl nest in the Carleton College Arboretum, Dakota County, about two miles northeast of Northfield. Sheldon McCrarie, a Carleton student, told me that he had found two young owls beneath a nest in a pine tree. I went with him to the nest site which was in about an eight acre plantation of badly overcrowded jackpines. The trees, all of which were about 25 feet tall, were planted in such compact rows that no light could penetrate the dense canopy. All the branches were dead up to a height of about 12 feet, thus forming a brittle thicket. The nest itself was located about 15 feet up in a tree near the very center of the plantation. I climbed to the nest to return the two downy young, both of which had just begun to sprout primaries and secondaries. I found three other downy young in the nest, all of which were of different sizes. The youngest of the owlets showed no signs of either remiges or retrices. The nest appeared to be an old crow’s nest and it was hardly large enough to contain the five owlets even at their early stage of development. When I picked the young owlets off the ground and prepared to climb the tree I noticed a parent bird moving through the trees about 75 feet away from me. While I examined the nest it stayed about this distance, making no sound and displaying no defensive behaviors. This is strikingly different than the reports of Bent and collaborators who describe many varied and vigorous nest defenses. While I was still at the nest the adult flew farther away, out into a more open area where it was immediately mobbed by Common Grackles. On June 3, when I returned to band the young birds I found only a partially destroyed nest, the decaying bodies of the owlets and no sign of an adult bird.—**John A. Hart, Carleton College, Northfield, Minnesota.**

TWO INCREDIBLY EARLY SPRING RECORDS FOR THE PROTHONOTARY WARBLER—On April 11, 1970, while conducting a survey of sources of pollution on the Cannon River, I noticed a small golden orangish yellow bird with bluish wings flit across the river, about 10 feet in front of my canoe. I suspected a Prothonotary Warbler but because of the incredible date I turned the canoe, paddled upstream and looked at the bird with binoculars. It was perched in the lower branches of a tree on the water’s edge. I noted again the golden yellow color and the bluish wings with no signs of barring. I also recorded my impression that this bird was larger in size than the Myrtle Warblers I had been seeing the same day. The location for this observation was near Cannon Falls in Goodhue County. On the same river, but farther west in Rice County, I saw another adult male Prothonotary Warbler on May 3, 1970. This bird was perched on a dead willow stub and afforded me an excellent opportunity to study its golden unmarked plumage and bluish wings. It is interesting that both these early records occurred in a southeastern Minnesota wet bottomland forest, the typical summer habitat for this species.—**John A. Hart, Carleton College, Northfield, Minnesota.**

CATTLE EGRET OBSERVATION—I should like to report that I observed an adult Cattle Egret in breeding plumage 10:30 a.m., May 30, 1970 at the edge of a slough adjoining the south end of Middle Lake near the town of Nicollet, Nicollet County, Minnesota. The site of the observation is a small slough lying just north of highway 99 and between it and a small gravel road that parallels highway 99.—**Ward Tanner Jr., Gustavus Adolphus College, St. Peter, Minnesota.**

BIRDS AT FROG LAKE—A recent issue of *THE NATURALIST* which was devoted to Frog Lake, Stevens County, prompted us to visit that area on May 29 and 30, 1970. The water level in the lake is high with the result that stands of emergent vegetation are much reduced in extent. Landowners told us that for that reason, far fewer breeding ducks and waterfowl were present than had been there in previous years. We counted a maximum of 18 Western Grebes visible (see photo below) at one time. Other waterfowl seen were three Pintail, a few Lesser Scaup, Gadwall, American Widgeon, Ruddy Duck, Redhead, Ring-necked Duck, Blue-winged Teal, and about 20 Double-crested Cormorants. A flock of 25 White Pelicans was seen on the 29th. A pair of Orchard Orioles was also found.—**Don Beimborn and Cliff Dill, Departments of Ecology-Behavioral Biology and Zoology, University of Minnesota, Minneapolis, Minnesota.**



YOUNG PINE SISKIN—On April 30, 1970, Eric Thiss, aged 12, my next door neighbor called my attention to a young bird which, he said had fluttered down out of a large spruce tree near where he had been playing in his yard. I went down to see it and found a feathered but tail-less young

bird which was apparently unhurt for it could hop and flap its wings. It looked like a very small Pine Siskin. Never having seen a young siskin I hesitated to be positive. However, I could think of no other small striped bird which could have been out of the nest by April 30. After I had examined the bird and adult Pine Siskin was seen scolding in the top of the tree. The tree was very tall and dense so we could not see a nest nor could we climb the tree. On May 8, I saw an adult Pine Siskin feeding a young bird, one with a partially developed tail. It had more yellow on the wings than the adult feeding it.—**Rachael D. Tyson, Route 4, Excelsior, Minnesota.**

A CEDAR WAXWING NUPTIAL DANCE—On May 21, 1970 a small flock of Cedar Waxwings were in our apple trees eating the petals of the apple blossoms. I decided to watch with my binoculars a minute and became aware of a rather unusual performance that I would call a nuptial dance occurring among the waxwings. One bird would pluck a petal from the blossom and give it to another sitting very near on the branch. Upon receipt the nearby bird would do a small hop away from the other, hop back again very precisely and return the petal to the first bird. This bird would do the same outward hop and back again, offering the petal to the second. This went on for at least ten hops or steps in the exact spot, finally one bird holding the petal and then eating it. Another pair began the same dance to offer a petal to a partner, each occurrence seemed to stimulate another pair to perform. This small display went on until all the birds had participated, it seemed a lovely and intelligent performance—reminding me of the more involved similar performances of the manakin bird display. I also observed one bird try to join a pair display, he seized a petal but no bird would exchange with him. He was also discouraged by threatening flights from other waxwings, pointing out the performance as a courtship or nuptial dance.—**Evelyn Stanley, 4317 Toledo Ave. N., Minneapolis, Minnesota.**

CATTLE EGRET IN RAMSEY COUNTY—On May 18, 1970 while driving south on Edgerton Road about 500 feet before the bridge over new highway 35E in Ramsey County, I saw a small heron-like bird, to my left, walking in an uncut grassy field. As I crossed the bridge I realized it wasn't as large as a Common Egret and there was no water in sight. I had never seen anything like that before so I turned around to investigate. The egret was walking and feeding, possibly, on some type of insect catching them and shaking them down his throat. Besides being all white I could now see clearly a light tan color on the top of his head and down his back. I could not see the leg color but could see that his bill was light colored.—**Gordon T. Brandsness, 519 Carolyn Lane, White Bear Lake, Minnesota.**

POSSIBLE SPRAGUES PIPIT RECORD—On May 9, 1970 my parents, Mr. and Mrs. Henry T. Pratt drove down through the heavy showers for a few hours of birding at Frontenac. Before noon we walked walked the camp grounds and cemetery in which time there was practically no rain. At noon we drove up to the highlands picnic bench area, of the State Park, but since it had started to drizzle again we ate our picnic lunch in the car. As we drove into the parking lot we noticed two, Lark-size birds, walking in the gravel at the edge of the grass. We were able to stop the car within 15 feet of them without disturbing them and had excellent views. They were distinctly not Horned Larks, and the only other birds we could decide on were pipits. We were close enough to see when the birds stood on the logs retaining logs to see that they had pale yellow legs and looking down on them from the car we could see that they had streaks on their backs. The

only conclusion from checking in Peterson that this led us to was that they were SPRAUGE'S PIPITS. As this is very open country up there, it seemed to be the type of prairie country that this species might prefer.—**John T. Pratt, Box 240D, Route 3, Wayzata, Minnesota.**

COMMON EGRET SEEN NEAR DULUTH—On April 14, 1970, strong north-west winds blew in Northeastern Minnesota. At 0455 p.m., J. Howard McCormick, a member of the Duluth Bird Club, Roll Syrett and I left for home from the National Water Quality Laboratory. We drove the Scenic North Shore Drive. A mile or two east of Lester River we saw a heron-like bird fly across the road then turn and fly along-side of us, going the opposite direction from which we were driving. At one time the bird was about 25 to 30 yards from us. We all had a good look at it. The bird looked like a Great Blue Heron only it was all white and was a little smaller in size. My first thought was that it was an egret. I had seen egrets before in Southeastern Minnesota. It was the first that I had ever seen in Northeastern Minnesota. When I arrived home, I went straight to Peterson's **Field Guide to the Birds** and looked up herons and egrets. The American or Common Egret was the bird we saw. There was another report of a Common Egret (seen by Pete Getman) in the Lester River area later the same day. This bird is a rare visitor in the Northeast. It has been observed here not more than about half a dozen times.—**John G. Hale, 223 McQuade Road, Duluth, Minnesota.**

GREATER REDPOLL SPECIMEN—On February 13, 1970—a Friday no less—I was netting and trapping birds in my back yard. As I approached the mist net in the morning I noticed a bird along side a Common Redpoll that was larger and darker than it. Before I got up to the net I assumed that I had netted a Purple Finch, either female or of unknown sex bird. Upon examining the bird I found it to be a Common Redpoll but with larger dimensions. In reading Bulletin 237, Part 1, of **Life Histories of North American Cardinals, Grosbeaks, Buntings, Towhees, Finches, Sparrows and Allies**, by A. C. Bent, I found on page 421 under Greater Redpoll—"This is the other large and dark colored redpoll, previously mentioned as being difficult to recognize in the field." "Ridgeway (1901) describes the Greater Redpoll as similiar to *holboelli*, 'but much larger and with a relatively thicker and more obtuse bill; coloration rather darker and browner, with the dusky stripes on sides and flanks usually heavier and broader.'" This was true of this bird. On page 423 it lists two places seen in Minnesota in the winter range: Kittson County and Minneapolis. The A.O.U. Check-List of North American Birds, fifth edition, states on page 569: the Greater Redpoll "winters from southern parts of breeding range south casually to Colorado, Minnesota (Kittson County, Minneapolis). I assume Bent took his information from this book. This bird, banded with band 122-47039, was an adult male. The right wing measurer 3 1/16 inches or 7.7 m.m. The bird weighed 15.6 grams. While the bird was yet alive I called the Ford Bell Museum of Natural History and talked with John Jarosz and he stated that he felt the bird was of great enough significance for it to be retained and a skin made for the Museum collection. The bird was taken to the Museum that day and left for preparation into a collection skin.—**Forest V. Strnad, Box 237, Wyoming, Minnesota.**

ADDITIONAL MINNESOTA OPOSSUM RECORDS—Since few specimens of the opossum have been taken or reported from western Minnesota or north of the Twin Cities region I feel it desirable to report several records that have recently come to my attention. The most recent is of an animal brought to the St. Cloud State College Biology Dept. while I was on the staff there.

This specimen was taken on Jan. 23, 1968 in Wright County near Clearwater (Silver Creek Township, Sect. 19 T.122 R.26). This was a female in good condition and is now number 65 in the St. Cloud State Collection. Its measurements were as follows: 750 - 220 - 66 - 40. I have two additional reports of specimens from the central and eastern part of the state which are at or near the edge of the species known range. The first was given to me by Dr. Harry Goehring of the St. Cloud State Staff. This was of an immature male taken on Oct. 13, 1962 by Wm. Keigan of Sauk Rapids, Minnesota. It was captured seven miles north of Hutchinson, along the south shore of Lake Jenny in Meeker County. Unfortunately no part of this specimen was saved. The most easterly record for the central part of the state was given me by Maynard Nelson of the Minnesota Game and Fish Department (pers. com., March 23, 1970). This is of an animal taken in Isanti County in Nov., 1963. It was trapped by Nick Dennis along the Rum River, two miles north of the town of Isanti, Minn. Since moving to Fargo in September, 1968 I have obtained several roadkill reports from both sides of the Red River, although I have not as yet been able to substantiate any of these. There is, however, one definite record for western Minnesota in the files of the Zoology Dept. here at North Dakota State University. This is of an animal found on the town dump at Hendrum, Minn. (Norman County) in Nov., 1964 by Mr. Richard Hagen, an experienced trapper. This information was reported by Calvin Scholl, who is now a Graduate student on this campus. There are a number of records of this species from along the southernmost two three tiers of counties bordering Iowa in central and southeastern Minnesota but few records from the region bordering South Dakota. The only record I can find for this area is that of a picture of one appearing in the Lyon County Independent for Jan. 27, 1965. This opossum was reportedly picked up alive near Minneota, Minn. in northwestern Lyon County. Presumably it also must occur northward along the Minnesota-Dakota border in the region between Lyon County and Wilkin or Clay counties, as there are specimens from Moody, Brookings and Roberts counties in South Dakota and it also occurs in southeastern North Dakota as far north as Hillsboro (Traill County). Naturalists and trappers in this area should be on the lookout for this species. As recently as 1961 (Gundersen, Minn. J. Sci., 5(1) : 48-50) all these records would have been considered outside the known range of the species in Minnesota. Since this time however, I have reported specimens from Stearns and Douglas counties (Hibbard, The Loon, 37(2) 89-90, 1965) and Hazard has reported a specimen taken in Cass County (J. Mamm., 44(1) : 118, 1963). I had also previously reported the species from the southeastern North Dakota and Northeastern South Dakota areas indicated above (Hibbard, op. cit.). The above information appears to verify reports of this species extending its range northerly and westerly in the state.—**Edmund A. Hibbard, Dept of Zoology, North Dakota State University, Fargo, North Dakota.**

A THANK YOU TO LOON EDITOR BOB JANSSEN

Over the objections of Robert B. Janssen, editor of this magazine for the past eleven-and-a-half years, I am insisting on publication of this note of thanks.

Bob Janssen, I regret to say, has resigned as editor. If there were any way that I could prevail upon him to continue as editor, I would, for he has been an excellent editor. But he has explained to me that the pressure of other duties makes his continuation as editor impossible. Therefore, with regret, I have accepted his resignation. Probably this will be the last issue edited by him.

Editorship of The Loon is the most arduous job in the MOU as well as the most influential. Bob Janssen has been editor longer than anyone else, and like the officers and previous editors, he has worked without compensation. Therefore I know that I speak for the membership, all the officers, and all the contributors to the magazine when I offer him hearty congratulations and sincere thanks for a big job well done.

Though it will not be easy for anyone to take over as editor, publication of The Loon will continue without interruption. The one bright spot in Bob Janssen's leaving the editorship is that he has promised to become a more frequent contributor. His articles will be worth looking forward to. I hope that he will also remain associated with The Loon in an advisory capacity, perhaps as a member of the editorial board.

Thanks again, Bob Janssen, and best wishes for success in all your future undertakings.

*Robert E. Turner, President
Minnesota Ornithologists' Union*

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The LOON

SEPTEMBER 1970

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Orders for subscriptions, memberships, back issues (\$1 each), and checklists (5 cents ea. plus 5 cents postage or 50 for \$1.25 plus 15 cents postage) should be sent to the treasurer, Mrs. Elizabeth Campbell, 5267 W. Bald Eagle Blvd., St. Paul, Mn. 55110.

Bird sightings should be reported to the associate editor in charge of "The Season" section, Mrs. Janet Green, 9773 North Shore Drive, Duluth, Mn. 55804. Make your reports on forms obtained from Mrs. Green, and turn them in promptly at the end of each season (important).

PURPOSE OF THE M.O.U.

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 M.O.U. officers wish to point out to those interested in bird conservation that any or all phases of the M.O.U. program could be expanded significantly with gifts memorials or bequests willed to the organization.

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COVER: American Avocet. Photo by Robert E. Turner, 1969.

The President writes...

Spread the word:

Unlawful to kill hawks and owls

I had never seen Golden Eagles at the nest. So when I saw a huge nest of big sticks on a canyon wall in Utah, I stopped, waited, and watched. But instead of eagles, the landowner arrived. I told him that I was hoping to see the eagles that had built that nest up on the ledge.

"Do you mean them big brown hawks?" asked the rancher. "You won't see them. I shot 'em a month ago."

I exploded. "Why kill such magnificent birds?" I tried to explain that those had been Golden Eagles, a scarce bird that is getting scarcer, a noble bird, a bird that befriends ranchers by killing rodents, a bird protected by law. But to this rancher, clearly, there was a higher law that decrees that all hawks must be shot, that to kill them is natural and proper, that not to kill them is unthinkable.

Tragically, this barbaric notion is widespread. It has steeped into our genes during two million years of our own evolution as predators.

I once saw this "kill the hawk" idea reinforced by an idiotic TV "western". A westward-moving pioneer family halted their covered wagon at the ideal spot and decided to stake a land claim and establish a farm. Seeing a hawk overhead, the father, oozing righteousness, explained to his little son that a hawk is a lawless killer, untamed and untamable, wholly incompatible with the civilization that now must come to this rude but potentially good land.

Just as the pioneer was about to pull the trigger, some mean-looking Bad Guys rode up and forbade him to shoot. They said they liked hawks. What's more, they disliked nesters; this land must remain wild Open Range. They weren't going to permit anyone to homestead here. And when the pioneer protested, they beat him cruelly.

Later in the story, of course, the lone pioneer stood up to the Bad Guys, single-handedly thrashed the whole scurvy gang, and ran them off his land claim. Then when the hawk sailed over again, he again explained (in case we missed it the first time) that the hawk represented savagery and must not be tolerated. And with the air of one who is doing a noble deed, he blasted the bird out of the sky. Our heroic pioneer had got rid of all the rapacious bipeds, both featherless and feathered. End of spelt-out symbolism. End of melodrama.

Too many people see all hawks as "chicken hawks" and call them "vermin". Then these libellous labels are used to justify the slaughter of many creatures that are needed to make the environment whole and good.

Even people who should know better may seize any excuse to kill a hawk. According to a newspaper, a woman walking along a forest path passed near the nest of a Broad-wing Hawk, and the hawk made a vicious, unprovoked attack on her. This was in a state park in a neighboring state. Did the park superintendant rope off the nest area and declare it out of bounds to park visitors? No, when he heard of the attack this intrepid conservation officer shot the hawk.

Most people do not want to break the law. So let's help them. Let's spread this word: In Minnesota it is unlawful to kill any eagle, or any hawk, or any owl except the Great Horned Owl.

ROBERT E. TURNER

"I PEERED OVER the edge of that huge nest and asked myself 'why did I ever volunteer for this job?' The screaming eagles flying above with their six-foot wingspan, and the gaping mouths of the chicken-size eaglets in the nest were frightening. I dug my climbing spurs into the big red pine, secured my safety belt and slowly reached for one of those hissing eaglets — fully expecting a handful of sharp talons. I figured my hand would heal in time, but if one of those adults decided to grab me, there wouldn't be enough left to worry about healing. But, John was right! They didn't fight back, and the adult eagles stayed away. I clamped a leg band on each of the youngsters, took a few pictures, and started the long climb down to the ground." This is Jack Stewart's account of his first experience at banding bald eagles, and the beginning of a most unusual project.

A BAND FOR AN EAGLE

By John Mathisen with Jack Stewart

Place yourself on the Chippewa National Forest in northcentral Minnesota. Here is a land of over 1,200 shimmering lakes, towering pine trees and a beautiful aspen-birch forest, generously interspersed with marshes and wetlands. Then consider that the bald eagle, our national emblem, is headed for extinction. Consider further that the 1½ million-acre Chippewa Forest is a major breeding area of this magnificent bird with over 100 pairs known to nest here. What better place to study the causes for declining populations of our national emblem than on this National Forest.

One great mystery is, where do the young eagles go after leaving their lofty nurseries in mid-July? It is rare to sight an immature eagle on the Forest, even though we know over 50 young are produced each year. Youngsters are readily distinguished from adults because they lack the white head and tail, which do not appear until the breeding age of 4 or 5 years.

Banding these birds with numbered aluminum leg bands will someday tell us migration routes and wintering grounds. It's not an easy job, though. The huge nests can

measure 10 feet across and weigh up to 2 tons! Worse yet, they are usually up 100 feet or more near the top of big pine trees, less frequently in hardwoods. A good healthy tree climber is needed, and Jack Stewart is just the man. Jack is a Forestry Technician on the Chippewa with a real interest in wildlife, and an experienced tree climber. I'm the Chippewa's Wildlife Management Biologist. Unlike Jack, my enthusiasm for climbing 100-foot trees is limited, but I am very enthusiastic about Bald Eagles. Both of us want to share our experiences and convey the feelings that our close association with these birds has produced. The problems to be mentioned are national in scope and indicative of man's disregard for his environment. So — let's band eagles!

Just getting to the nest tree can be a major undertaking. We often traveled by canoe (eagles frequently nest near water) and had to slog through wet, mosquito-infested bogs to reach the eagle's domain. We always approached a nest with a great deal of apprehension. Will there be one, two, or three eaglets? How big will they be? What interesting food items will be

found in the nest?

Jack would always carefully inspect the tree and nest situation to determine the best way up; each nest was a new challenge. Getting over the edge of the nest was always the hardest part, and some eaglets went un-banded because of the way their house was built. Once in the nest, Jack could stretch out and take a break. This gave him an opportunity to observe the young eagles at close range. If two were present, one was usually larger than the other due to an earlier hatching date. Personalities differed, too. Frequently one was more belligerent and played a hero role in the nest. Jack quickly became attached to the birds and often spoke to them much as one would talk to his favorite hunting dog.

I always stayed on the ground as a back-up in case of trouble. One day this arrangement really paid off. When Jack reached the nest, one of the eaglets, almost fully feathered, decided to leave home and



Nesting Bald Eagle, 4 to 6 weeks old. Chippewa National Forest Photo by Jack Stewart, USFS

made a great leap out of the nest. He sailed away and made a very un-eagle-like crash landing about 200 yards from the nest tree. I followed him down and, after quite a tussle, managed to get him into a large knapsack. Like most raptors on the defensive, he rolled onto his back with wings outstretched so that all those nasty toenails were ready for action. They have a vise-like grip at this age and deserve plenty of respect.

Jack lowered his line and we hoisted the renegade back into the nest. It is surprising that a 10-pound bird with a 6-foot wingspan and eight talons measuring over 2 inches each didn't do more damage.

Although plenty strong, Bald Eagles are not great hunters. They prefer to pick up dead or dying fish along beaches, and occasionally rob cousin osprey of his catch. Jack made notes of food present in the nests. It was always fish, ranging from northern pike to suckers. We have occasionally found fishing lures in the nest or on the ground beneath. "The one that got away" was caught by our feathered fisherman.

Some of our banding efforts were disappointing. Often we would reach a nest, only to find it deserted. Nesting failure occurs for about one-half the eagle pairs each year. An examination of these nest usually reveals unhatched eggs buried in the nest cup. We collected some of these eggs and shipped them to the U.S. Fish and Wildlife Service's Patuxent Wildlife Research Center in Maryland for insecticide analysis. Yes, one of the big reasons for nesting failure and even death among these beautiful birds is pesticide poisoning. Poisons are picked up from fish, their main food item. In some parts of the country breeding success is almost zero, and local populations have been wiped out forever.

The eagles' food habits make them especially vulnerable to pesticide poisoning. They are the final link in an aquatic food chain, and this means their prey has magnified pesticide residues to deadly proportions. The results are infertile eggs, eggs with thin shells (DDT inhibits calcium metabolism), and sick and dying eagles. An autopsy report for an adult eagle collected on the Chippewa National Forest showed death caused by 9.5 parts per million of dieldrin in its brain. Dieldrin is not used here, so the poison must have been accumulated in the bird's wintering area,

wherever that might be. Hopefully, our banding efforts will answer that question.

Our banding project has uncovered a mystery of eagle behavior. We found a sprig of fresh white pine needles in virtually all of the nests. This was not part of the nest structure or lining, but simply placed there by the eagles in a random manner. The fascinating part is that it was always white pine, regardless of the kind of tree the nest was in. It is noteworthy that red pine is three times more abundant on the Chippewa than white pine. The logical conclusion is that there is something about the needles of white pine that eagles like. What is the reason? We may never know, but it is fun to speculate. Does white pine have some chemical ingredient that reduces insect activity? This has been suggested. Perhaps one of the pair makes the big decision that this is home and places the pine sprig in the nest as a sign to the other mate. Let's not give the eagles credit for too much intelligence. As with all birds, their behavior is mostly instinctive. But here is an interesting habit that has passed on through generations of eagles.

So far, about 45 eagles have been banded on the Chippewa National Forest. Credits due Dr. Alfred Grewe and his student friends for some of these. To solve our mystery, we must band many more, and this we intend to do as long as there are young eagles to band.

Banding is only a part of our eagle project. Eagle management on this National Forest consists of three parts: inventory, protection, and evaluation. Each April and again in July we check all the eagle nests from an airplane to determine if they are occupied and the number of young produced. Eagles presumably mate for life and return to the same nest each year. A census of breeding pair, therefore, is relatively easy to obtain. All eagle nests are plotted on maps so forest managers can set up special buffer zones to protect nest trees from cutting and human disturbances.

Disurbance at nest sites may be an important reason for nest desertion, especially during the early stages of incubation. Our banding is always done late in the season when family ties are strong. Frequently the adults will back on the nest before we leave the area. Even so, we try to make our exit as quickly as possible.

Year	Known Nests	Observed Nests	Active No.	Nests %	Successful Nests No.	%	Young Per Nest
1963	48	31	20	64	6	30	1.7
1964	55	46	30	65	12	40	1.2
1965	76	58	39	67	22	56	1.3
1966	107	70	52	74	19	61	1.5
1967	135	67	49	73	21	55	1.4
1968	142	105	52	49	33	63	1.5
1969	139	117	60	51	29	48	1.5
1970	141	125	65	52	35	54	1.8

Bald eagle nesting activity has been evaluated for 8 consecutive years on the Chippewa National Forest by wildlife biologist John Mathisen and his associates. In 1970, 125 of 141 nests were observed by airplane. Over half of the observed nests had adults present. Only about half of the eagle pairs were successful in raising young, about average for the 8 year period.

It is impossible to say if eagles are increasing or decreasing in this important breeding area, but nesting success is higher here than in most other parts of their breeding range. The increasing number of nests is due primarily to discovering old nests rather than new nest construction.

Year	Known Nests	Observed Nests	Active Nests No.	%	Successful Nests No.	%	No. of Young	Young Per Nest
1968	73	56	40	71	13	32	19	1.5
1969	89	69	49	71	23	47	50	2.2
1970	99	71	52	77	28	54	48	1.7

The osprey population on the Chippewa Forest is closely watched by the Forest Service. This bird is fast disappearing from its former range. Osprey nesting success on the Chippewa was higher in 1970 than in previous years.

It is impossible for us to imagine anyone shooting a bald eagle. Yet this is probably the main cause of mortality. Records kept by the Fish and Wildlife Service show that 70 percent of dead eagles examined had been shot. What a testimonial to our forebearers who selected the eagle as our National Emblem some 200 years ago! Sure, there is a \$500 fine as provided by the Bald Eagle Act of 1944, but it takes more than laws to protect a large, vulnerable bird like an eagle. It takes an understanding and appreciation of the freedom, wildness, and beauty that somehow makes a man stir

inside when an eagle sails overhead and calls his defiance. Some people may be satisfied to see this sight on the tail side of a quarter. Jack and I would rather see the real thing.

I have been "eagle-watching" here for 7 years now and observe 150 to 200 of these birds every year at their nests. Each time the thrill is just as great as the last. They are truly magnificent! I like Al Grewe's description of the bald eagle — "strong, swift and majestic, defier of the storm and king of the birds, the undisputed ruler of the sky and the incentive to valor, the pledge to victory, and the emblem of freedom." That about sums it up.

GREAT GRAY OWLS

Photographs by Dalton Muir



Night photograph of male offering female a Red-backed Vole, a small, mouse-like rodent found in spruce woods. Note the male's long claws. Although large birds, Great Gray Owls feed primarily on small mammals. When handling food the feathers at the base of the bill are spread, thus keeping them out of the way and clean.

nesting near Roseau

Robert W. Nero

My acquaintance with Great Gray Owls began with a visit to an active nest at The Pas in west-central Manitoba in 1968, this being the third nest known for this province. The following fall and winter an unusual number of Great Grays appeared in extreme southeastern Manitoba and many were reported in Minnesota.

A year later, although smaller numbers were observed in the same area of Manitoba, increased numbers were reported in adjacent Minnesota (Nero, *Blue Jay*, 27: 191-209, 1969; *Blue Jay*, 28: 72-73, 1970). A winter concentration of Great Grays in black spruce and tamarack bogs near the Canadian border about 8 miles north of Roseau, Minnesota, led us to make contacts with several residents in that area. This resulted in the discovery of an active Great Gray Owl nest in the spring of 1970, the second nest of this species known for Minnesota. This nest was located about a mile south of the U.S. customs station on Highway No. 310, and about 5 miles east of the place where the first Minnesota nest was discovered.

The latter nest was found on April 4, 1935, by Henry Halvorson, who resides in Roseau and who still vividly recalls the incident. Mr. Halvorson sold the nest and its contents of three eggs for \$3.00 to Mr. P.O. Fryklund, who submitted information on this nesting (and the nest and eggs) to suitable authorities. News of this earlier nesting was reported by Robert E. Turner (*The Flicker*, 7:17, 1935) and by Dr. T.S. Roberts (*Journ. Minn. Ornith.*, 1: 65-66, 1936).

Fryklund had found evidence in 1926 suggesting that Great Gray Owls bred in this locality. The occurrence of a second nest 35 years later in the same vicinity, plus the appearance here of Great Gray Owls over many years, suggests that this area is within the regular breeding range of this species. If

and when small mammal populations are high, Great Gray Owls may occasionally nest here in suitable habitat, perhaps especially after numbers of owls become available during winter invasions from the north. The possibility of a small permanent population seems remote in view of the number of residents who have not previously seen the bird. The drainage of cedar swamps, extensive cutting of spruce stands, increased motor traffic, and increased shooting pressure are probably factors restricting its occurrence as a regular breeding species in this region.

At least one extra owl, judged to be a male, was observed less than a mile south of the present nest site on June 3, 1970, thus suggesting that others may have been resident during this period. Our birds were seldom seen more than a half-mile from the nest tree, and if the nest site had been only a mile back from the road, they would not have been observed. The successful nesting of a few scattered pairs in the abundant available habitat in this region could result in the appearance of concentrated numbers of birds in winter in areas where small mammals are abundant. We believe that freshly logged areas, where prey species would be vulnerable, may be especially attractive feeding areas.

Inasmuch as the Great Gray Owl usually depends upon nests built by other species, the availability of nests (and nest sites) may be another limiting factor. With this in mind, we have already constructed and installed two well-hidden nests in the general nest area, one on each side of the international boundary! It will be of considerable interest to see whether these nests are occupied in the next nesting season.

Our earliest visit to the nest area was made on April 11 and 12, 1970, following

reports of eight live owls seen at one time along a two-mile stretch of road south of the U.S. customs station on April 1 by Dr. H.T. Dirks of Winnipeg. Dr. Dirks found two dead owls here on April 4, and we found the remains of seven others in this same area over the nest several weeks. A conspicuous nest 40 feet up in the top of a tall tamarack tree about 100 yards from the highway in this recently logged spruce stand attracted our attention on our first visit, but we didn't think there was a chance that this nest would be used. However, the nest may even have been in use at the time of our first visit, for Clarence E. Nordstrom later reported seeing a bird sitting in the nest in mid-April, about the time egg-laying must have begun.

We verified the identity of the nesting bird on May 2, when we found the female brooding on the nest in full sight of the highway, watching passing vehicles with no apparent concern. Between then and July 29 we spent 22 days at the nest site. Large black spruce trees had been cut down within 10 feet of this particular tamarack, and dead Great Gray Owls were found within 50 yards of the tree.

Because of the conspicuous location of the nest, and because of the number of owls that had been killed in the immediate vicinity, we felt that publicity should be withheld until the young had left the nest. Accordingly, and in agreement with Dr. Dwain Warner and others at the Bell Museum of Natural History in Minneapolis, the exact nest location was not revealed. Roseau area residents and particularly staff at the Canadian and United States custom stations assisted in maintaining a relatively silent vigil. The successful fledging of three young, as well as the wealth of photographic materials that were obtained, will hopefully be sufficient recompense for those bird watchers who were not invited to visit the nest site.

In brief, egg-laying in this nest evidently commenced in mid-April; on May 13 the female appeared unusually restless, and we guessed that hatching was then in progress; by May 18-22, four young had hatched from five eggs. The fifth, unhatched egg was apparently eaten by the female on May 22. The brood of four young left the nest on or about June 8; one of the four young (not the youngest one) disappeared at this time, but the remaining three were seen within a quarter-mile of the nest tree up to our last





The female (on the left) about to take a vole from the male. By this division of duties, the female is enabled to keep the eggs and young warm in spite of low temperatures, for she need not even leave the nest.

day of observation on July 29. At that time they were still in the company of at least one of the parents, presumably the female.

The growth-rate of the young was astonishing, progressing from helpless, white, fluffy nestlings when first observed on May 16 to husky, aggressive nest-mates threatening to shoulder each other out of the nest by June 3. Although apparently less than three weeks old when they left the nest (which simply disintegrated) by June 9, the two largest owlets were capable of ascending slanted tree trunks, flapping their small wings and using their claws and bills like parrots to climb up to heights of 15 to 20 feet.

By June 28, the young had reached mature size; although they still bore some downy plumage over much of the upper parts of their bodies, their tails and wings appeared full-sized, and they could fly fairly well. Their head and body size early approached that of the adults, growth of the mass of large feathers that surrounds the head and neck being the only feature required to complete their appearance as Great Gray Owls.

The tameness of the adults, as reported by nearly all observers, is one of the

remarkable aspects of this species. On May 16, Dalton Muir, wildlife photographer and conservationist who erected a 40-foot observation tower and blind beside the nest tree, discovered that no amount of disturbance, including climbing up the tree to the nest, could move the brooding female off the nest. Floodlights at night, a mounted Great Horned Owl pushed by us to the edge of the nest, day-long rain — nothing interrupted the pattern of her constant attentiveness to the nest and its contents. Frequently, observers working in the open on top of the tower had difficulty attracting the attention of the female, even in getting her to open her eyes, and we all felt that a kind of rapport had been established with this bird.

Later, when we handled the fledged young for banding and photography, she often came to perch beside us. On one such occasion, I captured her by hand, had her banded and released, and a few minutes later she returned again to perch not more than a foot or two from my shoulder, apparently unconcerned by our rude handling. On more than one occasion she even accepted a dead mouse, proffered on the end of a branch,

Female Great Gray Owl brooding young in nest 40 feet above the ground, mid-May, 1970, between South Junction, Manitoba and Roseau, Minnesota. The large round head, concentric rings about the eyes, white "bow-tie", and lack of ear-tufts identify this species.



and either ate it herself or fed it to her young. Her concern for the young dominated her behavior — having brooded eggs and young almost 24 hours daily for two months, leaving for a brief period only once a day — she remained vigilant and attentive to the fledglings.

Under provocation, when the young on being handled became highly disturbed, the female attacked us aggressively, and we had to be careful to avoid being hurt. It was clear that any predator attempting to take the young would be subjected to considerable harassment. Her attacks appeared to be directed to us not as individuals, but as targets for aggression elicited by distress calls and behavior of the young. Clearly, persons working with Great Gray Owls should not be led into false assurances of safety by the apparent trust for man shown by this species.

The male's role appeared to be confined entirely to bringing food, chiefly red-backed and meadow voles in this case, to the female and to the young. The female received food from the male at the nest or nearby, day and night, but the main feeding periods were in the early morning and late evening. On rainy days the male often hunted and brought food throughout the day.

We never saw the female catch a mouse, though on rare occasions she showed considerable interest in their movements on the ground beneath the nest, in which case she would raise her head high and intently peer down over the edge of the nest. The energy spent by the male in hunting for himself, for the female, and for the growing young must have been considerable, but there was an abundance of voles in the vicinity and most of the male's hunting took place within a half-mile or less of the nest tree.

Most remarkably, during the nestling stage and thereafter, the female showed a distinct solicitude for the fourth and youngest member of the brood, a bird so much smaller than the others that at first we were not sure it would survive. That it did was owing to the special care given by the female. On one occasion after they had left the nest, for example, the female snatched a vole away from the male just as he was about to feed it to one of the larger young, and then she carried it off and fed it to the smallest youngster. As late as July 29, when we last visited the area, all three young still

following a bird assumed to be the female, and doubtless they were still being fed.

The variation in vocalizations of this species, in both the adults and young, in loudness, tone and pattern indicates a considerable vocabulary and merits further study. This aspect, along with other details of this nesting, will be reported elsewhere. Bird lovers should know, however, that a remarkable record of Great Gray Owl calls was obtained at the nest site by Dr. William W.H. Gunn on the night of May 13, from 7:30 p.m. to 1:00 a.m. Playbacks of the recordings brought about an increased hooting and eventually a seemingly endless bout of calling, apparently between two males, took place.

On that dark and rainy evening and night in the Boreal Forest, we heard sounds from three species of frogs, one or two toads, Whip-poor-wills, numerous Common Snipe, White-throated Sparrows, Robins, Barred Owls, Sawwhet Owls and even Sandhill Cranes, which were apparently nesting nearby. Throughout this medley our attention was held by the emphatic, sonorous hooting of Great Gray Owls, calls that echoed across the dark bog. Our satisfaction lay in the realization that through modern sound recordings something of the spirit of that night in the northern forest, some awareness of the Great Gray Owl as a significant part of this diminishing environment, could be shared forever with countless others.

For our enjoyment of these owls, for the photographs and motion picture films still to be released, for the information contained herein, and for other services we are indebted to many: United States and Canadian customs and immigration officers Clarence E. Nordstrom Pierre J. Beaudry, Richard M. Norman, Raymond G. Hobbs, Harold J. Oelslager and William J. Federer; photographers Robert R. Taylor, George Cotter and Dalton Muir, (the latter spent up to 20 hours per day in his blind); Ray Kemp, Gordon G. Graham, Walter Urbanski, Larry J. Bidlake and other staff of the Manitoba Department of Mines and Natural Resources; William S. Adams, Editor, The Roseau Times-Region; Dr. H.T. Dirks; Herbert W.R. Copland, Al Schaefer, Alan Miller, William Preston, and surely some others. The Manitoba Museum of Man & Nature, Winnipeg, initially supported our studies. 546 Coventry Road, Winnipeg 2, Manitoba.

banding Redpolls and Siskins at Fargo, N.Dak.

By O. A. Stevens

Unusual numbers of Common Redpolls and Pine Siskins were trapped at Fargo, winter and spring of 1970. The results are meager and puzzling but may be of some use. The work reported here was done at the residence of Dr. Georgie Burt with much encouragement and help from her. Her house is at a busy street corner. Large spruce trees in the yard may have been important in attracting the birds.

Feeding was ample. The chief food used by these species was *Quizotia abyssinica*, a small, black, oily, seed related to sunflowers. The latter were available but were not used unless broken. When the supply of *Quizotia* ran low, canarygrass seed was used. The birds took this, but not as eagerly. The redpolls and siskins seemed completely baffled by a light snow and made no attempt to scratch.

Trapping was mostly with a two-cell Potter trap bought from the Western Bird-banding Association many years ago. A day's catch would run five or six birds. They seemed adverse to going in. Usually they sat just outside and reached what seeds they could, often flying away. A small, cylindrical feeder was nearby. When this was removed and replaced by the trap, the birds often hovered before it and went to the ground. They often hopped around on the trap and seemed to have difficulty finding the doors.

In early spring, two six-celled traps were added, one with feed, one with water. These had some success, but the Potter trap remained the chief standby. Trapping was begun February 5 and continued until June 1. Total number banded was 298 redpolls, 247 siskins. The redpolls had a total of 50 repeats for 31 birds, the siskins 81 for 49. About 15 birds banded by J. F. Cassel, nearly a mile distant, were taken. One siskin died in hand, and one was found dead. Several redpolls were killed in a trap by a Sawwhet Owl and by a Northern Shrike at Dr. Cassel's traps. He banded during the same period 347 redpolls but only 20 siskins. Of our redpolls, 28 visited his trap,

most on April 12-19.

The day-to-day record seems to give little information. The largest number of redpolls was banded April 3 to 5 (29); not many of these were retaken. The last one banded was on April 25.

The case of the siskins is somewhat different. A few were banded, one to three each day (none between February 14 and 22), with large numbers on April 18 (8), 25 (15), 26 (8), and 28 (19). There were many repeats after April 23. We thought a group might be staying to nest. A pair had nested a few doors away in the same block 4 or 5 years ago. Occasionally, at the traps, a siskin would work at some string that had been provided, sometimes quite vigorously. I put some pieces of red yarn in the trap, but they seemed to be ignored. Four different birds repeated on May 28, one of which had been banded on February 8. One was banded on May 31 (next on May 24) and repeated June 1, after which they all seemed to have disappeared.

One bird was taken on February 8 and 13, which had been banded April 5, 1969. We thought if there was one return there should be a group, but no others appeared.

Thirty years ago I was banding around 1000 birds per year with several traps in a different location. From 1942 to 1952 I banded 24 siskins, but no work was done in winter and no suitable arrangements were available. Of those, 17 were October 11-17, 1942, when they apparently were attracted by a nearby birch tree.

I used to consider siskins as ordinary transients and recorded them (Flicker 22:90-104) May 9-23 and Oct. 23-Nov. 1. They seemed to appear regularly when the first dandelion fruits were ripe. Whether they have changed their habits is hard to say. Certainly we never had so many before. I had not banded in winter until 1964, when we banded 224 crossbills, 180 siskins, and 52 redpolls. In 1966 we had 30 redpolls and 2 siskins; in 1969, 59 redpolls and 7 siskins.

Kim R. Eckert

Baird's Sparrows in Clay County

On May 23, 1970, Paul Egeland and I were birding on the virgin prairie tract just southeast of Felton in Clay County. It was cool and overcast when we arrived about 9 a.m. We walked south and west from the quarry for a considerable distance without seeing anything significant until we arrived at the far western end of the prairie tract. There we found a Sprague's Pipit doing his "skylarking" display, and a little farther down we saw two male and one female Chestnut-collared Longspurs, the female flushing from almost underfoot as if from a nest. Both these species are almost never seen in Minnesota except at this spot, where they seem to occur annually; the activity we observed suggests that both species may be nesting here.

After finding the two species we had come for, we started back for the car. But before we had gone far, we both heard an unfamiliar song that suggested R. T. Peterson's description of the Baird's Sparrow song. We had been reading up on this song before arriving that morning, remembering that 2 years ago Ron Huber had a Baird's Sparrow singing at this same spot. The song we heard consisted of four to five light zips followed by a soft zeeee on a lower pitch: in volume and quality very much like a Savannah, but with a different and distinctive pattern.



Without difficulty we tracked the bird down, expecting to find an elusive, short-tailed sparrow with a distinct necklace of black streaks across a buffy breast. But what we found was a relatively large sparrow sitting conspicuously atop a weed, showing no distinctive field marks, and singing his distinctive song. The bird was not shy and allowed us to approach him fairly closely before flushing. After this, however, the bird became more elusive and harder to find with each succeeding flush, and it was difficult to see any field marks on him.

His breast and head were perfectly nondescript, but once I caught a glimpse of what appeared to be an ochre crown stripe as I once looked at the bird from the back. But Paul did not see this (nor could I) when we looked from the front, and we began to think after awhile that maybe this was just a Savannah singing a version of his song we had never heard before, since we could not see any ochre crown stripe from the front, and since the breast was only randomly and lightly streaked, and not with any black necklace.

The bird did not look like a Savannah, and that song was certainly distinctive, so after several flushes, glimpses, and debates we finally agreed we had a Baird's Sparrow. But as we began to walk away we suddenly heard two more Baird's Sparrows singing! This we could not believe, not one but three singing males! Our only possible conclusion at that point was to admit reluctantly that we must be hearing just Savannahs with an odd song. But since we didn't want to accept this conclusion, we deliberately started stalking the other singers.

We located one sitting in clear view atop a weed, and I approached from one side and Paul from the other, both of us getting excellent front and side views. But what we made sure of primarily was that the song we were hearing came from this bird, since we

believed that we may have been hearing Baird's but looking at Savannahs, which were definitely present at the time. But we finally saw that this bird was the one doing the singing. Unfortunately, however, this bird looked even more nondescript than the first one.

I said to Paul, "No doubt about it," thinking that I was looking at a Savannah, and he answered, "that's right, no doubt about it." But it turned out that Paul was thinking that there was no doubt about it's being a Baird's! I thought that we were experienced birders, but this bird made us rank amateurs! Finally the bird turned around, and at a distance of about 20 feet we both clearly saw the dark ochre crown stripe, and we knew these were definitely Baird's.

Before leaving the area we heard at least two more singing males, making a total of five birds. With such numbers and with such persistent singing, we suspect that at least one pair may be nesting there. I do not know of any recent nesting of this species in Minnesota, nor anyone who has seen more than one bird at a time. This is not surprising since, as I have described, the Baird's Sparrow is extremely difficult to identify.

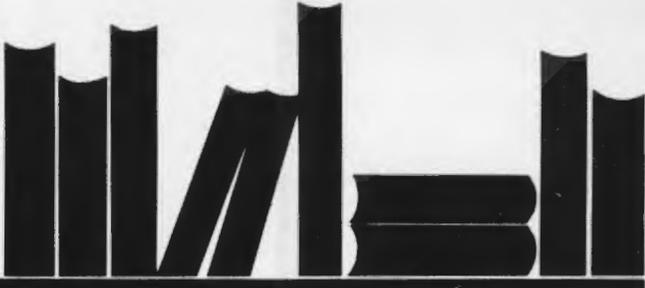
The song is certainly diagnostic, but if the bird is not singing, look for the ochre crown stripe, which shows up well only if the bird is viewed from the rear. This stripe apparently widens towards the back of the head so that it can be seen, but it is so narrow in the front that it becomes difficult to see from that angle. As I mentioned earlier, the birds we saw were lightly and randomly streaked below, so apparently the black necklace of streaks is not a reliable field mark. Needless to say, extreme caution should be used when identifying this species, especially when confronted with fall migrants, immatures, or non-singing birds.

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BOOK REVIEWS



DUCKS OF THE MISSISSIPPI FLYWAY. Paintings by Ken Haag and Ernest Strubbe, text by John McKane. North Star Press (St. Cloud, Minn.) 1969. vii plus 56 pp (27 in full color).

"Beautiful pictures and lots of them", is the way most people react when they first see this book. Most of this volume consists of pairs of pages, the page on the left telling about a species of duck, the facing page on the right picturing it in a full-page, full-color painting of professional quality. You will especially like this fact that text and illustration for each species are together.

Not only are the pictures good, but the text is well-written; it is brief and emphasizes just the things that you are most likely to want to know. Persons who live in and near Minnesota will also like the fact that this book covers all those species, and only those species, that occur here.

The text covers all 31 species of ducks that have been found in Minnesota, and 29 of these are pictured in color. In addition, text and color illustrations also cover the Common Loon and the American Coot (and the book makes clear that these two are not ducks). In a very few instances two or three species have been dealt with on one pair of pages. Much more often a species has a pair of pages to itself, and the painting shows the species flying, swimming, and standing. Plumages are those of spring, except the Oldsquaw, which is shown in winter garb.

Painters Haag and Strubbe, professional artists, both are prominent MOU members and have been frequent contributors to this magazine — Haag with paintings and articles, Strubbe with bird photos and articles. John McKane, author of the text, is the esteemed editor of Minnesota's *The Conservation Volunteer* magazine. Despite the book's title, these Minnesota naturalists have given the book a strong Minnesota emphasis; but it will be useful all along the Mississippi Flyway and in nearby states.

Each page of text names the species and gives some of its obsolete names (which I think should be forgotten now). Then follow paragraphs titled "Field Notes", "Field Marks", and "Range". For about half the species there are maps showing main breeding range — a valuable addition.

The frontispiece is a map of the Mississippi Flyway, and another page diagrams the external features of a duck. Still another page shows us in silhouette the differences between dabbling ducks and diving ducks (but oddly, nowhere in the book are we told how the 31 species fit into these two categories). In the whole book I find only two or three minor points that I might question.

All in all this is an excellent book, particularly for Minnesota birders. R.E.T.

THE BOBWHITE QUAIL: ITS LIFE AND MANAGEMENT by Walter Rosene, Jr. (Rutgers University Press, 1969) 418 pp, illus. \$20.

Librarians, birders, and gunners must welcome this up-to-date volume on Bobwhite Quail, for I believe it is the first big book devoted entirely to this most charming species since Stoddard's 1931 Monograph.

Much has been learned about bobwhites during these past 40 years, and Mr. Rosene, who is a good writer, has combed the technical literature thoroughly and done a good job of condensing this information and serving it up to us in a form that is both interesting and easy to read. The author spent 30 years as a government biologist studying bobwhites in the South, plus 3 years writing this book, and the book shows it. Wisely, he has put many facts that may not interest some readers into a series of appendices at the end of the book — though I liked even these appendices. The type, printing, paper, and binding are excellent.

There are 65 black-white photos, 5 color plates, 2 maps, 3 diagrams, notes, and an index.

In spite of its many good points, the book may disappoint you if you are primarily a birder, naturalist, or ecologist; for clearly Rosene is primarily a gunner and game manager. He certainly loves bobwhites, but mostly as flying targets. Most of his experience is in Alabama, so the book is mostly about bobwhites, their management,

and hunting in the Southeast, mainly on large plantations. The author recommends that conflicting species are to be controlled, and bobwhites are to be made to thrive by tampering with the environment — through burning off forests, for example.

The last chapter is titled "What Lies Ahead," and by the time you have read that far you just know that the chapter will be about the future of bobwhite shooting more than about bobwhites themselves. R.E.T.

where and how to find the

Yellow-crowned Night Heron in minnesota

By Fred Leshner



Pick up Highway 61 anywhere between the Twin Cities and La Crescent and drive to La Crescent. At the stoplight on the south side of La Crescent, the only light currently in existence in La Crescent, turn left or east on 61 toward La Crosse and drive about one mile, until you see a small sign indicating the "Shore Acres Road," and turn left. Beware the west-bound lanes as you cross them.

Traffic is heavy here. After you cross the west-bound lane drive slowly, looking down the steep banks at the swamp on either side. The herons may be on either side, but especially on the left at the first bend in the road. Continue on this portion of paved road until you are returned to Highway 61, about one-half mile. Do not turn north or left on the road that intersects with the road you are on. The heron has nested in the woods on your left at the intersection of the road you are on with the left turn road.

After you return to 61 you may wish to circle the route again.

As you return toward La Crescent, pull off on the shoulder where there are currently no posts or guard rails on the north side of Highway 61. Walk up on the embankment and scan the marsh to the north for Common Gallinules, Common Egrets, and Yellow-headed Blackbirds.

If it is autumn or even August, buy apples at one of several apple stands in La Crescent, and ask where to find the La Crescent dump. From there you will find entrance to a glorious example of Mississippi bottomland. Behind the dump may be found the Prothonotary Warbler in nesting season. I have also been tail thumped in this bottomland by the American Beaver.

The Yellow-crowned Night Herons may be found resident between early May and late September. In August and September you will see a weird-looking gray spotted bird bigger than a Green Heron but smaller than a Great Blue. This is the immature Yellow-crowned. He may still be in immature plumage next spring.

If you have questions or problems, call Fred Leshner in La Crosse, 783-1149. 509 Winona Street, La Crosse, Wis. 54601, Sept. 15, 1970.

the 1969 christmas count in minnesota

by: Robert B. Jansen

There were 23 Christmas counts taken in Minnesota from December 20, 1969 to January 3, 1970. There were no new species added to the all time Christmas count list for the state but with this comment the similarity with other counts ceases. Several new and significant records were set. The total species recorded, 103, set an all time high record, the first time more than 100 species have been seen, a total of 51 species for one count, at Afton, is also a new record. This is the first time any single count has gone over 50 species. The total number of individuals, 70,555 is also a new record.

One of course, wonders why these new records were set. Were there more birds, more people, better observers or more territory covered? These are of course, difficult questions to answer from the data that is submitted with counts.

Some of the more unusual species recorded were the Red-necked Grebe, Gadwall and Redhead. For these three species it was only the second time they had been recorded on a Christmas count in Minnesota. The Horned Grebe was recorded for the third time. Other very unusual waterfowl recorded were the Whistling Swan, Pintail, Green-winged Teal, Ring-necked Duck, Canvasback and Ruddy Duck. The Greater Scaup was reported at International Falls but there were no supporting details to verify this observation. The Mockingbird was recorded at two localities, Willmar and Cottonwood, and for the second time, a Myrtle Warbler was recorded. The first was recorded on the Excelsior count in 1967.

Concerning numbers it is fantastic when one considers the fact that 16 Eastern Bluebirds were seen on four separate counts. 1,600 + Pine Siskins, 2,800 + Blue Jays, 2,100 + common Crows and again it was a Common Redpoll year with 8,000 + recorded. The jump in numbers over 1968 in Pine Grosbeaks, Purple Finches and both

species of crossbills indicates the erratic nature of these species. The number of Starlings nearly doubled over the last year and the number of House Sparrows increased by over a third. Maybe observers just counted these species more carefully than in other years but the dramatic increase in Starlings is probably due more to a booming population of this species.

Some comments must be made about two species recorded on the Fergus Falls count. Twelve Field Sparrows were recorded; this must be due to confusion with the Tree Sparrow. No supporting details were given with the report. Also, nine McCown's Longspurs were recorded, again with no details. It would be highly significant if this observation were correct but this species has not been recorded in Minnesota since 1900 with one possible exception. This must surely be confusion with the Lapland Longspur and for this reason this record was listed under the Lapland Longspur in the chart.

Concerning the Field Sparrow, one observation was received from Winona, again without details but this record at least seems plausible considering the locality, the fact that Tree Sparrows were recorded and that only one bird was seen.

Congratulations to Afton for a fine count and the number of species recorded. Also special honors go to Kim Eckert and Paul Egeland for their exceptional counts at Colledgeville and Cottonwood. Several significant and interesting records were contained in these counts.

Coverage of the state in the counts was good but significant gaps still exist in the northwest, southwest and southcentral parts of the state. Again, as I reported last year, no count was received from Rochester. It is a shame not to record the wintering geese and other waterfowl from this area. No count has been taken in Rochester for at least three years. — 14321 Prince Place, Hopkins, Minnesota.

	Afton	Anoka	Bloomington	Cedar Creek	Collegeville	Cottonwood	Crosby	Duluth	Excelsior	Faribault	Fergus Falls	Hibbing	International Falls	Little Falls	Mpls. (North)	Moorhead	Red Wing	St. Paul	St. Paul (N.E.)	Wabasha	Walker	Willmar	Winona	Total
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Red-necked Grebe							2																	2	
Horned Grebe							1																	1	
Whistling Swan																								1	
Canada Goose				3				101	4	328														444	
Mallard	42	31	4354	67			11	1003	12	757			6	432		477	327	8	35	310			86	7950	
Black Duck	5		3	3				13						2		50	1			7			6	90	
Gadwall								6		2														8	
Pintail																1								1	
Green-winged Teal																1							2	2	
Wood Duck		1						2		2				1		2	7							15	
Redhead										1														1	
Ring-necked Duck								1																1	
Canvasback										1														1	
Greater Scaup												4												4	
Lesser Scaup										40													1	41	
Common Goldeneye	43	23	101		144		19	2		160		59	5	99		17	127		20					817	
Bufflehead			1				2			2							4							9	
Oldsquaw							10																	10	
Ruddy Duck								1																1	
Common Merganser	11		19							2										6				38	
Red-breasted Merganser							4																	4	
Goshawk		1	1		1														2					5	
Sharp-shinned Hawk									1															1	
Cooper's Hawk			1																1				2	4	
Red-tailed Hawk	7		1				1	1								4	7	3	2				14	40	
Red-shouldered Hawk																				1		1		2	
Rough-legged Hawk	1		1							1											1		1	5	
Golden Eagle																								1	
Bald Eagle	3	1	2																	24				30	
Marsh Hawk										1														1	
Sparrow Hawk	1		3		1			1		2				2		3	1	4						18	
Ruffed Grouse	6	1			3			9			1	1				2	12	1		5	1			42	
Sharp-tailed Grouse										1														1	
Ring-necked Pheasant	109	3	132	7		3	25	145	108	3			3	29	4	119	210	1			3	4		908	
Gray Partridge										7														7	
American Coot									1	3													32	36	
Killdeer																		1						1	
Common Snipe	1		3						7								1	1					2	15	
Herring Gull			19				1520										12							1551	
Mourning Dove	12			1	2		1	11						1		9	19	45	2				8	111	
Screech Owl	1		3													1	1							6	
Great Horned Owl	1			2	4		1	2	1	3				1			1	1				3		20	
Barred Owl	1			1																				1	
Short-eared Owl										1												1		2	
Belted Kingfisher	2		2													2	3		1					11	
Yellow-shafted Flicker	8		2			6	3	1	1	1						3					5			32	
Pileated Woodpecker	12	1	5		3			6		1							1	7						40	
Red-bellied Woodpecker	19	1	10		1	2		7			1	1				4	2	23	10				20	100	
Red-headed Woodpecker	10			1	1			3	1							5	1	8	3					14	47
Yellow-bellied Sapsucker	1				1																		1		3

1969 CHRIS

BIRDS COUNT

Hairy Woodpecker	61	2	17	2	10	7	5	6	53	2	1	12	5	4	10	1	7	13	56	4	12	6	24	320	
Downy Woodpecker	79	12	28	1	22	21	4	88	80	4	20	22	6	8	22	1	15	39	67	3	11	12	34	599	
Horned Lark					19	352											2							373	
Gray Jay								3				5	7											15	
Blue Jay	509	52	103	79	48	12	10	21	287	18	7	86	26	18	290		95	360	488	60	53	6	206	2834	
Common Raven								9	61			19	149											238	
Common Crow	463	8	77	24	41	5		23	56	20	1		1	2	30	1	23	84	290	57		7	43	1256	
Black-capped Chickadee	163	38	90	12	78	59	91	218	267	14	29	143	67	6	62	13	42	204	374	14	59	37	91	2171	
Boreal Chickadee								1				1												2	
Tufted Titmouse	8		4	1													1		3				4	21	
White-breasted Nuthatch	120	7	35	2	43	12	21	32	101	13	21	11	1	6	43	4	21	65	158	16	24	18	41	815	
Red-breasted Nuthatch	10	2	3	1	6	5	4	35	16	1		17	7	3			1	15	22	2	9	1	13	173	
Brown Creeper	7		6	1	37	13	1		10	2					10	1	2	8	4	1	3	7	2	115	
Winter Wren								1																1	
Mockingbird						1																1		2	
Brown Thrasher								1											1					2	
Robin	329		59					4	15					1	3		9	13	42			9	62	547	
Eastern Bluebird																		1	2	5			8	16	
Golden-crowned Kinglet	7			4	4				7	10							2	2				7	5	48	
Bohemian Waxwing								578			1										23			602	
Cedar Waxwing	244				1			23	93		56					23		31	251			6	67	795	
Northern Shrike	4	1	3		1			7									2	2			1		1	22	
Starling	693	9	1320	36	138	87	15	549	312	38	18	63	48	46	409	19	316	1472	151	108	4	11	467	6329	
Myrtle Warbler	1																							1	
House Sparrow	2192	50	786	206	1448	562		239	1954	24	750	174	48	476	1062	168	1961	2979	3081	705	23	335	2451	21,674	
Western Meadowlark																								1	
Red-winged Blackbird	2								3											34			63	102	
Rusty Blackbird						1			1									1	1					4	
Brewer's Blackbird																			3					3	
Common Grackle	3		4			1		1	4		3	4				5	2	3	3	7		8		48	
Brown-headed Cowbird											2										1			3	
Cardinal	116	4	41		12	8			108	8						11		57	54	78	33	2	5	154	691
Evening Grosbeak				5	8		116	82			1	106	249	50	6				19		281			923	
Purple Finch	225	30	37	21	60	1		25	75	4	132			1	19	23		22	53	203	8	5	9	1	954
Pine Grosbeak					3		26	319				268	266					6			43			931	
Hoary Redpoll	1				1			1										2						6	
Common Redpoll	196	377	232	146	1553	403	198	254	1631	60	118	96	159	229	334	25	224	347	1396	18	68	1	104	8169	
Pine Siskin	108	8	102		164	6		6	428	2	87	16			300		37	87	199	4	47	48	14	1663	
American Goldfinch	89	4	68		3	15		3	260	12				154		126	90	152	36				81	1093	
Red Crossbill	4						1	3	2		18	8			25		15	12	21			2		112	
White-winged Crossbill	8					7			27	3														45	
Rufous-sided Towhee																	1							1	
Slate-colored Junco	292	16	79	2	138	79	4	17	285	65	15	2	11		71		119	238	321	53		5	341	2153	
Oregon Junco	10		2		3	1		1	7	2					1		5	2			1		2	37	
Tree Sparrow	84	15	248	10	71	127			26	11					2		12	21	79	19	3		384	1112	
Field Sparrow											12												1	13	
Harris' Sparrow						2						1												3	
White-crowned Sparrow						1																		1	
White-throated Sparrow	1		1			1			1	1					2		1	2	4	1			3	18	
Fox Sparrow									1															1	
Song Sparrow						2												4					5	11	
Lapland Longspur						149					9													158	
Snow Bunting	1					344			1		274	55	126						12		32			845	
Total Species	51	27	42	20	40	34	14	44	47	27	42	21	21	17	32	12	35	49	45	40	22	26	46	103	
Total Individuals	6325	699	8008	559	4152	2297	505	4238	7399	439	2894	1110	1242	883	3466	240	3689	6856	7834	1585	711	553	4871	70,555	

the 1970 spring season /

Kim R. Eckert and Paul Egeland

Birders more than birds are affected by the weather, and in turn so are the seasonal reports. This year is no exception as we find it difficult to even file a consistent weather summary. Precipitation was well above normal at both Minneapolis and Fargo (almost 4 inches above at Minneapolis and more than 2 inches above at Fargo during the spring). But while temperatures at Minneapolis were slightly higher than average (1.8 degrees above in April and 1.2 degrees above in May), Fargo's temperatures were quite cool: 5.7, 2.9 and 3.7 degrees below average in March, April and May. Suffice it to say that the weather this spring was mostly nondescript (as was migration): extremes in temperature and precipitation were not very extreme.

Since Ron Huber retired it becomes necessary for each seasonal reporter to explain his style. We have omitted the commoner permanent residents and listed only counties for the less common residents. As a general rule you will find the three earliest arrival dates in the south, the two earliest arrival dates in the north, and where applicable the two latest departure dates for migrants. It's not that we have anything against northern observers or late dates, it's just that there are fewer observers in the north and that observers are more conscientious about noting early arrival dates than late dates.

Common Loon: early south 4-4 Winona TV, GES; 4-6 Wabasha WDM; 4-10 Dakota RG and Washington RHJ; peak 4-26 Duluth (42) JG; early north 4-12 Morrison LR; 4-15 Lake MMC.

Red-throated Loon: 4-17 Hennepin GES (good details); 5-7 Duluth (2) MMC; 5-26 Duluth MMC; only reports.

Red-necked Grebe: 4-13 Hennepin DB; 4-15 Hennepin GES, WL; 4-16 Hennepin CH; peak 4-21 and 4-26 Duluth (500) JG, MMC; early north 4-15 Duluth MMC; 4-16 Lake RK; 4-16 Duluth JG.

Horned Grebe: early south 4-10 Dakota RG; 4-11 Wabasha KE, PE; 4-13 Hennepin DB; peak 4-30 Duluth (2,000) MMC; early north

4-13 Morrison LR; 4-15 Duluth MMC; late south 5-12 Hennepin WL; 5-16 Swift BH.

Eared Grebe: 4-12 Nobles (2) HH; next 5-3 Lyon (3) KE, PE; 5-12 and 19 Duluth MMC; 5-29 Lyon (2) PE; only reports.

Western Grebe: early south 4-16 Hennepin CH; 4-26 Nicollet EB; 5-2 Stevens KH; early north 5-2 Marshall AR; also 5-28 and 30 Lake Harriet, Minneapolis GES, EJ, BL, WL.

Pied-billed Grebe: early south 3-22 Winona KE, PE; 3-28 Hennepin EB; 3-31 Olmsted HW; early north 4-6 St. Louis LM; 4-8 Duluth JG.

White Pelican: many reports: early south 4-6 Rice OR; 4-12 Lac Qui Parle DB; 4-18 Stearns MC; early north 4-25 Duluth KE, PE; 4-25 Marshall AR; peak 4-23 Jackson (500) LF; late south 5-18 and 19 Wabasha TV, WDM; late north 5-24 Clearwater KE, PE.

Double-crested Cormorant: early south 4-5 Nobles HH; 4-8 Wabasha WDM; 4-12 Lac Qui Parle (126) DB; peak 4-26 Clay (200) EA; early north 4-25 Duluth KE, PE; 4-25 Marshall AR.

Great Blue Heron: early south 3-12 Wabasha HW; 3-23 Nicollet LF; 3-25 Rice OR and Stearns MC; peak 4-11 Pope (200) BH; early north 3-31 Morrison JB; 4-5 Marshall AR and St. Louis NH, MMC.

Green Heron: early south 4-25 Nobles HH and Hennepin DB; 4-26 Chisago KE, PE; northerly reports: 4-27 Crow Wing JB; 5-2 Mille Lacs MI; 5-22 Marshall AR.

LITTLE BLUE HERON: 5-9 Heron Lake, Jackson Co., 1 adult, BL.

CATTLE EGRET: 5-20 Little Canada, Ramsey Co., 1 adult, BL, RG, Elizabeth Campbell, Harding Huber.

Common Egret: early south 4-5 Nicollet DB; 4-8 Wabasha WDM; 4-10 Goodhue KE; peak 5-16 Pope (200) BH; early north 4-18 Duluth JGH; 4-20 Marshall AR.

SNOWY EGRET: 5-10 Cottonwood, Lyon Co., PE, see Notes of Interest.

Black-crowned Night Heron: early south 4-11 Dakota JAH; 4-14 Hennepin VL; 4-15 Hennepin GES; peak 5-16 Pope (150) BH; early north 4-29 Marshall AR.

Yellow-crowned Night Heron: La Crescent, Houston Co., 5-16 (1) BL and 4-25 (4) FL; only reports.

Least Bittern: 5-13 Rice OR; 5-18 Marshall AR; only reports.

American Bittern: early south 4-11 Dakota EB; 4-14 Winona TV; early north 4-17 Marshall AR; 4-23 Mille Lacs MI.

Whistling Swan: early south 3-10 Olmsted HW; 3-14 Winona TV; 3-22 Wabasha KE, PE; early north 4-7 Duluth RL; 4-8 Duluth MMC, JG; peak 4-2 Wabasha (1170) TV; 4-4 Lac Qui Parle (400) KE, PE; late 5-16 Lac Qui Parle KE, PE and Wabasha BL.

Canada Goose: early south 3-9 Wabasha WDM; 3-14 Wabasha TV, 3-15 Dakota EB; peak 4-4 Lac Qui Parle (20,000) KE, PE; early north 3-22 Marshall AR; 4-6 Mille Lacs MI.

White-fronted Goose: 4-5 Lyon (70) KE, PE; 4-5 Sibley, 4-12 Lac Qui Parle, 4-26 Hennepin, DB; 5-2 Marshall AR; only reports.

Snow/Blue Goose: early south 3-15 Dakota EB and Wabasha (90) TV; 4-4 Lac Qui Parle KE, PE; early north 4-16 Duluth MMC; 4-22 Marshall AR; peak 4-5 Lyon (300) KE; late 5-3 Lyon KE, PE; 5-4 Wabasha WDM.

Mallard: peak 4-8 Duluth (1800) MMC, JG.

Black Duck: early south 3-22 Wabasha KE, PE; 4-7 Carver KH; early north 3-20 Duluth MMC; 4-6 Duluth JG; 4-7 Marshall AR; few reports this spring.

Gadwall: early south 3-29 Nobles HH and Scott RG; 3-31 Rice OR; early north 4-14 Marshall AR.

Pintail: early south 3-14 Carver KH (wintered?); 3-25 Dakota RG; 3-28 Dakota DB; early north 4-7 Marshall AR; 4-8 Duluth MMC, JG.

Green-winged Teal: early south 3-24 Dakota RG; 3-30 Houston FL; early north 4-8 Duluth MMC, JG; 4-11 Marshall AR.

Blue-winged Teal: early south 4-1 Hennepin EB; 4-5 Lyon KE, PE and Scott RG and Rice OR and Wabasha EB; early north 4-16 Mille Lacs MI and Morrison LR.

American Widgeon: early south 3-29 Scott RG; 4-4 Lac Qui Parle KE, PE; early north 4-8 Duluth MMC, JG; 4-16 Marshall AR.

Shoveler: early south 3-30 Houston FL; 3-31 Nobles HH; peak 4-11 Wabasha (400) KE; early north 4-8 Duluth MMC, JG; 4-9 Marshall AR.

Wood Duck: early south 3-25 Scott RG; 3-29 Hennepin EB; 3-30 Carver KH; early north 4-8 Duluth MMC, JG; 4-11 Crown Wing JB.

Redhead: early south 3-4 Wabasha WDM; 3-17 Dakota RG; 3-22 Winona KE, PE; early north 4-16 Marshall AR; 4-24 Duluth RL.

Ring-necked Duck: early south 3-15 Ramsey JJ; 3-17 Dakota RG; 3-8 Olmsted HW; peak 4-16 Carver (300) KH; early north 4-8 Duluth MMC, JG; 4-15 Duluth RL.

Canvasback: early south 3-7 Houston FL; 3-21 Olmsted HW; 3-22 Wabasha KE, PE; early north 4-15 Marshall AR; 4-24 Mille Lacs MI.

Greater Scaup: 10 reports: early south 4-4 Lac Qui Parle KE, PE; 4-5 Nobles HH; early north 4-8 Duluth MMC, JG; peak 4-29 Duluth (100) JG; late 5-28 Duluth MMC; 6-8 Lake (pair) JG.

Lesser Scaup: early south 3-1 Rice OR; 3-7 Houston FL; 3-22 Wabasha KE, PE, WDM and Goodhue RG; early north 4-7 Marshall AR; 4-8 Duluth MMC, JG; peak 4-5 Winona (1000) TV; 4-11 Wabasha (4000) KE, PE; late 5-31 Jackson HH and Duluth RL.

Common Goldeneye: late 5-10 Hennepin EB; 5-16 Stevens KE, PE; 6-2 Morrison LR; peak 4-8 Duluth (1500) JG.

Bufflehead: early south 3-21 Houston FL; 3-29 Nobles HH; 3-31 Dakota PE; early north 4-2 Duluth MMC; 4-7 Duluth JG;

peak 4-14 Anoka (270) BH; late 5-16 Stevens and Lyon KE, PE; 5-19 Duluth RL; 5-20 Duluth MMC.

Oldsquaw: 4-19 and 30 Lake RK; 5-5, 16 and 29 Lake JG; 5-24 Cook JJ; 5-29 Duluth MMC; only reports.

White-winged Scoter: all from Duluth: 4-25 (2) KE, PE; 5-27 (1) BL; 5-15 (24) and 5-28 (3) MMC; 6-1 (1) JG; only reports.

Surf Scoter: 5-9 and 12 Duluth MMC; only report.

Ruddy Duck: early south 3-30 Dakota RG; 4-5 Winona TV and Nobles HH and Sibley DB and Rice OR, JAH; early north 4-18 Morrison LR; 4-25 Marshall AR.

Hooded Merganser: early south 3-4 Hennepin WL; 3-21 Houston FL; 3-22 Wabasha KE, PE; early north 4-6 Duluth MMC; 4-7 Duluth RL.

Common Merganser: early north 4-7 Marshall AR; peak 3-1 Wabasha (150) TV; late south 4-23 Carver KH; 4-25 Wabasha WDM.

Red-breasted Merganser: early south 3-21 Houston FL; 3-22 Winona KE, PE and Wabasha WDM; early north 4-3 Duluth JGH; 4-9 Duluth JG; peak 4-30 Duluth (100's) MMC; late south 4-25 Hennepin DBC and Wabasha WDM and Clay EA.

Turkey Vulture: early south 3-17 Goodhue HW; 4-5 Wright EH; 4-8 Washington WHL; peak 4-24 Duluth (29) MMC; early north 4-8 Duluth MMC, JG; 4-13 Morrison LR.

Goshawk: 3-10 Washington WHL; 4-4 St. Louis BL, RG; only reports.

Sharp-shinned Hawk: early south 3-6 Wabasha TV; 3-19 Blue Earth HT; 3-26 Carver MM; early north 4-4 Morrison LR.

Cooper's Hawk: early south 3-6 Carver MM; 3-7 Winona TV; early north 4-8 Duluth MMC, JG; 4-9 Beltrami JM.

Red-tailed Hawk: early north 3-18 Duluth MMC; 3-25 Crown Wing JB; Krider's reported 5-8 Hennepin GES.

Red-shouldered Hawk: reported from Houston, Wabasha, Goodhue, Dakota, Ramsey, Hennepin, Chisago, Carver, Fillmore, Freeborn and Stearns; one northerly report 5-2 Mille Lacs BDC.

Broad-winged Hawk: early south 4-23 Rice JAH and Hennepin CH, WL; early north 4-3 Crow Wing JB (very early date, no details); 4-25 Duluth KE, PE; 4-26 Duluth MMC; melanistic phase reported: 5-3 Rice JAH, "cere yellow, tail banded as normal, rest of plumage totally dark slate."

Swainson's Hawk: 4-10 Dakota RG; 4-18 Jackson LF; only reports.

Rough-legged Hawk: late 4-23 Hennepin WL; 4-25 Aitkin RL; 5-2 Wright RH.

Golden Eagle: 4-2 Winona TV; 4-5 Nobles HH; 4-14 Marshall (5) AR; only reports.

Bald Eagle: many reports: a total of 11 immatures reported from St. Louis, Lac Qui Parle, Sibley, Houston, Meeker, and Wabasha (no more than two at a time seen at once); total of 19 adults reported from St. Louis, Mille Lacs, Lyon, Washington, Houston and Wabasha (maximum of eight seen at one time); birds with no age indicated also reported from Marshall, Duluth, St. Louis, Cass, Aitkin, Crow Wing, Rice, Scott, Chisago, Washington, Hennepin, Goodhue and Wabasha; maximum number: 3-1 Reads Landing, Wabasha Co. (19) WL.

Marsh Hawk: early south 3-7 Wabasha WDM; 3-17 Dakota RG; 3-17 Watonwan EK; peak 5-9 Marshall and Beltrami (16) GES; early north 3-18 Marshall AR; 4-4 Aitkin and St. Louis BL.

Osprey: 21 reports of 25 individuals: early south 4-11 Dakota JAH and Washington RHJ; 4-21 Scott GES; early north 4-16 Duluth JG; 4-19 Duluth MMC and St. Louis NH; also reported from Winona, Rice, Hennepin, Goodhue, Stearns, Lyon, Freeborn, Crow Wing and Mille Lacs; all but 4 reports were of single birds.

Peregrine Falcon: not a very encouraging year for this vanishing species; only report 5-28 Duluth MMC.

Pigeon Hawk: 4-11 Dakota JAH; 4-23

Duluth (2) MMC; 4-28 Mille Lacs (2) MI; only reports.

Sparrow Hawk: early north 3-15 Morrison PE; 3-18 St. Louis MH; 3-21 Mille Lacs JB; peak 5-3 Duluth (25) MMC.

Spruce Grouse: 3-7 Cook GES; 5-29 St. Louis NH; only reports.

Ruffed Grouse: reported from Cook, Lake, St. Louis, Clearwater, Beltrami, Mahnomen, Pine, Mille Lacs, Chisago, Sherburne, Morrison, Washington and Goodhue.

Greater Prairie Chicken: 3-15 Clay (9) EA; 5-23 Becker (20) KE, PE; Wilkin Co. 4-3 (37) RG, 4-18 and 25 (31) EA, 5-5 (22) LM; only reports.

Sharp-tailed Grouse: 3-21 Clay EA; 4-4 Aitkin (10) BL, RG; 5-16 Beltrami (1) RD; only reports.

Ring-necked Pheasant: reported from Goodhue, Ramsey, Wright, Hennepin, Wabasha, Cottonwood, Carver, Lyon, Watonwan, Blue Earth, Washington, Rice, Nobles, Duluth, Yellow Medicine and Chisago; peak 3-2 Olmsted (39) HW.

Gray Partridge: 4-25 Jackson (1) HH; "May" Nobles (several) HH; "present" Rice OR; "resident" Watonwan and Blue Earth EK; "permanent resident" Hennepin EB; 3-28 Lyon (2) PE; 5-10 Yellow Medicine PE.

Sandhill Crane: 4-11-25 Wilkin EA; 5-25 Anoka (2) RG; 4-9 Washington (2) WHL; 4-25 Aitkin (1) MMC, RL; "late April" Mille Lacs (2) MI; 4-10 (1) and 4-25 (26) Marshall AR.

Virginia Rail: 5-2 Nicollet KE, PE; 5-9 Cottonwood BL; 5-9 (20) and 5-16 Lyon KE, PE; no date Clearwater RD; only reports.

Sora: early south 4-26 Carver TH and Hennepin PF; 4-29 Hennepin GES; early north 5-12 Marshall AR.

Common Gallinule: 2 birds each on 5-9 and 5-16 Houston Co. FL, BL; only reports.

American Coot: early south 3-15 Winona KE, PE; 3-22 Goodhue KE; 3-27 Scott RG;

peak 4-11 Wabasha (3000) KE, PE; early north 4-10 Morrison LR; 4-14 Duluth RL.

Semipalmated Plover: early south 4-25 Houston FL; 5-2 Nobles HH and Jackson, Lyon EK, PE and Wilkin RG; early north 5-6 Mille Lacs MI; late 5-29 Duluth GES; 6-4 Mille Lacs MI.

Piping Plover: 5-2 Lyon KE, PE; 5-3 Rice KE, PE; Duluth: 4-30 RL, 5-20 MMC, 5-23 BL, 5-24 CH.

Killdeer: early south 3-7 Houston FL; 3-18 Rice OR; 3-20 Wabasha WDM; early north 3-20 Duluth JG; 4-3 Duluth MMC.

American Golden Plover: early south 4-29 Lac Qui Parle MM; 5-2 Lyon KE, PE; 5-2 Swift KH; peak 5-16 Stevens and Swift (700) KE, PE; late 5-29 Grant EB; 6-2 Mille Lacs MI.

Black-bellied Plover: 5-18 and 20 Duluth MMC; 5-23 and 31 Duluth RL; 5-27 Cook JP; 5-29 Grant EB; only reports.

Ruddy Turnstone: early south 5-5 Wilkin LM; 5-9 Lyon PE; 5-16 Lyon KE, PE; peak 5-29 Duluth (125) GES; late 5-29 Grant EB; 5-31 Duluth RL.

American Woodcock: early 3-28 St. Louis LM; 4-1 Duluth JGH; 4-9 Crow Wing JB; 4-10 Washington WHL; earliest reports from the north.

Common Snipe: early south 3-17 Hennepin GES, WL; 4-7 Nobles HH; early north 3-26 Mille Lacs MI; 4-8 Duluth MMC, JG; 4-15 Crow Wing JB; peak 5-2 Swift (32) KH.

LONG-BILLED CURLEW: 4-25 McLeod WL: "bird flying north, passed over car about 100 ft., car not moving, had good view of long curved bill and head".

Whimbrel: 2 reports: Duluth 5-12 (2) and 5-28 (4) MMC.

Upland Plover: early south 4-29 Watonwan EK and Dakota PE and Lyon HK; peak 5-23 Becker (15) KE, PE; early north 5-2 Duluth MMC.

Spotted Sandpiper: early south 4-3 Hennepin RG; 4-26 Goodhue KE, PE; 4-28

Lyon HK; peak 5-26 Duluth (25) MMC; early north 4-30 Duluth MMC; 5-2 Morrison LR and Duluth JG.

Solitary Sandpiper: early south 4-25 Rice JAH; 4-28 Hennepin EJ, GES, WL; 4-29 Lyon HK; early north 5-3 Duluth MMC; 5-4 Mille Lacs MI; late 5-22 Lake RK; 5-24 Lac Qui Parle DB.

Willet: 10 reports: early south 4-25 Lac Qui Parle (8) WL; 5-1 Houston FL; 2 northerly reports: 4-26 and 4-30 Duluth KE, PE, JG, RL; also reported from Sibley, Jackson, Lyon (8), and Dakota; more reports than usual.

Greater Yellowlegs: early south 4-8 Goodhue KE and Washington WHL; 4-11 Carver GES and Goodhue RG; early north 4-8 Duluth JG; 4-17 Mille Lacs MI; late 5-18 Mille Lacs MI; 5-22 Washington WHL.

Lesser Yellowlegs: early south 4-8 Goodhue KE; 4-9 Winona TV; 4-10 Wabasha WDM; early north 4-18 Marshall AR; 4-24 Mille Lacs MI; peak 4-25 Cottonwood (100) LF; late 5-24 Aitkin JB; 5-26 Duluth MMC.

Knot: 5-16 Duluth P. Getman, fide JG; 5-23 Duluth (3) BL, CH, WL, RL; only reports.

Pectoral Sandpiper: early south 4-5 Redwood KE, PE and Lyon HK; 4-6 Blue Earth HT; early north 4-24 Mille Lacs MI; late 5-18 Duluth MMC; 5-22 Mille Lacs MI.

White-rumped Sandpiper: early 5-3 Washington GES; 5-6 Lyon KH; 5-9 Lyon PE; late 5-30 Dakota EB; 5-31 Duluth RL; 6-1 Mille Lacs MI.

Baird's Sandpiper: 4-5 Lyon (8) KE, PE; 5-2 Wilkin RG; 5-9 Lyon HK; 5-16 Lac Qui Parle KE, PE; 5-24 Lac Qui Parle (6) DB; only reports.

Least Sandpiper: early south 5-2 Lyon, Jackson KE, PE and Washington GES and Lyon KH; early north 5-12 Duluth MMC and Mille Lacs MI; late 5-24 Dakota TH; 5-26 Morrison LR.

Dunlin: early south 5-2 Washington GES; 5-10 Lyon PE; early north 5-12 Duluth MMC; 5-16 Duluth P. Getman, fide JG; peak

5-23 Duluth (150+) CH; late 5-31 Cottonwood LF; 5-31 Duluth RL; 6-2 Mille Lacs MI.

Long-billed Dowitcher: 5-3 Lyon HK; 5-9 Lyon (2) PE; 5-9 Watonwan (25) BL; only reports will call note data.

Short-billed Dowitcher: 5-2 Rice (5) KE, PE; 5-3 Sibley (20) and Lyon (3) KE, PE; 5-10 Lyon HK; 5-16 Stevens, Lyon, Sibley, and Lac Qui Parle (20) KE, PE; only reports with call note data.

Dowitcher, sp: 9 reports from Washington, Rice, Duluth, Marshall, Mille Lacs, and Swift from 5-2 to 5-21; peak 5-16 Mille Lacs (37) MI.

Stilt Sandpiper: 6 reports: 5-2 Lac Qui Parle KE, PE; 5-8 and 16 Lyon KE, PE; 5-9 (12) and 5-10 (10) Lyon HK, PE; 5-24 Lac Qui Parle (4) DB.

Semipalmated Sandpiper: early south 5-2 Lyon KE, PE, HK; 5-12 Hennepin CH; early north 5-12 Duluth MMC; 5-18 Mille Lacs MI; late 5-31 Duluth RL; 6-4 Mille Lacs MI.

WESTERN SANDPIPER: 6-1 Onomia, Mille Lacs Co. MI (see notes of interest in June issue); 5-2 Swift Co (2) KH: "bill typical, thick and down droop, very rusty."

Marbled Godwit: early south 4-18 Lyon PE; 5-2 Meeker RG and Swift KH; peak 5-23 Becker (15) KE, PE; early north 4-24 Marshall AR; 5-4 Mille Lacs MI.

Hudsonian Godwit: 9 reports; 5-8 and 9 Lyon (5) KE, PE; 5-9 Jackson BL; 5-10 Lyon (7) HK; 5-16 Sibley, Stevens, and Lyon (20) KE, PE; 5-17 Rice RG; 5-24 Lac Qui Parle (3) DB; 5-21 and 28 Mille Lacs MI. A total of at least 33 individuals of this rare species.

Sanderling: early 4-25 Renville (50) WL; 4-26 Lyon HK; 4-30 Duluth RL; peak 5-23 Duluth (100+) CH; late 5-29 and 31 Duluth GES, RL.

American Avocet: 7 reports: 4-22 Lyon (4) HK; 4-25 Houston (2) FL; 5-2 and 9 Lyon (5) KE, PE; 5-9 Jackson BL; 5-10 Martin (6) Mrs. W. R. Luwe; 5-16 Sibley (2) KE, PE; at least 20, none last year.

Wilson's Phalarope: early south 4-20 Lyon HK; 4-24 Nicollet DB; peak 5-14 Lyon (400) HK; early north 5-4 Mille Lacs MI; 5-7 Marshall AR.

Northern Phalarope: 6 reports: 5-9 Lyon PE; 5-15 Clay EA; 5-22 Lyon HK; 5-24 Carver GES; 5-30 Lac Qui Parle (3) DB; 6-7 Mille Lacs MI.

Glaucous Gull: 6 reports: 3-2 and 4-30 MMC; 3-22 (3 imm) JG; 4-4 (1 ad) JG; 4-21 and 6-7 (1 imm) JG; all from Duluth.

Herring Gull: early south 3-3 Nobles HH; 3-22 Wabasha KE, PE, TV; 3-23 Dakota RG; early north 4-1 St. Louis NH; 4-5 Beltrami JM.

Ring-billed Gull: early south 3-3 Houston FL; 3-17 Nobles HH; 3-22 Wabasha KE, PE and Goodhue RG; peak 4-9 Wabasha (500) WDM; early north 3-27 Duluth MMC; 4-5 Beltrami JM.

Franklin's Gull: early south 4-5 Wright BH and Lyon HK; 4-7 Nobles HH; peak 4-21 Watonwan (500) EK; early north 4-7 Marshall AR; 4-18 Morrison LR.

Bonaparte's Gull: early south 4-6 Nobles HH; 4-8 Goodhue KE and Wabasha WDM; early north 4-18 Morrison LR; 4-24 Mille Lacs MI; peak 5-18 (800) Duluth MMC; late 5-28 Duluth MMC.

Forster's Tern: early south 4-13 Hennepin RG; 4-16 Hennepin GES; 4-18 Hennepin EB, BDC, WL, and Nicollet HT; only report north 5-13 Clearwater RD.

Common Tern: early south 4-16 Hennepin PE; 4-17 Ramsey JJ; 4-20 Hennepin WL; peak 5-22 Duluth (1,000) JG; early north 4-25 Morrison LR; 5-3 Crow Wing JB.

Caspian Tern: early 5-2 Mille Lacs MI; 5-9 Beltrami GES; 5-12 Duluth MMC; earliest in north; peak 5-26 Mille Lacs (37) MI; late 5-31 Duluth RL; 6-5 Mille Lacs MI.

Black Tern: early south 5-2 Lyon KE, PE and Carver TH, GES; 5-3 Hennepin WL; early north 5-13 Clearwater RD and Morrison LR.

Mourning Dove: early south 3-10 Hennepin

CH; 3-15 Goodhue KE, PE; 3-18 Wabasha WDM and Rice OR; early north 4-1 Aitkin RHJ; 4-8 Morrison LR.

Yellow-billed Cuckoo: 5-21 Hennepin GES; 5-26 Hennepin WL; 5-28 Wabasha KE; 5-29 Hennepin DB; only reports!

Black-billed Cuckoo: many reports: early south 5-18 Winona TV; 5-19 Hennepin GES; 5-20 Blue Earth HT; peak 5-24 Hennepin (16) EB; only report north 5-30 Lake RK.

Screech Owl: reported from Rice, Nobles, Olmsted, and Ramsey.

Great Horned Owl: reported from Wabasha, Goodhue, Washington, Hennepin, Carver, Rice, Chisago, Nobles, Redwood, Lyon, Stearns, Mille Lacs, St. Louis, Crow Wing, Cass, and Clearwater.

Snowy Owl: 3-16 Duluth MMC; only report.

Barred Owl: reported from Winona, Wabasha, Goodhue, Hennepin, Washington, Crow Wing, St. Louis, Clearwater, and Chisago.

GREAT GRAY OWL: unusual concentration near Pinecreek, Roseau Co.: 4-1 (8 along 1 mile of highway); 4-4 (2 shot); 4-11 (3 shot); Robert W. Nero, fide JG; amazing since none reported during the winter period.

Long-eared Owl: 3-11 Winona TV; 4-17 and 25 Olmsted HW; 5-13 Ramsey AW; no date Clearwater RD; only reports.

Short-eared Owl: 4-6 Nobles HH; 4-26 Lyon HK; 5-24 Marshall AR; no date Clearwater (4) RD; only reports.

Saw-whet Owl: 2 reports: 4-7 Washington WHL; 4-14 Clearwater (2) RD.

Whip-poor-will: only 5 reports: 5-3 Ramsey HC; 5-15 Goodhue KE and Clearwater RD; 5-17 Goodhue DB; 5-23 Pine BL.

Common Nighthawk: early south 4-24 Nobles HH; 4-28 Ramsey HC; 4-29 Cottonwood LF; peak 5-24 Crow Wing (200+) JB; early north 5-18 Duluth MMC.

Chimney Swift: early south 4-25 Nobles HH and Winona TV; 4-26 Goodhue KE, PE; early north 4-26 Clearwater RD; 5-8 Crow Wing JB.

Ruby-throated Hummingbird: earliest in north: 4-30 Crow Wing JB; 5-4 Duluth MMC; early south 5-8 Winona TV and Rice JAH; 5-9 Hennepin DB and Wright BH.

Belted Kingfisher: early south 4-3 Winona TV; 4-5 Rice JAH, OR; 4-7 Hennepin GES and Nobles HH; early north 4-8 Duluth JG, MMC; 4-9 Lake RK.

Yellow-shafted Flicker: early north 4-5 Marshall AR; 4-11 Cook JP and Crow Wing JB; peak 4-26 Duluth (200) KE, PE.

RED-SHAFTED or HYBRID FLICKER: 5-23 Agassiz Refuge, Marshall Co. KE, PE; face pattern not seen but red wing linings clearly noted.

Pileated Woodpecker: reported from Carver, Rice, Wright, Washington, Stearns, Ramsey, Hennepin, Blue Earth, Aitkin, Goodhue, Beltrami, Dakota, St. Louis, and Cook.

Red-bellied Woodpecker: reported from Wabasha, Goodhue, Stearns, Dakota, Hennepin, Chisago, Jackson, Olmsted, Washington, Ramsey, Wright, Carver, Winona, and Isanti.

Red-headed Woodpecker: early W. or N. 3-24 Crow Wing (wintered?) JB; 4-1 Aitkin RHJ; 4-27 Nobles HH.

Yellow-bellied Sapsucker: early south 3-9 Chisago FS (very early-wintered?); next 4-8 Goodhue KE and Hennepin DB, EB and Freeborn RJ; peak 5-2 St. Louis (30) JG; early north 4-6 Morrison LR; 4-10 Crow Wing JB.

Eastern Kingbird: early south 4-30 Wabasha WDM; 5-1 Hennepin JGM; 5-2 Scott GES and Winona JLM; early north 5-6 Crow Wing JB; 5-17 Mille Lacs MI.

Western Kingbird: early 5-3 Lac Qui Parle HK; 5-13 Ramsey BDC; 5-17 Pipestone KE; PE and Goodhue HW.

Great Crested Flycatcher: early south 5-5 Carver TH; 5-7 Goodhue KE, DB and

Houston FL and Carver KH; early north 5-8 Crow Wing JB; 5-22 St. Louis NH.

Eastern Phoebe: early south 4-4 Winona TV, GES; 4-5 Hennepin WL; 4-7 Carver TH; early north 4-10 Morrison LR; 4-11 Crow Wing JB and Duluth MMC.

Yellow-bellied Flycatcher: early south 5-13 Hennepin DB; 5-14 Dakota PE; 5-17 Hennepin JLM; early north 5-19 Crow Wing JB; 5-20 Duluth MMC; peak 5-25 Duluth (12) JG; late 5-31 Rice JAH and Duluth RL.

Traill's Flycatcher: early south: 5-3 Carver TH; 5-5 Hennepin GES; early north 5-10 Beltrami GES; 5-19 Morrison LR.

Least Flycatcher: early south 4-28 Hennepin WL; 4-29 Hennepin RG; 5-2 Jackson HH and Hennepin CH; early north 5-4 Morrison LR; 5-13 Mille Lacs MI.

Eastern Wood Pewee: early 4-24 Wabasha WDM; 4-29 Goodhue KE; 5-1 Hennepin DB.

Olive-sided Flycatcher: early south 5-12 Hennepin GES, CH; 5-16 Stearns KE, PE; early north 5-18 Mille Lacs MI; 5-25 Duluth JG; late 5-29 Hennepin WL, DB, and Chisago FS; 5-30 Anoka MM.

Horned Lark: early north 2-22 Morrison LR; 3-7 Lake and Cook GES; peak 3-1 Nobles (100's) HH.

Tree Swallow: early south 4-6 Houston FL; 4-7 Goodhue KE; 4-7 Washington WHL; peak 5-2 Carver (500) GES; early north 4-8 Duluth MMC; 4-14 Mille Lacs MI.

Bank Swallow: early south 4-25 Ramsey JJ; 4-26 Goodhue KE, PE; 4-27 Lyon HK; early north 4-22 Morrison LR; 5-11 Marshall AR.

Rough-winged Swallow: early south 4-15 Goodhue KE; 4-17 Hennepin GES; 4-18 Redwood RG; early north 4-26 Duluth KE, PE; 4-30 Duluth MMC.

Barn Swallow: early south 4-11 Wright BH; 4-12 Chisago EL; 4-18 Redwood RG; early north 4-30 Duluth MMC and Morrison LR.

Cliff Swallow: early south 4-25 Jackson HH; 5-2 Dakota DB; peak 5-23 Marshall (1100) KE, PE; early north 4-30 Duluth MMC; 5-3

Beltrami JM; 5-4 Clearwater RD.

Purple Martin: early south 4-5 Wright EH; 4-7 Wabasha WDM and Lyon HK; early north 4-10 St. Louis NH; 4-11 Crow Wing JB.

Gray Jay: 6 reports from Cook, Lake, St. Louis, Aitkin, Beltrami, and Clearwater.

Black-billed Magpie: 3 reports: 3-20 Clearwater (2) RD; 4-4 Aitkin (1) BL, RG; 4-4 Cook (1) JP.

Common Raven: Reported from Duluth, St. Louis, Cook, Beltrami, and Clearwater.

Common Crow: peak 3-4 Rice (500) OR.

Boreal Chickadee: 4-4 St. Louis (2) RG; only report.

Tufted Titmouse: Reported from Goodhue, Olmsted, Hennepin, and Winona.

Red-breasted Nuthatch: late south 5-16 Stearns KE, PE and Rice JAH and Carver KH; 5-22 Hennepin EJ.

Brown Creeper: early south 3-1 Chisago EL and Wabasha WDM; 3-14 Nobles HH; early north 3-22 Crow Wing JB; 4-16 Duluth MMC and Cook JP; late 5-9 Duluth RL; 5-21 Duluth MMC.

DIPPER: bird still present 4-4 Baptism River, Lake Co., Brent Haglund, fide JG.

House Wren: early south 4-8 Hennepin EB (very early date; Winter Wren?); next 4-22 Rice OR; 4-25 Blue Earth EK; early north 4-25 Crow Wing JB; 4-26 Duluth RL.

Winter Wren: early south 4-5 Hennepin CH; 4-9 Hennepin RG; 4-12 Houston FL; early north 4-25 St. Louis NH; 5-2 Duluth JG; late south 5-14 Blue Earth HT; 5-16 Stearns KE, PE.

Long-billed Marsh Wren: early south 4-26 Chisago KE, PE; 5-7 Goodhue DB; 5-9 Cottonwood BL; early north 5-16 Clearwater RD.

Short-billed Marsh Wren: early south 5-8 Rice OR; 5-9 Carver TH; 5-12 Washington WHL; early north 5-2 Duluth JGH; 5-16 Clearwater RD.

Mockingbird: 6 reports, 4 from the north: 5-21 Wabasha TV; 5-23 Blue Earth HT; 5-2, 13, 23 Duluth MMC, JG; 5-23 Stoney Point, St. Louis Co., BL.

Catbird: early south 4-29 Ramsey JJ; 4-30 Goodhue KE and Winona TV; early north 5-6 Morrison LR; 5-13 Mille Lacs MI.

Brown Thrasher: early south 4-17 Chisago EL; 4-25 Hennepin JGM and Blue Earth EK; early north 4-28 Mille Lacs MI; 4-29 Lake RK.

Robin: early north 3-17 Mille Lacs MI; 3-20 Duluth MMC; peak 4-21 Duluth (200) JG.

VARIED THRUSH: 2 reports from Duluth: 4-7 Ernest Wahlberg, fide JG; 5-7 B. Hojnacki, fide JG.

Wood Thrush: early 4-23 Fillmore HW; 5-2 Goodhue KE, PE; 5-8 Chisago FS; 3 northerly reports 5-19 Crow Wing JB; 5-21 Duluth JG; 5-31 Lake Vermillion, St. Louis Co. WDM.

Hermit Thrush: early south 4-6 Rice JAH; 4-8 Dakota PE and Carver KH; early north 4-16 Lake RK and Morrison LR; peak 4-28 Duluth (50) MMC.

Swainson's Thrush: early south: 4-25 Wright BH; 4-29 Hennepin RG; 4-30 Hennepin PF, WL; early north 5-8 Mille Lacs MI and Morrison LR; late 5-27 Rice JAH and Chisago FS; 5-29 Hennepin DB, WL.

Gray-cheeked Thrush: early south 4-24 Pope WH; 4-29 Hennepin RG; 4-30 Hennepin DB; early north 5-8 Morrison LR; 5-16 Mille Lacs JLM; late 5-27 Hennepin WL; 5-31 Hennepin RG.

Veery: early south 4-28 EJ, 4-29 RG, 5-5 GES, all from Hennepin; early north 5-8 Morrison LR; 5-9 Crow Wing JB.

Eastern Bluebird: early south 3-7 Houston FL; 3-15 Rice OR; 3-23 Winona TV; early north 4-7 Cook JP; 4-8 Crow Wing JB; an encouraging note from EL at Taylors Falls, Chisago County where 50 out of 55 houses were occupied.

TOWNSEND'S SOLITAIRE: 4-3 St. Peter, Nicollet Co., John M. Lewis (see notes of interest, June issue).

Blue-gray Gnatcatcher: early south 4-27 Goodhue KE; 5-2 Chisago EB; 5-5 Winona TV and Goodhue RG; peak 5-7 Goodhue (10) EB.

Golden-crowned Kinglet: early south 4-6 Carver MM and Hennepin WL; 4-7 Dakota PE and Goodhue KE and Hennepin GES; early north 4-8 Duluth JG, MMC; 4-12 Crow Wing JB; late south 4-25 Anoka JLM; 4-26 Hennepin JJ.

Ruby-crowned Kinglet: early south 4-5 Carver MM; 5-7 Hennepin WL, GES; 4-8 Hennepin EB and Goodhue KE and Winona TV; early north 4-16 Crow Wing JB; 4-18 Morrison LR; late south 5-19 Hennepin WL; 5-22 Blue Earth HT.

Water Pipit: 5-2 Lyon HK; 5-8 Lac Qui Parle KE; 5-17 Mille Lacs MI; only reports.

Sprague's Pipit: 5-23 usual spot in Clay Co. (2) KE, PE.

Bohemian Waxwing: late 3-29 Duluth (39) RL, MMC; 4-2 Crow Wing (18) JB, 4-6 Washington (40) WHL.

Cedar Waxwing: peak 4-17 Rice (200) OR.

Northern Shrike: 19 reports! late 4-5 Duluth JG; 4-19 Lake RK; peak 4-4 Aitkin (6) RG.

Loggerhead Shrike: 11 reports: early south 3-29 Anoka RD; 3-30 Rice OR; 4-15 Washington WHL; 1 northerly report 3-37 Clearwater RD (possibly Northern?); many misidentified shrikes this spring; only positive mark is mask over bill; not all Northerns show barring and some Northerns show dark bills in spring. Size not reliable without direct comparison.

Bell's Vireo: 5-13 Carver Park, Carver Co. KH; "black eyes with small white spectacles, vireo shape and movements; wingbars; whitish throat and breast of faint yellowish; smaller than Solitary, not as gray."

Yellow-throated Vireo: early south 5-6 Goodhue KE; 5-7 Carver MM, TH, KH and Houston FL and Dakota DB; only reports north 5-9 Crow Wing JB; 5-24 Clearwater RD.

Solitary Vireo: early south 4-29 Dakota PE; 4-30 Hennepin BDC; 5-1 Hennepin WL;

early north 5-4 Morrison LR; 5-9 Crow Wing JB; late south 5-31 Wright GES.

Red-eyed Vireo: early south 5-4 Olmsted HW; 5-7 Hennepin EB, DB; 5-8 Winona TV; early north 5-20 Clearwater RD; 5-21 Duluth MMC and Morrison LR.

Philadelphia Vireo: early south 5-9 Lyon PE; 5-10 Sherburne KE; 5-11 Wabasha WDM; early north 5-12 Clearwater RD; 5-17 Morrison LR; late 5-29 Wabasha WDM and Lake JG; 5-30 Duluth MMC.

Warbling Vireo: early south 4-30 Goodhue KE; 5-7 Carver TH and Winona TV and Hennepin BDC and Dakota DB; early north 5-8 Crow Wing JB; 5-12 Clearwater RD.

Black and White Warbler: early south 4-29 Hennepin TH; 4-30 Blue Earth HT and Ramsey AW and Hennepin CH, BDC; early north 5-7 Duluth MMC and Lake RK; late south 5-19 Hennepin WL; 5-23 Wright BH.

Prothonotary Warbler: only 4 reports: 4-11 Goodhue JAH (see notes of interest in June issue); 5-3 Rice JAH; 5-7 Houston FL, TV; 5-12 Rice RG.

Golden-winged Warbler: early south 5-7 Hennepin RG and Dakota DB; 5-9 Wright BH and Isanti CU; peak 5-12 Goodhue (10) KE; early north 5-9 Crow Wing JB; 5-11 Morrison LR.

Blue-winged Warbler: early 5-7 Dakota DB; 5-9 Dakota FL; 5-10 Goodhue EB; peak 5-17 Goodhue (10) KE.

BREWSTER'S WARBLER: 5-8 Minneapolis, Hennepin Co. WL: "typical pattern; singing; seen in same place as one seen in fall 1969."

Tennessee Warbler: early south 4-28 Hennepin GES; 5-2 Winona JLM; 5-3 Goodhue DB; early north 5-8 Morrison LR; 5-19 Lake RK and Crow Wing JB; late south 5-29 Wright BH and Hennepin WL, DB.

Orange-crowned Warbler: early south 4-26 Hennepin DB; 4-27 Dakota PE and Hennepin RG; early north 4-27 Morrison LR; 4-30 Duluth MMC; late 5-29 St. Louis NH and Duluth MMC and Lake JG.

Nashville Warbler: early south 4-30 Ramsey

AW; 5-2 Goodhue and Jackson, KE, PE and Blue Earth HT and Hennepin BDC; early north 5-7 Lake RK; 5-8 Duluth MMC and Marshall AR and Morrison LR; late south 5-19 Rice JAH; 5-28 Hennepin PF.

Parula Warbler: early south 5-2 Hennepin DB; 5-4 Goodhue KE; 5-7 Dakota DB and Hennepin RG; early north 5-7 Duluth MMC; 5-22 Crow Wing JB; late south 5-17 Rice JAH and Goodhue EB; 5-27 Hennepin PF.

Yellow Warbler: early south 4-28 Hennepin GES, RG; 4-29 Winona TV; 4-29 Goodhue KE; early north 5-8 Morrison LR; 5-9 Crow Wing JB.

Magnolia Warbler: early south 5-2 Stearns MC; 5-7 Dakota DB and Hennepin RG; early north 5-9 Crow Wing JB; 5-10 St. Louis NH; peak 5-25 Duluth (40) JG; late south 5-27 Chisago FS; 5-29 Hennepin DB.

Cape May Warbler: early south 5-4 Rice JAH; 5-7 Dakota DB; 5-9 Houston FL and Goodhue HW; early north 5-9 Crow Wing JB; 5-12 Mille Lacs; peak 5-10 Sherburne (5) KE; late south 5-13 HK; 5-19 Washington WHL.

Black-throated Blue Warbler: 5-25 Duluth JGH; only report.

Myrtle Warbler: early south 4-7 Nobles HH; 4-8 Wabasha WDM; early north 4-19 St. Louis NH and Morrison LR; peak 5-10 Sherburne (400) KE; late south 5-17 Wright GES; 5-19 Washington WHL.

Black-throated Green Warbler: early south 4-29 Dakota PE; 5-2 Hennepin BDC; 5-3 Goodhue DB; early north 5-4 Duluth MMC; late south 5-17 Goodhue EB and Hennepin CH; 5-26 Hennepin WL.

Cerulean Warbler: 6 reports: 5-10 Goodhue EB; 5-12 Goodhue WL; 5-16 Houston FL and Goodhue BDC; 5-18 Winona TV; 5-22 Stearns (5) KE, PE.

Blackburnian Warbler: early south 5-7 Washington WHL and Dakota EB; 5-9 Goodhue HW and Wright BH; early north 5-9 Crow Wing JB; 5-12 Mille Lacs MI; peak 5-25 Duluth (40) JG; late south 5-23 Wright BH; 5-26 Hennepin WL.

Chestnut-sided Warbler: early south 5-5 Winona TV; 5-6 Stearns MC; 5-7 Hennepin RG and Dakota DB; early north 5-9 Crow Wing JB and Morrison LR; peak 5-25 Duluth (60) JG; late south 5-29 Hennepin DB; 6-2 Chisago FS.

Bay-breasted Warbler: early south 5-7 Dakota DB; 5-8 Goodhue HW; 5-9 Houston FL; early north 5-20 Crow Wing JB; 5-21 Duluth MMC; peak 5-25 Duluth (20) JG; 5-28 Crow Wing (20) JB; late south 5-19 Hennepin GES and Ramsey HC; 5-24 Wabasha WDM.

Blackpoll Warbler: early south 4-26 Cottonwood LF (fairly good details); 4-30 Goodhue KE; 5-5 Nobles HH; early north 5-14 Mille Lacs MI; 5-15 Morrison LR; peak 5-25 Duluth (20) JG; late 5-30 Crow Wing JB and St. Louis NH; 6-2 Washington WHL.

Pine Warbler: 12 reports: early south 5-7 Carver MM; 5-10 Sherburne KE; 5-14 Blue Earth HT; early north 5-8 Marshall AR; 5-10 Clearwater RP; late south 5-19 Hennepin GES; 5-23 Hennepin EB.

Palm Warbler: early south 4-26 Wright BH and Nobles HH; 4-28 Dakota PE and Hennepin GES, DB; early north 4-28 Duluth JGH; 4-29 Crow Wing JB and Duluth MMC and Lake RK; peak 5-12 Mille Lacs (100) BDC; late south 5-19 Goodhue PF; 5-27 Hennepin RG.

Ovenbird: early south 5-3 Hennepin RG; 5-6 Cottonwood LF; 5-7 Goodhue KE and Dakota DB; early north 5-7 Duluth B. Hojnacki, fide JG; 5-9 Crow Wing JB.

Northern Waterthrush: early south 4-28 Ramsey AW; 4-30 and 5-2 Goodhue KE, PE; early north 5-2 Duluth RL; 5-3 Duluth JG; peak 5-12 Anoka (15) BH; late south 5-29 Winona IV.

Louisiana Waterthrush: 6 reports: 4-23 Winona TV; 5-3 Goodhue DB; 5-8 Goodhue KE; 5-9 Dakota FL; 5-13 Hennepin MM; 5-16 Stearns KE, PE.

Connecticut Warbler: 9 reports: early south 5-10 Hennepin BDC; 5-12 Washington WHL; 2 northerly reports: 5-27 Morrison LR; 5-30 Duluth RL; late south 5-29 Hennepin DB, WL and Chisago FS.

Mourning Warbler: early south 5-9 Isanti CU and Wright BH; 5-12 Hennepin GES and Goodhue KE; early north 5-11 Morrison LR; 5-18 Duluth MMC; late south 6-2 Hennepin RG; 6-4 Washington WHL.

Yellowthroat: early south 5-6 Ramsey AW; 5-7 Dakota DB and Carver TH, MM; early north 5-9 Crow Wing JB; 5-10 Clearwater RD and Morrison LR.

Yellow-breasted Chat: 5-10 Anoka (2) AW; only report.

Wilson's Warbler: early south 5-5 Olmsted HW; 5-7 Hennepin RG and Dakota DB; early north 5-8 Morrison LR; 5-9 Crow Wing JB; late 5-30 Hennepin BL and Duluth MMC and St. Louis LM.

Canada Warbler: early south 5-7 Dakota DB; 5-9 Goodhue HW; 5-10 Sherburne KE and Carver TH; early north 5-9 Crow Wing JB; 5-21 Morrison LR; peak 5-25 Duluth (60) JG; late south: Hennepin DB 5-29; 6-2 Washington WHL.

American Redstart: early south 5-1 Winona TV; 5-6 Goodhue KE; 5-7 Dakota DB and Hennepin BDC; peak 5-25 Duluth (100) JG; early north 5-9 Crow Wing JB and Morrison LR.

Bobolink: early south 5-3 Hennepin KH; 5-4 Rice OR; 5-7 Dakota DB; early north 5-12 Mille Lacs BDC; 5-14 Lake RK.

Eastern Meadowlark: early south 3-8 Freeborn RJ; 3-11 Ramsey JJ and Chisago EL; early north 3-18 Marshall AR; 3-20 Pine RHJ.

Western Meadowlark: early south 3-6 Nobles HH and Cottonwood LF; 3-8 Lyon HK; early north 3-29 Morrison LR; 4-5 Clearwater RD.

Yellow-headed Blackbird: 4-8 Dakota PE; 4-9 Hennepin JGM; 4-12 Chippewa DB; early north 4-16 Lake RK; 4-25 Marshall AR.

Red-winged Blackbird: early south 3-1 Olmsted HW; 3-3 Hennepin JGM; 3-7 Winona TV and Wabasha WDM; peak 3-22 Winona (5,000) TV; early north 3-19 Mille Lacs MI; 4-3 Duluth MMC.

Orchard Oriole: 7 reports; 5-4 Winona TV; 5-7 Lyon (2) HK; 5-9 Cottonwood BL; 5-16 Nobles HH; 5-17 Wabasha WDM; 5-17 Lyon KE, PE.

Baltimore Oriole: early south 5-2 Dakota DB; 5-3 Washington WHL and Wabasha WDM and Goodhue WL; early north 5-7 Crow Wing JB; 5-8 Morrison LR.

Rusty Blackbird: early south 3-17 Dakota RG and Houston FL; 3-22 Wabasha KE, PE; early north 4-8 Lake RK; 4-12 Crow Wing JB; late 5-7 Carver MM; 5-24 Clearwater KE, PE.

Brewer's Blackbird: early south 3-16 Pope WL; 4-5 Winona TV; 4-6 Blue Earth HT; 4-6 Ramsey AW; early north 4-16 Lake RK; 4-23 Mille Lacs MI.

Common Grackle: early south 3-1 Olmsted HW and Wabasha WDM and Rice OR; peak 4-4 (1,000) Rice JAH; early north 3-12 Duluth JG; 3-22 Mille Lacs MI.

Brown-headed Cowbird: early south 3-22 Wabasha KE, PE; 4-8 Wabasha WDM; 4-10 Winona TV and Chisago EL; peak 4-30 Lake (1,000) JG; early north 4-9 Lake RK; 4-13 Duluth MMC.

Scarlet Tanager: early south 5-3 Winona TV; 5-9 Goodhue HW; 5-10 Goodhue EB and Carver KH; early north 5-9 Morrison LR; 5-10 Clearwater RD.

Cardinal: 4-10 Morrison LR; only report north.

Rose-breasted Grosbeak: early south 4-27 Hennepin JGM; 4-29 Winona TV and Wabasha WDM; early north 5-8 Marshall AR and Morrison LR.

Indigo Bunting: early south 5-7 Goodhue DB; 5-8 Hennepin WL; early north 5-15 Morrison HD; 5-18 Morrison LR.

Dickcissel: only 7 reports (abundant in Illinois and Iowa): early south 4-24 Watonwan EK; 5-8 Rice OR; 5-17 Faribault HK; one NE report 5-20 to 5-30 Tofte, Cook Co., 1 at feeder, same location as last year, JP.

Evening Grosbeak: 3 reports south: 3-30

Washington WHL; 5-2 Chisago FS; 5-16 Stearns, PE, KE; peak 4-30 Duluth (400) MMC.

Purple Finch: late south: 5-10 Washington RHJ; 5-12 Hennepin PF; early north 3-29 Crow Wing JB; 4-2 Beltrami JM.

Pine Grosbeak: 3 reports: 3-25 Mille Lacs (40) MI; 4-31 Duluth MMC; 5-5 Duluth B. Hojnacki, fide JG.

Hoary Redpoll: 6 reports: 3-1 Chisago FS (banded); 3-12 Hennepin CH; 3-1, 3-13, 4-2, 4-20 Duluth RL, MMC, JG.

Common Redpoll: after last winter's invasion, latest migrants were exceptionally late: 5-12 Beltrami JM; 5-14 MMC Duluth; 5-20 Lake RK; an amazing peak 4-21 Duluth (15,000) JG.

Pine Siskin: late south 5-28 Carver MM; 5-31 Hennepin DB, CH, GES, RG; peak 5-26 Duluth (200) JG.

American Goldfinch: early north 5-5 Clearwater RD; 5-13 Crow Wing JB. Very late arriving.

Red Crossbill: lingered much later than usual: 5-2 to 6-2 Goodhue (5) KE; 5-18 to 6-14 Hennepin (12) WL; into mid-June in Beltrami JM; also at least 4 nesting reports which will be reported on in the summer issue; only 2 previous nesting reports for the state!

White-winged Crossbill: 4 reports: 3-12 and 15 Hennepin (3 and 7) CH; 3-26 Duluth MMC; 4-17 Carver MM; 5-11 Hennepin CH.

Rufous-sided Towhee: early south 4-23 Winona TV; 4-28 Hennepin DB, JGM; 4-29 Goodhue KE; early north 4-27 Morrison LR; 5-1 Cook JP.

Lark Bunting: 3 reports: 5-24 Cottonwood (2) LF; 5-27 Rock and Nobles (2) HH; 5-31 Jackson (1) HH.

Savannah Sparrow: early south 4-15 Dakota RG; 4-18 Lyon PE; 4-25 Nobles HH and Carver TH; early north 4-24 Mille Lacs MI; 4-26 Aitkin KE, PE.

Grasshopper Sparrow: early 5-1 Rice OR; 5-2 Rice KE, PE; 4-28 Lyon HK.

BAIRD'S SPARROW: 5-23 virgin prairie spot near Felton, Clay Co. (5) KE, PE; see article this issue.

LeConte's Sparrow: 5 reports: 5-16 Duluth P. Getman, fide JG; 5-23 Pine BL; 5-23 Becker (3) KE, PE; 5-29 Duluth MMC; 5-29 Lake JG.

Henslow's Sparrow: 5-30 Winona (5) TV; only report.

Vesper Sparrow: early south 4-4 Olmsted HW; 4-10 Wabasha WDM; 4-11 Jackson HH and Swift BH and Rice JAH; early north 4-16 Morrison LR; 4-23 Crow Wing JB.

Lark Sparrow: 4-27 Goodhue (12) KE; 5-10 Sherburne (3) KE; 5-17 Goodhue EB; 5-18 Scott RG; 5-21 Wabasha TV; only reports.

Slate-colored Junco: early north 3-16 Duluth MMC; 3-25 Crow Wing JB; peak 4-21 Duluth (5,000) JG; late south 5-6 Blue Earth HT; 5-12 Carver KH; 5-28 Hennepin JGM.

Oregon Junco: 17 reports: latest 4-26 Duluth MMC; 4-28 Winona TV.

Tree Sparrow: early north 4-2 Lake RK; 4-9 Mille Lacs MI and Cook JP; late 5-12 Cook JP and Duluth JG; 5-15 Lake RK.

Chipping Sparrow: early south 4-6 Blue Earth HT and Washington WHL; 4-8 Carver MM; early north 4-27 Duluth MMC and Clearwater RD and Morrison LR.

Clay-colored Sparrow; earliest in north 4-25 Crow Wing JB; 4-26 Duluth JG; 5-5 Lake RK; early south 5-3 Lyon KE, PE; 5-4 Lincoln HK.

Field Sparrow: early 4-4 Olmsted HW; 4-6 Washington WHL; 4-7 Ramsey AW.

Harris' Sparrow: early south 4-11 Cottonwood LF; 4-25 Nobles HH; 4-27 Pope WH; early north 4-28 Cook JP; 5-1 Lake RK; late 5-19 Duluth MMC; 5-20 Lake RK.

White-crowned Sparrow: earliest in north 4-25 Cook JP; 4-28 Lake RK; 4-29 St. Louis NH; early south 5-6 Carver KH; late 5-29 Cook JP and Lake JG and Duluth MMC; also one Gambel's subspecies banded 5-7 Chisago FS.

White-throated Sparrow: early south 4-10 Hennepin BDC; 4-11 Hennepin EB; 4-13 Carver KH; early north 4-21 Duluth MMC; 4-22 Duluth JG; peak 5-1 Lake (150) RK; late south 5-17 Freeborn PF and Wright BH; 5-29 Chisago FS.

Fox Sparrow: early south 4-7 Nobles HH; 4-8 Hennepin EB, JGM and Carver KH, MM and Chisago EL; early north 4-10 Duluth MMC and Lake RK; peak 4-21 Duluth (300) JG; late 5-6 Duluth MMC and Goodhue KE.

Lincoln's Sparrow: early south 4-26 Hennepin DB; 4-27 Carver MM and Big Stone WL; early north 4-28 Duluth MMC and Morrison LR; late 5-29 Duluth MMC and Lake JG; 5-31 Duluth RL.

Swamp Sparrow: early south 4-11 JLM and Hennepin DB, EB; 4-12 Hennepin CH; peak 4-29 Duluth (100) MMC; early north 4-27 Morrison LR and Duluth MMC and Mille Lacs MI.

Song Sparrow: early south 3-17 Goodhue RG; 3-22 Houston FL; 3-31 Rice OR; early north 4-9 Crow Wing JB and Duluth JG.

Lapland Longspur: only 3 reports: 4-4 Lyon, Yellow Medicine, Lac Qui Parle (150-200,000) KE, PE; 4-12 Lac Qui Parle DB; 5-5 Dakota RG.

Smith's Longspur: one possibly seen 5-8 Lac Qui Parle, Robert P. Russell, fide KE; "longspur rattle heard and small white wing patches seen on flying bird within 100 feet-only field marks noted."

Chestnut-collared Longspur: 3 reports: 5-2 and 5-23 usual spot near Felton, Clay Co. (3) DB, KE, PE; 5-29 Morris Stevens Co. EB.

Snow Bunting: 5 reports: 3-8 Cottonwood (50) LF; 3-17 Dakota RG; 3-18 Duluth MMC; 4-9 Duluth JG; 4-21 Lake RK.

SUMMARY: A total of 283 species (about the usual; perhaps a bit less than normal) was compiled by a record low number of observers: 59! This is the lowest number of spring reports received in at least eight years. Compare this to 1965 when 132 observers contributed to the spring report! Just as outgoing *Loon* editor Bob Janssen expressed regret in last December's issue that relatively few birders are M.O.U. members, we find it disturbing that so few members contribute to the seasonal reports. And the number of observers has been generally declining for all seasons in the past couple years. If you are not a contributor now and wish to be, or if you know an active birder who is not now reporting to us, just request a Seasonal Bird Observation Report from Janet Green, 9773 North Shore Drive, Duluth.

While it makes our job easier to go through fewer reports, it also makes for a less accurate and less interesting account of the seasonal status of birds in Minnesota. Such is the case this spring: generally we would characterize this migration as relatively dull. There seemed to be fewer reports of rarities, and many of the commoner species were reported fewer times. Weather probably had something to do with this, though at the same time heavier rainfall should have resulted in higher water levels and thus poorer shorebirding, but in fact it was a very good year for shorebirds. It also seemed a good year for migration "waves", with several observers noting particular dates. Most impressive of these were: April 4-5 in southwest Minn. with a tremendous longspur and waterfowl migration; May 10 in Sherburne Co. where about 2000 warblers of 20 species were found in a single spot during a two hour period; April 21 in Duluth with a huge concentration of redpolls and juncoes; and May 25 in Duluth with another very large wave of warblers.

Even a relatively unassuming season will have its unique highlights. Of special interest this year were: all 3 "southern" herons at widely separated locations, comparing nicely with similar heron movements in northern Illinois and eastern South Dakota; 5 Golden Eagles at Agassiz refuge; 3 Western Sandpipers and a Long-billed Curlew during a good shorebird migration; at least 8 Great Gray Owls in April in Roseau Co.; a Red-shafted (?) Flicker at Agassiz; Minnesota's first Dipper still present in April; 2 Varied Thrush and a Townsend's Solitaire, both species now practically regular in the state; 30 shrike reports, many of them misidentified; a very early Prothonotary Warbler on April 11; a Brewster's Warbler reappearing in Minnehaha Park in Minneapolis; 60 Canada Warblers in Duluth; 15,000 redpolls in Duluth; 4 Red Crossbill nests; 5 Baird's Sparrows at the virgin prairie spot near Felton; and at least 150,000 longspurs in early April in the southwest part of the state.

For many birders an integral part of spring migration is the May Big Day, an attempt by only one party of any size to record as many species as possible within a 24-hour day. There is no limit as to area, but the participants must stay together. Your compilers (KE and PE) ran one on May 16, starting in the woods near St. Cloud and moving southwest through the prairies, finishing near Marshall. We recorded 153 species in spite of a slow start, getting 20 species of shorebirds and warblers each and several late-lingering migrants. As far as we know, no one in the state has been running systematic Big Days, but perhaps now with a figure of 153 to shoot for some of you will give it a try.

We would like to thank Marygail Gilly and Bob Russell who helped in typing this report.

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seasonal report ADDITIONS AND CORRECTIONS

Winter 1969 - 1970

Report compiled and written by Janet C. Green, not Kim R. Eckert.

Gadwall: present all winter Goodhue, KRE.

American Widgeon: present all winter Goodhue, KRE.

Fall 1969

Golden Eagle: delete 8-26, MMC.

Bald Eagle: add 8-26 Duluth MMC.

Turkey Vulture: 10-18 Crow Wing JB.

Osprey: 10-18 Crow Wing JB.

Solitary Sandpiper: 8-24 Crow Wing JB.

Purple Martin: 8-19 (1000) Crow Wing JB.

Common Raven: delete 8-21 Kandiyohi BAH.

Winter Wren: 10-12 Crow Wing T. Savaloja.

Long-billed Marsh Wren: 11-10 Crow Wing JB.

Catbird: 11-23 into Dec. Crow Wing JB.

Swainson's Thrush: 10-22 Crow Wing JB.

Ruby-crowned Kinglet: 11-22 Crow Wing JB.

Bohemian Waxwing: 11-11 Crow Wing JB.

Northern Shrike: 10-21 Crow Wing JB.

Golden-winged Warbler: 9-28 Crow Wing JB.

Parula Warbler: 11-9 Ramsey ELC.

Blackburnian Warbler: 10-17 Bagley, Clearwater Co. R. C. Davids.

Bobolink: 8-30 (24) Aitkin JB.

Savannah Sparrow: 10-26 Crow Wing JB.

Tree Sparrow: 9-23 (12) Crow Wing JB.

White-crowned Sparrow: 11-29 Crow Wing JB.

Summer 1969

Upland Plover: delete 6-2 Mt. Iron BAH.

Wood Thrush: delete 7-5 Farm Lake, Lake Co. BAH, and Crow Wing BAH.

Black-throated Blue Warbler: 7-13 Rice Lake Refuge, Aitkin Co. MMC.

Fall 1968

Yellow-crowned Night Heron: delete 9-17 Hennepin Mrs. EWJ.

Least Bittern: add 9-17 Hennepin Mrs. EWJ.

notes of interest

CORRECTION: Mrs. Lyn Steere was the photographer who took the Western Grebe photo that appeared on page 75 of the previous issue of this magazine (Loon, June 1970). Through an oversight which we regret, Mrs. Steere was not given credit for that photo.

SPRAGUE'S PIPIT ON THE NORTH SHORE OF LAKE SUPERIOR. — While driving down Scenic Highway 61 along the shore of Lake Superior on October 15, 1969, I spotted a small group of birds feeding among weeds in the gravel driveway of the Clifton Volunteer Fire Department, Duluth Township, St. Louis County. When I stopped the car, I could see that they were mostly Horned Larks with a few Lapland Longspurs. I got as close to the birds in the car as I could without flushing them and watched them from

inside the car, using 7x35 binoculars.

As I was looking at the larks and longspurs, I saw a small bird stick its head up from the denser weeds in back of them. I could see the head, breast and wings well. It was obviously a pipit — a sparrow-like bird with a sharp bill — but it seemed much lighter than the Water Pipits I had been seeing that fall. The malar patch, eye stripe, chin, and breast between the vertical tan markings were white, not the buffy color of Water Pipits. It had two conspicuous whitish wing bars. Because they were lighter, the malar patch and eye stripe were more conspicuous than in a Water Pipit. The overall color was more tan and less gray than a Water Pipit. I tried to see the legs and back, but the bird was obviously hiding in the weeds and would only poke up its head between short scurryings, when it obviously walked and not hopped. It did not wag its tail. After about 2 to 3 minutes, the whole flock of birds flew off and I could not find them again.

After it became apparent that I had lost the flock, I went up to a spot a couple of miles away where I had been seeing about 30 Water Pipits for about a week. This location was in the median strip of the four-lane highway 61, which parallels Scenic Highway 61 about a half mile inland from Lake Superior in Duluth Township. The Water Pipits were still there and I was able to observe them closely, again using the car as a blind. I noted the differences in plumage mentioned above and also noticed that the Water Pipits were not secretive, fed out in the open, and constantly wagged their tails. This contrasts with the behavior of the lone bird that I concluded was a Sprague's Pipit. Janet C. Green, 9773 N. Shore Dr., Duluth, Minn. 55804.

SECOND STATE RECORD FOR THE GRAY-HEADED JUNCO. — On November 24, 1969, a junco flew into the spruce tree behind our house. The chestnut patch on its back, the over-all light gray color on its head, wings, breast and belly, with white further back toward the tail, distinguished it from the Slate-colored Junco with which it was feeding.

Upon referring to *Birds of North America*, I found it to be a Gray-headed Junco. This was verified later in the day by Janet C. Green, who came and saw the bird. I was able to take several feet of color film from a distance of 6 feet. The bird stayed for 5 days through the 28th of November. Others who saw it besides my family were Koni Sundquist (Mrs. Norman) and Bernette Hojnacki (Mrs. David). Our daughter Kathy saw a similar bird about six blocks from our home on February 28th, feeding with Pine Grosbeaks and redpolls. Probably it was the same one and had wintered over in the Duluth area. Marjorie M. Carr, 1834 Vermilion Road, Duluth, Minn.

Note: A copy of a frame from the color film taken by M. M. Carr and a copy of a 35 mm. slide taken by J. C. Green of this bird have been sent to the National Photoduplicate File of the Fish and Wildlife Service, and copies of the same pictures have also been placed in the MOU species file.

MOCKINGBIRD IN NORTHERN OTTER TAIL COUNTY. — In May, 1969, at about 6 o'clock one foggy morning I heard a bird at the north shore of Little Pelican Lake. I had never heard a Mockingbird, but the volume and richness of this song suggested that species. Then I saw the bird stop on the top of an oak to sing *dee-dah-dah*, a loud mellow ringing that was repeated. I saw that the size, color, and silhouette were right for a Mockingbird. In August, 1969, I heard the same song from a thicket, so the bird may have nested at Pelican Lake.

Our place at Pelican Lake is on the border between Becker and Otter Tail Counties. This spring I watched for a Mockingbird there. Later, on the afternoon on July 5, 1970, there it was, feeding with a Robin in some newly mown grass. It flew to a small oak seedling, then to a box elder, where it remained for several minutes. Feather for feather, in flight and repose, it was right out of the handbooks. That night at about 10 it sang for about 20 minutes from the top of the tall oak.

Returning to Fargo, N.D., for the work week, I told Dr. O. A. Stevens about the bird, and he said, "Get the song." So on July 20 I made notes describing the song. At about 5:20 that date, calm, almost daylight, clear bright sky, temperature 52, a brilliant moon

still showing, a Mockingbird was singing from the top of that same oak. In each series he sang six different sets of phrases, with a conversational unaccented tuk-tuk-tuk between series. Half an hour later, as I was leaving, another mocker seemed to be answering from a quarter mile away. Later, early in August, I again heard a mocker. Mrs. Dorothea McCullough, Route 1, Detroit Lakes, Mn.

THE HAWK PATROL. — On my farm for some years now I have planted and grown sunflowers, usually the variety used in bird feeding. And of course birds come to the field and eat sunflower seeds as they are maturing — blue jays, crows, pine siskins, goldfinches, chickadees, blackbirds, even robins and flickers at times. Except for the crows and blackbirds, birds seldom come in large enough numbers to do much damage and create a problem.

But nature has a way of maintaining a balance even here. For I often see a hawk, sometimes several, patrolling the field, flying low back and forth over the sunflowers. They have been attracted by the small birds and are hunting. This tends to keep the sunflower eaters on the move, scurrying from one part of the field to another, or retreating toward the ground to escape the enemy.

Most of the hawks are Marsh Hawks, which are especially adapted for this type of hunting. But now and then I see a Sparrow Hawk, or a Sharp-shin or a Cooper's, but only rarely a Broad-wing. Once in a great while, if too-large flocks of crows and blackbirds congregate, I disperse them with a shotgun; otherwise I leave it up to the hawks. They keep matters well in hand, and I have yet to suffer a major loss. — **Bennie Bengtson, Kennedy, Minnesota.**

KILDEERS NEST ON ROOF; YOUNG JUMP DOWN. — My mother, who teaches at Riverview Elementary School, Anoka County, told me of a pair of Kildeers that nested on the roof of the school last spring. This is the third year that Kildeers have nested on that roof, and it is thought that they may be the same pair. The young hatched during the week of May 21, 1970, and they were jumping off the roof the following week. **Bruce A. Hitman, 7483 Osseo Road, Brooklyn Park, Minnesota.**

CONCENTRATION OF COMMON EGRETS, STEARNS COUNTY. — The time was 8:30 a.m., July 17, 1970. I was about midway between Belgrade and Brooten, Stearns County, going westward on Highway 55. To my left was a grass-covered prairie marsh covering about an acre. In this small marsh I counted 93 Common Egrets feeding on what appeared to be frogs. A fence extended through the marsh, and on each post stood a Common Egret. Others were flying to and from the west. Most likely they came from the Lake Johanna rookery, which is about 10 miles to the southwest. In the 10 years that I have been birding in this area I have never seen such a concentration of Common Egrets. Also at this marsh were five Great Blue Herons and three Black-crowned Night Herons.

Because of lack of moisture last fall, the winter of 1969-70 was hard on the local frog population. Perhaps this egret marsh had somehow retained more moisture and thus more frogs. **Bruce A. Hitman, 7483 Osseo Road, Brooklyn Park, Mn.**

CATTLE EGRET AT FROG LAKE, STEVENS COUNTY. — At about 1:30 p.m., April 29, 1970, Elbert Holslin, who farms on the shores of Frog Lake, phoned me to say there was a strange white bird in the pasture with his cattle. His description left little doubt that it was a Cattle Egret. So, grabbing camera, binoculars, and Questar telescope, I got down there (about 11 miles) as fast as I could and spent nearly the entire afternoon with the egret.

I took numerous photographs and followed the bird from the pasture near the farm buildings down to the bay of Frog Lake, then back to the pasture, thence over to the feed lot, back to the pasture, and then once again down to the bay.

As evening approached, the egret appeared to settle down for the night on an island of matted cattails out in the bay, in the company of two Green Herons, two Black-crowned Night Herons, a Mallard drake, plus several Redhead and Ring-necked Ducks.

At least nine people saw this egret at Frog Lake, including Elbert, Ed, Al, and Maurice

Holslin. All agreed that it could be nothing but a Cattle Egret in spring breeding plumage. The orange-buff areas included the top of the head, part of the back, and plumes on the lower breast. The bill was yellowish to reddish-orange, the legs a rather dull yellowish. Ernest H. Strubbe, Alberta, Minnesota.

SNOWY EGRET AT COTTONWOOD, LYON COUNTY. — While spending a weekend at my boyhood home I had the good fortune of seeing a Snowy Egret under somewhat unusual circumstances. My bedroom faces westward overlooking Cottonwood Lake. At 7:30 a.m. on Sunday, May 10, 1970, a beautiful clear day, I happened to look out the window and saw three large white birds flying eastward toward our house.

They came directly overhead. The first two were beautiful American Egrets with distinctive black legs and feet. The third bird, which was flying a little lower, was smaller; and as it flew overhead I saw the distinctive black legs and yellow feet of a Snowy Egret.

Although I saw this bird without binoculars, it was only about 25 yards above the house, and light conditions were good. I had previously seen the Snowy Egret in Florida. Paul Egeland, 12952 Nicollet Ave. S., Burnsville, Minn. 55378.

JAY KILLS HUMMINGBIRD. — May 13, 1970, the first Ruby-throated Hummingbird became emmeshed in one of my Japanese mist nets, and I banded it with one of the Bleitz Wildlife Foundation experimental bands, number X9274. It was a beautiful male bird weighing 2.9 grams. Because it was the first one of the year. I held it for about 30 minutes until after we had eaten supper, then took it out and photographed it.

When I released the bird from my hand, where I had placed it in an upside-down position, it took off rather slowly and flew through a grove of trees to my neighbor's house to the west, about 100 feet away. It alighted on the edge of the roof. No sooner had it alighted than a Blue Jay flew down from an oak tree in the neighbor's yard and snatched the Ruby-throated Hummingbird up in its beak, as if it were an insect, and flew back up into the oak tree.

Another Blue Jay flew to the first bird to have a part in the feast. The first bird pecked the hummingbird several times, and it dropped to the ground. I turned to tell my wife, Kirsten, to come see what was happening, and when I looked back the two jays had flown off with the dead hummingbird. The whole episode took about 2 minutes or less from the time I released the hummingbird. Rev. Forest V. Strnad, Box 237, Wyoming, Chisago County, Minnesota 55092.

HUMMINGBIRD VERSUS BEE. — On September 11, 1970, while employed at a local nursery during my summer vacation from college, I observed what I believe to be unusual behavior on the part of a female Ruby-throated Hummingbird. At 9:32 a.m. CDST, I noticed the bird feeding at the flowers of Blue Mist Spirea bushes; at the same time a bumble bee was making its rounds at the flowers only a short distance away. When the hummingbird saw the bee, it emitted a loud squeak! and took off in hot pursuit of the insect. Satisfied that it had frightened away the intruder, the hummer returned and continued feeding.

The bird left the bushes for a short time at 9:38 a.m., but came back to them again at 9:51; by this time, the bumblebee, too, had returned. Again the performance was repeated, but apparently the bee had its fill, for it did not return to the flowers until the pugnacious little bird had departed. The day was a bright, sunny one, the temperature about 65 degrees F., and winds were calm. I observed most of the activity from approximately 5 feet away, although at times I got as close as 3 feet, so binoculars were not needed. — Richard H. Jorgensen, 214 South Third Ave. W., Albert Lea, Minnesota 56007.

The above note is interesting in view of the fact that at least one other writer has stated that bees drive hummingbirds away from hummingbird feeders. See James C. Johnson's article on page 86 of *Inland Bird Banding News*, May - June 1970. Editor.

PURPLE GALLINULE NEAR ST. PETER. — On Saturday, September 5, 1970, I stopped by a marshy pond to look over some ducks and shorebirds that were visible from the road. The marsh is on the north side of the road adjacent to Oak Leaf Lake, which is on Highway 99 about 3 miles west of St. Peter, Minnesota. As I gassed over the area, I saw to the west about 75 yards away a chicken-like bird with long yellow legs, long yellow toes, and creamy under parts.

I drove closer, to within 40 yards, then noticed a short bill that was brown except for the flesh-colored base. A small frontal plate was darker. Buff-brown to a darker brown describes the upper parts of the birds from head to tail. The under surface of the tail was all white. When walking, the bird flicked its tail up and down a few times. There were no eye stripes or bars on the flanks.

I have seen one adult and one immature Purple Gallinule in Florida. The immature was much darker on the back than this one.

The sky was clear; time about 8 a.m. I used 8 x 36 Bushnell binoculars and a 25x spotting scope. Don Bolduc, Minneapolis.

MAY RECORD FOR AN ICELAND GULL. — The winter of 1969-1970 was not very productive for white-winged gulls on Lake Superior. There was no winter fishing this year out of the village of Knife River, where the gulls usually concentrate, so gulls of any kind were scarce. During winter I saw few Glaucous Gulls (the maximum together was only two) and no Iceland Gulls.

But I spotted a white-winged gull on May 6, 1970, circling with Herring Gulls and Ring-billed Gulls at the mouth of the Lester River in Duluth. The gulls were concentrated there fishing for smelt, which still run in the North Shore streams in early May.

I was fairly convinced after watching the flying white-winged gull for a few minutes with binoculars that it was an Iceland Gull (not the more abundant Glaucous Gull), but I wanted to be absolutely sure since this was quite late to see one. So Marjorie Carr and I watched the gull, now resting in the water, for about 10 minutes, using the spotting scope and binoculars. At times we were only about 300 feet from the bird. I was able to compare it with Herring Gulls both flying and resting in the water, and made the following notes on its plumage:

Buffy-white plumage — darker than most white-winged gulls in first-year plumage. Primaries same buffy color throughout length as rest of wing. Tail had wide terminal band that was pale brown — darker than the rest of the bird but not as dark as the tail band of Herring Gull immatures although it covered the same area. Same size as female Herring Gull on the wing, and same shape through the chest and silhouette of wings folded over the tail as female Herring Gull in the water. At rest could see unmarked primaries and also that tip of tail was darkest part of bird. Eye was dark and distal third of bill was dark. Rest of bill was bone color.

Although I drive by Lester River almost every day, I did not spot this gull again. The previous late departure date for this species, in fact the last time this bird was reported for the state, was April 24, 1968 (Loon 41:26-27). Janet C. Green, 9773 N. Shore Dr., Duluth, Minn.

WESTERN GREBES NEST IN KANDIYOHI COUNTY. — While birding in west-central Minnesota on August 22, 1970, I discovered a pair of Western Grebes with three downy gray young about one-third grown. First the young were swimming alongside the adults, then two climbed onto the back of one adult and the other onto the back of the other adult in typical grebe fashion. Nearby were six more adults. On September 4 the three young were nearly half grown and still with their parents. And on that date I saw six more adults there.

These observations were made at shallow, marshy Sunburg Lake, which is two miles southwest of Sunburg and on the northwestern border of Kandiyohi County and Swift County. I had seen four adults there at Sunburg Lake on July 16. And 5 miles northwest of there on Simon Lake I had seen eleven adult Western Grebes on June 13. Bruce A. Hitman, 7483 Osseo Road, Brooklyn Park, Mn. 55429.

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MOU COMING EVENTS

January 23 - 24, 1971, Grand Marais, Mn. MOU Winter Field Trip. All birders welcome. See *MOU Newsletter* for details and for banquet reservation form. Banquet in Grand Marais Jan. 23, followed by evening meeting.

May 15 - 16, 1971, Mountain Lake, Windom, and vicinity. MOU Spring Field Trip. All birders welcome. Hosted by Southwestern Minnesota Nature Club. See future *MOU Newsletters* for details.

The
LOON

DECEMBER 1970

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Orders for subscriptions, memberships, back issues (\$1 each), and checklists (5 cents ea. plus 5 cents postage or 50 for \$1.25 plus 15 cents postage) should be sent to the treasurer, Mrs. Elizabeth Campbell, 5267 W. Bald Eagle Blvd., St. Paul, Mn. 55110.

Bird sightings should be reported to the associate editor in charge of "The Season" section, Mrs. Janet Green, 9773 North Shore Drive, Duluth, Mn. 55804. Make your reports on forms obtained from Mrs. Green, and turn them in promptly at the end of each season (important).

PURPOSE OF THE M.O.U.

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 M.O.U. officers wish to point out to those interested in bird conservation that any or all phases of the M.O.U. program could be expanded significantly with gifts memorials or bequests willed to the organization.

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Cover: Red breasted Nuthatches, by Ken Haag. Drawn from life at backyard feeder. 679 E. Jessamine, St.

The President writes...

THANK YOU ALL, AND BEST WISHES

*Though my presidency of the MOU will have ended before you read this, let me express these thoughts. Surely the MOU has been one of the best state bird organizations, and you members have made it so. For you form a statewide fellowship of birders, and through your MOU field trips and your meetings and the MOU Newsletter you keep in touch with each other statewide. Most important you publish **The Loon** one of the best state bird magazines, which goes to members, affiliated clubs, schools, and scientific institutions. In doing all this the MOU performs a function vital to birders, and it is a function that no other group can perform in this state.*

The support you members have given the MOU is the primary factor in its success. I am glad that many of you have been able to participate in our field trips and meetings. In addition, many of you have donated money in addition to your dues. In this connection we must especially honor the late Mrs. Dessie Lehrke, a former president of the MOU, who died a few months ago. Mrs. Lehrke left the MOU a most generous bequest that you will hear more about later.

*During my presidency — 1969 and 1970 — the success of the MOU was possible only because many of you gave your time, effort, and skills so generously. Foremost was Bob Janssen, who two issues ago ended his 11½ years as editor of **The Loon**. Since this is the most vital job in the MOU, and since he performed it very well, we must repeat our thanks to him for a tremendous contribution.*

*Of course, the success of **The Loon** depended also on the many members and others who sent the editor excellent articles, notes of interest, bird-sighting reports, photos, and drawings. And Janet Green, besides acting as MOU secretary, diligently collected and skillfully edited the great volume of bird-sighting data that helped make each issue of **The Loon** so significant.*

*During these two years **The MOU Newsletter** has had two capable editors. Heather Huber conferred her special charm on that publication, and Maury Goldberg produced a newsletter that deservedly won much praise from members.*

*Elizabeth Campbell has received far too little recognition. Though her title has been MOU treasurer, her duties have included managing memberships and **Loon** circulation, selling back issues and checklists, and investing the MOU Endowment Fund.*

The making of all arrangements for our December meeting is one of the most demanding jobs in the MOU, and Vice President Marv Borell performed it most creditably. The James Ford Bell Museum again made its facilities available for that meeting, and the affiliated clubs of the Twin Cities area continued taking their turns at serving refreshments. The many excellent speakers deserve special thanks, of course. During field trips the Duluth, Albert Lea, and West Central clubs were wonderful hosts these past two years. The committee chairmen, whose names have appeared in this magazine many times, and the members of their committees did many important jobs that had to be done. The MOU Representatives of affiliated clubs were important MOU Board members.

To all these fine people, and to those whom I have overlooked, let me express a most sincere thanks. Their support of the MOU has made it all possible. To your new president, Marv Borell, and to all other MOU officers present and future, I want to wish success in leading a fine organization.

As for myself, I want to thank you members for making me your president in 1969 and 1970. I can truly say that it has been an honor and a pleasure. Here's wishing all of you good birding.

ROBERT E. TURNER



sandhill cranes at the carlos avery wildlife area

By Wm. H. Longley

Photos by the author

Once there were two species of cranes nesting in Minnesota, but the huge Whooping Crane (*Grus americanus*) did not survive long in the state after settlers arrived. Dr. Thomas Sadler Roberts saw one in 1879. There were few records after that. The last two Whooping Cranes known in the state were shot near Roseau in 1917. Only a handful of Whooping Cranes now exist, although they once nested in many states and provinces. Their story is quite familiar as in recent years much publicity has attended their annual migrations, their nesting success, and their wintering in the Arkansas National Wildlife Refuge in Texas.

The other crane species in North America is the Sandhill Crane (*Grus canadensis*), which has been classified into four subspecies: Lesser, Greater, Florida, and Cuban Sandhill Crane.

Of these subspecies, only the Lesser Sandhill Crane (formerly called the Little Brown Crane) still exists in fair numbers, and it is numerous only because its nesting grounds in far northern Canada, Alaska, and adjacent Siberia are relatively unmolested by men. The other subspecies, like so many of the large creatures on earth, could be doomed to extinction as they are crowded out by the prolific human being. The Greater Sandhill actually was thought to be extinct. These cranes nested in what was to become the choice agricultural areas of

America, across southern Canada and most of the United States. Plowing of the land, drainage of the marshes, shooting of cranes for food or out of curiosity, and the necessary shyness of so large a bird — all of these were elements in the tremendous reduction of nesting cranes.

The Greater Sandhill, once conspicuous in the prairie marshes, persisted after 1915 only in very small numbers and only in remote, inaccessible wooded swamplands. Only a few are left now in Michigan, Wisconsin, Minnesota, Idaho, Oregon, Alberta, and British Columbia. Although they may have increased slightly in the past 50 years, according to the book *The Sandhill Cranes* by Lawrence Walkinshaw, their numbers are a mere remnant of the early days, and they remain precariously scarce.

Reports in recent years suggest that a few pairs have nested in northwestern Minnesota, where an occasional pair is seen in summertime. The only concrete evidence of nesting that has come to my attention is the subject of the present writing.

At the federal Patuxent Research Refuge in Maryland a flock of sandhills has been kept for several years in hope that they might provide a source of stock for release in some areas that once were graced by these elegant birds. But, to date, no young have been produced by these captives.

The following story is unique, then, and may be one of hope. It concerns the production of young by a captive male crane and a wild female. It concerns the endangered Greater Sandhill Crane at the

William Longley holds the title of Game Biologist, Minnesota Division of Game and Fish, Carlos Avery Game Research Center, Forest Lake, Mn. 55025.

also endangered Carlos Avery Wildlife Management Area in Anoka County, Minnesota. "Carlos Avery" is a remnant of a great wiregrass (sedge) marsh that extended through Anoka County from near Stacy to Fridley.

Our story begins in the summer of 1960 when a farmer in Roseau County captured a young Sandhill Crane too young to fly. He kept the bird in a barn until the word got out and a game warden confiscated it. The crane was brought to the Carlos Avery Game Farm, where its primary wing feathers on one wing were clipped. It was turned loose to live with the geese inside the large fenced area called the "goose pond". This area occupied 7 or 8 acres. Later the crane was to have the freedom of 30 acres or more containing three ponds. Usually 200 or more geese plus numerous mallards kept him company. I came to Carlos Avery about the same time as Old John, in 1960.

Not aware that a Sandhill Crane is a hardy creature, the game farm employees kept the big bird in a small shed during his first two winters. Early in April 1962, soon after releasing him from winter quarters, the men heard the wild rattling calls of a pair of cranes. Old John (as we had come to call him) had been joined by a mate!

A female crane had circled down out of the sky, parachuting on those huge wings to

Old John's side. At the moment, of course, no one was sure whether or not the second crane was a female, and, as I recall, there was really no sign of courting or nesting activities that first year. The new bird, however, was smaller and browner than John and, therefore, likely to be a female.

The two big birds stalked around together all summer, hardly out of each other's sight for a minute. Then in August Old John was captured for his annual wing-clipping and sent away to the Minnesota State Fair for a 10-day stay. After his ordeal, he was welcomed back by the female, and once again they kept close company until late in the fall. In December, the female flew away — southward.

Around the Game Farm no one gave much thought to the spring migration of sandhills. These birds were just not seen in this eastern part of the state any more, even though some still nested in northwestern Wisconsin. Years ago, in 1932, W. J. Breckenridge watched a nest somewhere north of the Twin Cities. The location of this nest was not mentioned in Dr. Roberts' book, *Birds of Minnesota*, probably to prevent disturbance by over enthusiastic bird watchers.

So no one here was really expecting another sandhill to visit us in 1963. But on

SANDHILL CRANES (adults left, young right.)



April 12 she did drop in. It was a female for sure, as later events proved, and we like to think it was the same female returning for the second year. This time there was courtship dancing, and soon a nest was built. It was in a cattail patch at the north pond, so I'm told by the game farm employees.

The nest's presence was kept a secret, again to prevent unnecessary disturbances. Unfortunately, heavy rains apparently spoiled the nesting, and a second attempt which produced at least one egg was also unsuccessful. The pair of cranes remained together, except during the 10 days when Old John was on display at the State Fair, until near Christmas time. Then the female went south again without him.

It was very late — April 23 — when the female crane dropped in again at the Carlos Avery Game Farm in 1964; so the pair wasted little time in dancing up a storm and producing a couple of eggs. The nest was built in the cattail patch of the big goose pond, the pond farthest from the buildings. Two young hatched on May 29, when I captured one and photographed it. Two days later I rescued one of the youngsters which, attempting to swim across the corner of the pond, had become entrapped and exhausted in a heavy growth of duck weed. This young one was smaller than its sibling and remained so into the fall.

From early spring until mid-June the adult cranes had been noisy and conspicuous, but then they became secretive. Where earlier the pair would walk in the open, as along the field roads, in July they kept in hiding when anyone was in the goose pond area. I felt they were flightless while molting. In August the family became conspicuous, but they were not vocal. They frequented a plowed field and the goose pasture.

I do not know just when the young first began to fly; it was no later than August 21. At that time I noticed the two young and the mother would run and lift up on their "slow motion" wings when pressed closely — while the wing-clipped male stalked away from intruders.

On about October 3 one young one disappeared, and later we heard reports of a lone immature crane staying near St. Francis about 25 miles to the northwest. The female and the other young stayed on with Old John. In October the three cranes again became vocal, and occasionally the three

danced, jumping high in the air. Old John with his one wing clipped was not exactly graceful.

Finally, John was deserted after mid-December when his family went south for about 4 months. All winter he stayed with the flock of Canada geese near the pumphouse on the lee side of the spruce windbreak. Corn and pelleted feed were provided for these birds, and such fare kept John in good condition as well.

On April 11, 1965, a migrant crane (presumably the adult female) returned for the fourth year in succession. Near the end of April the male spent most of his time pacing along the north-fence and looking over the cattail marsh and past the distant trees. Occasionally the female came from that direction to join him. Apparently she was nesting beyond the fence. Game farm employees felt that one nesting attempt was flooded out; then a second nesting was successful. At any rate, one young crane came with the female to the game farm in the fall. In October a photographer for the Minneapolis Tribune took many pictures for an article that appeared in the Picture Magazine section on November 28, 1965. I last saw the two "flying" cranes that season on December 3, though they may have remained here a few days longer.

The female returned on April 4, 1966. Again she nested somewhere on the Carlos Avery Game Refuge, but away from the goose pens. Game farm employees reported seeing two young about half-grown, but they could give no dates. Apparently our pair of cranes had produced five young in three years.

On April 14, 1967, we saw five cranes circling overhead and calling to Old John and his mate. What are the chances that these were the five young which this pair had raised in the preceding 3 years? Probably they are remote, but it's an interesting possibility.

The Sandhill Crane story took a new turn in 1967. The female came back from the south on March 31. During April she was spending much time away from the home base and may have been nesting. Suddenly John died. There had been no premonition; he merely was found dead one day in April at the age of 7 years.

There is no record of events immediately thereafter. We know not of his mate's reaction, if indeed she knew of his death, or



YOUNG SANDHILL CRANE

Carlos Avery Game Farm
May 29, 1964

if she was busy at some hidden nest site and had not returned. Alvin Johnson, the game farm manager, promptly informed Art Hawkins of the loss. Art, with the U.S. Bureau of Sport Fisheries and Wildlife, arranged to have another male crane shipped in from the Patuxent Research Refuge in Maryland. This bird had been received at Patuxent in 1962 from the Malheur Refuge in Oregon and arrived at Carlos Avery in late May 1967.

Sandy, the new male (marked with wing-tag No. 4), was released into the pond area. Almost immediately the female appeared overhead and joined him. Although they stayed together the rest of the year, there was no sign of nesting.

About December 22 Alvin Johnson noted

that both cranes were missing. It did not seem that Sandy could possibly complete a migration although he could fly to some extent. Apparently his wing feathers had been clipped a bit too early and had grown enough to permit clumsy flight. We think he tried to fly south, but he ended up 110 miles west near Glenwood, Minnesota, where he was captured by a farmer. So he was brought back home after a two-week sojourn.

During 1968, the seventh year of the cranes, the female again returned on March 31. On April 5, three cranes were seen about 2 miles northeast. Perhaps this was Sandy's mate with another pair. On April 15, Sandy's mate was in the field across the road from the game farm while Sandy paced back and forth along the fence trying to figure

out a way across. A pair of cranes then flew in to join her. One of the new arrivals danced a few steps with the female, but the third bird soon interfered and stopped the music. Hopefully this pair might nest nearby.

For a couple of days Sandy paced the fence while his mate was away. Perhaps she was nesting somewhere to the south. Then the weather turned very cold, and the mate returned. For at least 3 days (April 24-26) the pair was back together in winter quarters by the pumphouse. Then she was gone again for a few days while Sandy paced back and forth along the fence. Later it was apparent that nesting in 1968, if any, was unsuccessful.

The female did not migrate south in 1968 (nor in 1969) but spent the winter with Sandy. Most of the time they could be found out by the pumphouse, or on sunny days on the south side of it. About April 10 the female began flying out of the south. Occasionally, she went only as far as across the road and seemed to want Sandy to join her. On April 17 she flew very high and circled southward, calling continuously. She was gone for 5 or 6 days.

Then one morning I saw her walking on the black-top highway along the south edge of the goose pens. Sandy also saw her. As she neared the fence he rushed to greet her, with a great wing-fluffing display.

In 1969 I saw very little of the cranes during May and June. I felt that the female may have attempted nesting, but there was no evidence of success, and the pair stayed together near the goose pond all summer and fall.

They were together in the winter, too, until the female died on February 6, 1970, after a long cold spell. The story did not end there, however. Sandy still stayed by the pumphouse and stalked around the south pond.

On April 7, 1970, Sandy was alone when I walked through the pen. Most unusual, on that day he followed me, unobtrusively, staying back 20 to 30 yards. Finally, when I turned toward him, he gave up the game and walked away. Two days later the first migrant cranes appeared. Just two birds were seen about 2 miles north of the game farm. The next day a new crane was with Sandy. Her (as I believe it is a female) coloring was very brownish as was Old John's first mate during the spring and summer. Both male

cranes, on the other hand, were gray during the entire year.

On April 12 the pair was not inside the fence, but I heard them rattling loudly and found them in a sedge-cattail swamp just a ¼ mile away. They returned to the game farm field 2 days later, where I saw them walking along the outside of the fence. The female flew up into the strong wind and alit inside. It was necessary to walk right up to Sandy, however, before he ran and flew with much difficulty up and over the fence.

It was not until May 21, six weeks later, that I heard the cranes again. No doubt they had taken residence in the swamp. They were raising a mild ruckus on June 3, and I located one at the far end of the swamp. After some minutes the female also came into view. I attempted to sneak up close, thinking there might be young ones with them. As luck would have it, I flushed a deer whose crashing through the trees gave warning, and the cranes stalked away. For many minutes the cranes stood among some aspen trees, more or less hiding, always watching in my direction. I saw no sign of young.

The pair returned to the fence on June 25 and were seen there occasionally in July. Evidently they did not nest successfully if, in fact, they nested at all in 1970. The pair is still in the vicinity at this writing (October 1970).

In summary, the original male crane and his mate(s) probably produced five young in six breeding seasons. The second male has been here for three seasons, but has produced no offspring to our knowledge. From reports of refuge patrolmen and others, wild cranes may be established as breeders in the vicinity of Carlos Avery Wildlife Management Area. Maybe there is only one pair living out there somewhere, but it seems like a beginning.

The importance of this series of events is pointed up by the following quote from a letter by Mr. Art Hawkins: "The Greater Sandhill is usually associated with rather remote surroundings. In the few places (Michigan, Wisconsin, Mississippi) they occur within easy reach of the public, they are highly prized. To have them present in the wild (along with the restored Canada goose) at the doorstep of a major city like the Twins is beyond the wildest dreams of the nature lover. Old John, his mates, and their offspring proved that this is possible".

the 1970 summer season

By Robert P. Russell, Jr.

SUMMARY: Observers this summer noted 214 species of birds (excluding migrant shorebirds), of which breeding evidence was found for 141 species, the highest number of breeding species in many years.

Coverage is a bare minimum of what it should be, and the absence of several species from the list (Lark Bunting, Blue Grosbeak, etc.) is more due to a lack of observers in their range than scarcity of the birds themselves. When was the last time you saw a report from Koochiching, Kittson, Todd, or Dodge Counties? Vast areas of the state such as the Superior National Forest and northwest prairies are rarely reported on. If we could receive a lot of reports from, say, the Superior National forest, we might be able to predict winter invasions of certain fishes before they happen. Try to recruit one more observer for the seasonal report.

The presence of several rare Minnesota specialties enlivened a rather dull birding summer. The Great Gray Owl nest made it onto Canadian TV before the most of us had even heard about the bird! The presence of a Magpie and Baird's Sparrow in the northwest only reflects how little we know of the summer birds of the northwest prairies. The Swainson's Hawk was recorded from Goodhue Co., where there appears to be an isolated colony of these birds, judging from previous records. The nesting of semi-feral Trumpeter Swans several miles from where they were introduced is heartening. The number of lakes that these birds could nest on is quite tempting to ponder over. (See R.E. Turner, *The Loon*, Dec. '65).

Several species extended their known breeding range: Bald Eagle, Osprey, Ring-necked Duck, Black Duck, and Western Grebe. All of these showed a southward movement, and perhaps a few were influenced to remain south by the cool May weather. Several species of warblers also showed this trend as did the Pine Siskin and Red Crossbill which both nested as far south as the Twin Cities. Northward movements

were quite limited this summer. The Mockingbird continued to show up in unexpected spots, and it seems clear that the mocker is a regular summer resident in Minnesota. Where its main breeding area is remains a question.

Several birds were surprising because of the few reports received. The Screech Owl, Towhee, Whip-poo-will are a few that the careful reader will find. The Cooper's Hawk remains rare, and studies in the East have shown DDT and other pesticides to be partially at fault. The bird remains regular at Duluth in the hawk migrations, due perhaps to the lack of pesticides in the northern forests. Gone are the days when every fair-sized wood held a pair of Cooper's. Several species returned after a year or two's absence: Eared Grebe and Spruce Grouse, are examples of this.

Overall, it appeared to be a good nesting year for passerines, but dry conditions ruined many duck nestings in the northwest. That rare mammal, the Blackfooted Ferret, was sighted in South Dakota only 35 miles west of the Minnesota line in June. Brief notes on mammal observations or any phenological data will be appreciated to make this report more interesting.

A few observations were rejected for lack of details. Birds out of season, out of place, rare, or in some other way unusual should have details about their sighting.

WEATHER: June's temperatures averaged 1 to 4 degrees above normal throughout the state, 4 to 5 degrees above normal in the northwest, where there was heavy evaporation. Only Two Harbors had below-normal temperatures during June. Precipitation was 1 to 3 inches below normal throughout the state. Heaviest one-day rainfall was on 6-16 at Ada, 2.99 inches. Most rainfall in June was recorded at Pelican Rapids (7.7 inches) and the least at Cotton (1.24 inches). Temperature extremes ranged from 30 degrees at Cotton (6-19) to 104 degrees at Redwood Falls (6-29).

July temperatures averaged 0.5 to 2 degrees below normal in the south, but 2 to 4 degrees above normal in the central and north, with Grand Marais 6.9 degrees above normal. July precipitation showed no general pattern. Local storms were common, but the north central and northwest had sub-normal rainfall. Many marshes and potholes in the northwest dried up, causing

some waterfowl losses in July. Heaviest one-day rainfall was at Milaca (7-14, 4.3 inches), heaviest rainfall for the month was at Windom (8.3 inches), and the least for July at Hawley, Clay Co. (0.42 inches). July temperature extremes ranged from 38 degrees at Bigfork and Thorhult on 7-20 to 99 degrees on 7-25 at Faribault and Zumbrota.

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 WDM, Wynn and Don Mahle
 MM, Mary H. Muehlhausen
 JP, J.P. Perkins
 OR, Orwin A. Rustad
 TS, Terry Savaloja
 ETS, Evelyn T. Stanley
 RT, R.D. Tryon
 BTV, Brother Theodore Voelker
 EW, Elsie Welter
 Staff, Agassiz National Wildlife Refuge staff.

Common Loon: nested in Wright, Crow Wing, Washington, and Chisago Co's; also reported from Pope, Carver (KH), Meeker, Hennepin, Stearns, Anoka, Cass, Morrison, Lake, and St. Louis Co's. Increased numbers noticed in the southwest part of its range.

Red-necked Grebe: nested in Wright Co. (Sugar Lake, ETS); also reported from Duluth 6-8 MMC (2) and Marshall Co.

Horned Grebe: 6-1 Duluth JCG, late migrant. Also reported from Marshall Co. Once nested throughout the midwest; this and the following species (which nested farther west) have never recovered from the plume hunters of the early 1900's.

Eared Grebe: reported from Marshall Co. (Agassiz National Wildlife Refuge) and Lyon Co. (PE).

Western Grebe: nested in Nicollet (7-26 Swan Lake, 2ad ly, DB) and Kandiyohi (Sunburg Lake "nested in August" BAH) Co's. Also reported from Pope (Simon Lake), Grant, and Marshall Co's. Local but spreading in recent years.

Pied-billed Grebe: nested in Mille Lacs, Kandiyohi, Swift, Pope, Washington, Wright, and Stevens Co's; also reported from Winona, Crow Wing, Hennepin, Marshall, Meeker, Carver, and Ramsey Co's. No summer reports from the NE in over 7 years! Why??

White Pelican: 6-24 Upper Red Lake, Beltrami Co. (4), MM; 6-21 Bear Lake, FREEBORN Co. (17), Mrs. Lucius Lackore; 7-12 Fish Lake, DULUTH (12), MMC and 7-14 Fish Lake (18), Mrs. C. McManus, *fide* JCG. Also reported from Marshall and Lac Qui Parle Co's.

Double-crested Cormorant: 6-21 Barnum, Carlton Co. Ron L. Huber, *fide* JCG; also reported from Kandiyohi, Swift (2 areas, BAH), Marshall, Pope (Lake Johanna colony active, BAH), Stearns (SW corner), St. Louis (Duluth harbor) Co's.

Great Blue Heron: nested Mille Lacs, Hennepin (Champlin, 200 birds, KH) and in St. Louis Co's. Reported from 12 other counties throughout the state.

Green Heron: nested in Mille Lacs (Onamia, MI), Carver (9pr, KH), and Crow Wing Co's. Also reported from Redwood, Pope, Stevens, Sherburne, Ramsey, Anoka, Wabasha, Lyon, Winona, Wright, Hennepin, Marshall Agassiz NWR, (no details), and Carlton (6-21 Barnum, Ron L. Huber *fide* JCG) Co's.

Common Egret: Somewhat reduced this year; 7-15 Agassiz NWR, MARSHALL Co, refuge staff; also reported from Winona, Pope, Hennepin, Ramsey, Grant, Wabasha, Washington, and Stearns (705 Belgrade, 12, LAF) Co's. Lake Johanna (Pope Co.) colony active.

Black-crowned Night Heron: nested near

Mountain Lake, Cottonwood Co. (100 ad and y in July) LAF. Also reported from Stearns, Grant, Hennepin, Marshall, Pope, Freeborn, Ramsey, Dakota, and Kandiyohi Co's.

Yellow-crowned Night Heron: present during July and August at LaCrescent, Houston Co. with 6 young seen on 7-28, BTV.

Least Bittern: reported from Carver, Hennepin, Nicollet, Winona, Wright, and MARSHALL Co's.

American Bittern: nested in Mille Lacs Co. (Onamia, MI); also reported from Duluth and Anoka, Meeker, Winona, Stearns, Crow Wing, Marshall, Hennepin, Beltrami, Wright, Murray, and Chippewa Co's.

TRUMPETER SWAN: a pair nested near Watertown, Carver Co., the first wild nesting in this century in Minnesota. The adults were killed by humans. These birds originated with the captive flock at Carver Park nearby. This is the first major attempt to establish this species in a settled area, and it may prove successful if indiscriminate killing by sick-minded people can be stopped. The Carver Park Nature Center, Box 690, Excelsior 55331, requests they be informed if swans are seen more than five miles from the Center. (Any swan seen in summer in nearby regions would probably be this species.)

Whistling Swan: 6-29 Wabasha, Wabasha Co. DWM (possibly the above species?).

Canada Goose: nested in Carver and Anoka Co's; also reported from Ramsey, Washington, Pope, Carver, Hennepin, and Marshall Co's.

Mallard: nested in Morrison, Hennepin, Mille Lacs, Carver, Cass, St. Louis, Ramsey, Chippewa, Anoka, Swift, Pope, Dakota, and Wright Co's. 25 nests throughout the state averaged 6.6 young per nest, down 1.4 from last year.

Black Duck: nested in St. Louis Co. (Duluth, 1 ad 7y, MMC) and RAMSEY Co. (White Bear Lake) 7-18 (1 y) Shiela Cunningham *vide* EC, southernmost recent nesting record for the state.

Gadwall: nested Lyon Co. ("very common, several broods" PE); also reported from Mahnomen and Marshall Co's.

Pintail: nested in Swift and Wright Co's; also reported from Jackson Co. and Marshall Co. Quite scarce this season.

Green-winged Teal: reported from Mille Lacs, Carver, Marshall, and Lyon Co's and Duluth.

Blue-winged Teal: nested in Mille Lacs, Carver, Cass, Jackson, Ramsey, Pope, Swift, Washington, and Wright Co's.

American Widgeon: reported from Marshall and Carver Co's.

Shoveler: 6-5 Stearns MC; also reported from Marshall and Carver Co's.

Wood Duck: nested in Ramsey, Anoka, Winona, Wright, Hennepin, Mille Lacs, Lyon, Jackson, Swift, and Carver (25 nesting pairs, KH) Co's; also reported from Crow Wing, Marshall, Pope, St. Louis (Duluth), and Wabasha Co's.

Redhead: 7-24 Onamia, Mille Lacs Co. (4 y) MI; late July, Peterson Lake, Crow Wing Co. (9 y) JB, TS; also reported from Grant, Lyon, Jackson, Hennepin, and Marshall Co's.

Ring-necked Duck: nested in Mille Lacs and POPE Co's (Bangor Township, 7-16, 9 imm, BHA, on a prairie marsh). This is the farthest southwest the species has been found nesting in Minnesota, although the species did nest at Clear Lake, Iowa,

just over the border (A.C. Bent, *Life Histories of North American Birds*). Perhaps the species is recovering old breeding areas. Also reported from Morrison (Randall), Crow Wing, and Marshall Co's.

Canvasback: nested in Stevens Co. (Morris, 7-16, 7 y and 6 y, BAH) and reported from Marshall Co's.

Common Goldeneye: nested at Lake Vermillion, St. Louis Co. where DWM found 2 broods (8 and 14 y); also reported from Duluth.

Lesser Scaup: reported from Duluth (8-8 KE; and 6-29, 12, MMC) and Swift Co., 3 on 6-13, BAH.

Greater Scaup: 6-8 Two Harbors, Lake Co. (pr.) JCG, possibly late migrants.

White-winged Scoter: 6-1 Duluth JCG and 6-18 Duluth (6) MMC.

COMMON SCOTER: 6-14 Duluth one seen MMC.

Ruddy Duck: nested in Swift Co; also reported from Ramsey, Lyon, Mille Lacs, Jackson, Hennepin, and Marshall.

Hooded Merganser: nested in Crow Wing and St. Louis Co's; also reported from Winona, Marshall, and Mille Lacs Co's.

Common Merganser: nested in St. Louis Co. (inland); also reported from Cook and Lake Co's.

Red-breasted Merganser: reported from Cook, Lake, and St. Louis Co's.

Turkey Vulture: reported from Cass (2 areas), Beltrami (Bemidji), St. Louis (Lake Vermillion), and Winona Co's.

Goshawk: reported from Agassiz NWR, Marshall Co.

Sharp-shinned Hawk: increased reports from Lake, St. Louis, Winona, Stearns, Becker, Carlton, and Aitkin Co's.

Cooper's Hawk: 8-1 Wright ETS and 8-9 Duluth KE, only reports! Apart from the NE part of the state, the Cooper's Hawk is fast becoming a rare species in Minnesota. Pesticides may be a cause.

Red-tailed Hawk: nested in Winona (3 nests, 8 y), Wright, and Carver (3 y in nest, KH) Co's. Reported from 11 other counties throughout the story.

Red-shouldered Hawk: reported from Wabasha, Winona Co's. and 7-25 St. Francis, Anoka Co., CH.

Broad-winged Hawk: reported from St. Louis, Lake, Cook, Itasca, Crow Wing, Mille Lacs, and Hennepin Co's.

Swainson's Hawk: 6-27 Welch, GOODHUE Co, DB.

Bald Eagle: Reno, HOUSTON Co., June, nest and 1 y, FL, BTV; Lake Vermillion, St. Louis Co., adults and y DWM.

Marsh Hawk: reported from Stearns, Dakota, Washington, Wright, Carver, Crow Wing, Marshall, and St. Louis Co's.

Osprey: nested in Mille Lacs in Co. (7-30, 2 ad and 2 y) MI; also reported from Cass, Crow Wing, St. Louis, and Aitkin Co's.

Sparrow Hawk: nested in Winona Co. and reported from 21 other counties throughout the state.

Spruce Grouse: July, Lake Vermillion, St. Louis Co., ad and 2 y, DWM.

Ruffed Grouse: nested in Mille Lacs, Anoka, Washington, St. Louis, Aitkin, and one rather westerly report (6-13 Brooten, Stearns Co; BAH). Also reported from Lake Marshall, Crow Wing,

Beltrami, Winona, and Cook Co's. Apparently at the peak of their cycle in most sections of Minnesota.

Sharp-tailed Grouse: reported only from Marshall Co.

Ring-necked Pheasant: nested in Cottonwood, Nobles, Dakota, and Anoka Co's. Reported as "widespread" in Freeborn Co. but scarce in Wabasha and Pope Co's.

Gray Partridge: 6-6 Nobles Co. (2) HSH.

Sandhill Crane: summered at Agassiz NWR, MARSHALL Co.

Virginia Rail: nested in Hennepin (Long Lake) and Wright (Pelican Lake) Co's; also reported from Ramsey Co.

Sora: nested in Wright, Hennepin, Jackson, Mille Lacs, and Crow Wing Co's; also reported from Anoka, Carver, Kandiyohi, Stearns, Swift, Marshall, and Winona Co's.

Common Gallinule: nested in July at LaCrescent, Houston Co. (7 y) and at Whitewater, Winona Co. (6 y) BTV.

American Coot: nested in Kandiyohi, Swift, Stevens, Chippewa, Ramsey, and Hennepin Co's; also reported from St. Louis, Carver, Pope, Marshall, Nobles, and Winona Co's.

Piping Plover: 7-2 Duluth (ad and 3 y) J.P. Perkins; 6-2 to 7-29 Duluth (1-2) RL.

Killdeer: nested in Mille Lacs, Stearns, Winona, Anoka, and Dakota Co's; also reported from 19 other counties.

American Woodcock: nested in Mille Lacs, Wright (ETS), and Winona Co's (BTV); also reported from Cook Co.

Common Snipe: nested in Mille Lacs and Nicollet Co's; also reported from Benton, Morrison, Lake, Marshall, and Carver Co's, and Duluth.

Upland Plover: nested in Anoka and Hennepin Co's (Met. Airport); also reported from Clay, Felton, Beltrami, and Benton Co's.

Spotted Sandpiper: nested in Carver, Mille Lacs, Crow Wing, Ramsey, and Anoka Co's; reported from 13 other counties throughout the state.

WILLET: 6-18 Mud Lake, Traverse Co. (2) EC, BL. The first summer record of a pair in many years.

Marbled Godwit: reported only from Swift Co. Wilson's Phalarope: nested in Clay Co. (6-18 Felton, 4 eggs, RG, BL and EC).

GLAUCOUS GULL: 6-1 Duluth 1 immature JCG.

Herring Gull: nested in St. Louis and Mille Lacs Co's. (2 nests on Mille Lacs, MI). Also reported from Pope, Lake, Beltrami, and Cook Co's.

Ring-billed Gull: nested on Mille Lacs (50 nests, MI); also reported from St. Louis and Marshall Co's.

Franklin's Gull: reported from Marshall, Nobles, Stearns, Pope, Swift, Stevens, and Meeker Co's.

Bonaparte's Gull: 6-2 to 6-3 Duluth RL.

Forster's Tern: nested at Grass Lake, Hennepin Co. (VL) and in Wright Co; also reported from Wabasha, Nobles, Jackson and Watonwan Co's.

Common Tern: nested in Duluth (100's of nests hatching on 6-17, 18 J.P. Perkins) and Mille Lacs Co. (about 50 nests, MI). Also reported from Marshall, Crow Wing, Morrison, Wright, and Pope Co's. Terns seen on small lakes, potholes, and

marshes are more likely to be Forster's Terns.

Caspian Tern: 6-1 Mille Lacs (17), 6-3 (4), 6-7 (1) MI, all at the south end of the lake; 6-15 Spirit Island, Mille Lacs MI, 1 but no nesting; 6-2 to 6-3 Duluth RL; 6-22 Duluth JCG; 6-5 to 6-7 Deerwood, Crow Wing Co. MKC and 6-7 Lake Pulaski, Wright Co. BAH. After last year's first state nesting at Leech Lake and the number of birds seen at Mille Lacs this June, observers should check the larger lakes in the north central part of the state. Perhaps this species has a firm foothold there.

Black Tern: nested in Mille Lacs, Swift, Wright, Ramsey, and Pope Co's. Reported from 13 other counties from Nobles to St. Louis Co's.

Mourning Dove: nested in Hennepin, Mille Lacs, Winona, Ramsey, Washington, Anoka, and Wright Co's. Reported from 16 other counties.

Yellow-billed Cuckoo: nested in Winona Co; also reported from Freeborn, Aitkin, Washington, Hennepin, Winona, and Wabasha Co's. One NE record: 7-2 Floodwood, St. Louis Co. (2) MMC.

Black-billed Cuckoo: excellent number this summer. Nested in Wright and Winona Co's. Also reported from Freeborn, Carver, Anoka, Mille Lacs, Stearns, Pope, Murray, Houston, Hennepin, Nicollet, Ramsey, Cottonwood, Marshall, Crow Wing, Morrison, and Aitkin Co's. NE reports where the bird is uncommon include St. Louis Co. (6 reports, 4 from Duluth), COOK Co. (JCG), and 7-20 Beaver Bay, LAKE Co., ME.

Screech Owl: 7-31 Freeborn Co. Only report!

Great Horned Owl: nested in Winona, Swift and Mille Lacs Co's; also reported from Marshall, Aitkin and Stearns Co's.

GREAT GRAY OWL: second Minn. nesting: Pinecreek, Roseau Co., Robert W. Nero. See details in September 1970 *Loon*.

Barred Owl: nested in Ramsey and Winona Co's; also reported from Wabasha, Crow Wing, Aitkin and St. Louis Co's.

Long-eared Owl: Agassiz NWR, Marshall Co., 5-24 (3 eggs), 6-26 (2 hatched, 1 sterile), Tom Atkins and Thad Fuller; 6-9 Malmo, Aitkin Co., RJ.

Short-eared Owl: 7-14 Gnesen Twp., St. Louis Co., KE; 7-1 Adrian, Nobles Co. HSH.

Whip-poor-will: scarce; reported only from Wabasha and Winona Co's.

Common Nighthawk: nested in Winona and Washington Co's. (7-1, 1 y, RJ); also reported from 13 other counties from Cook to Nobles Co.

Chimney Swift: nested in Mille Lacs Co.; reported by most observers throughout the state.

Ruby-throated Hummingbird: nested in Winona and Mille Lacs Co's; also reported from Cook, St. Louis, Beltrami, Marshall, Crow Wing, Stearns, Wright, Hennepin, Washington and Wabasha Co's.

Belted Kingfisher: nested in Morrison, Mille Lacs and Wright Co's.

Yellow-shafted Flicker: nested in Wright, Mille Lacs, Hennepin and Cass Co's.

Pileated Woodpecker: nested in Hennepin (July, Mound, 1 y, KH); also reported from St. Louis, Crow Wing, Meeker, Carver and Winona Co's.

Red-bellied Woodpecker: nested in Winona and Carver Co's. (Victoria, 1 y, July, KH); also reported from Wabasha and Goodhue Co's.

Red-headed Woodpecker: nested in Wright,

Wabasha, Wright, Mille Lacs, Carver, Stearns (Brooten, BAH), and Cottonwood (1 pair, LF) Co's.

Downy Woodpecker: nested in Mille Lacs, Wright, Ramsey and Carver Co's.

Eastern Kingbird: nested in Anoka, Carver, Wabasha, Cass, and Mille Lacs Co's; reported by most observers throughout the state.

Western Kingbird: scarce this summer; nested in Anoka Co.; reported from Marshall, Wright and Crow Wing (MM) Co's; 6-17, Minn. Pt., DULUTH, RL.

Great Crested Flycatcher: nested in Hennepin, Wabasha, Mille Lacs, St. Louis, and Redwood (Redwood Falls, 1 ad and 3 Y, 6-27, LF) Co's; reported from 13 other counties including COOK (Lutsen 6-22 and 27 JCG) Co.

Eastern Phoebe: nested in Crow Wing, Mille Lacs, Pope, Anoka, Winona and Washington (Parasitized by cowbirds) Co's.

Yellow-bellied Flycatcher: 6-2 Hennepin, VL, migrant; 6-19 to 22 Duluth, Normana Twp. MMC; 7-2 Floodwood, St. Louis Co. MMC; 8-8 Duluth KE, migrant.

Trail's Flycatcher: reported from St. Louis, Cook, Winona, Crow Wing, Murray (7-1, HSH), Hennepin, and Meeker Co's.

Acadian Flycatcher: 6-1 Beaver Creek State Park, Houston Co., 2 nests, 1 under construction, 2nd damaged by storm, FL.

Least Flycatcher: nested in Mille Lacs Co; also reported from Lake, Winona, Beltrami, Crow Wing, Hennepin, Wright, Carlton, Washington, St. Louis, Cook, Marshall and west to Brooten (Stearns Co.) and Lake Johanna (Pope Co.,) BAH.

Eastern Wood Pewee: nested in Mille Lacs; reported by most observers throughout the state.

Olive-sided Flycatcher: late migrants: 6-11 Hennepin PF; 6-2 Hennepin VL; 6-8, 6-14 Duluth MMC; on territory: 6-30 Sawbill Trail, Cook Co. JCG.

Horned Lark: nested in Clay and Winona Co's. and reported by most observers in the state.

Tree Swallow: nested in Ramsey, Wabasha, St. Louis, Hennepin, Mille Lacs, Carver, Wright, Rice, Anoka, and Pine Co's.

Bank Swallow: nested in Morrison, Wright, and Mille Lacs Co's; 7-22 Wright, 125+ gathering for migration, ETS.

Rough-winged Swallow: nested in Morrison, Wright, Winona, and Hennepin Co's; northeast records where the bird is irregular include Duluth, Lester River, and Clifton Twp. in St. Louis Co.

Barn Swallow: nested in Morrison, Winona, Wright, Hennepin, Mille Lacs, Carver, Chisago, Pope, and Anoka Co; reported from 13 other counties.

Cliff Swallow: nested in Crow Wing, Wabasha (Plainview, 50 pr.), Cass (Gull Lake, 50 pr.), Mille Lacs, St. Louis (Eveleth 75 nests; Split Rock 150 nests) and Lake Co's. Also reported from Morrison, Washington, Cook, Winona, Beltrami, and Marshall Co's.

Purple Martin: nested in Wabasha, Stearns, Mille Lacs, Aitkin, and Wright Co's. Also reported from Marshall, Cottonwood, Swift, Ramsey, Crow Wing, St. Louis, Lake, Winona, and Washington Co's. KE noticed a pre-migratory gathering at Duluth of 2000 on 7-30.

Gray Jay: reported from Cook and Itasca (Marcell) Co's.

Blue Jay: nested in Ramsey, Winona, Wright, Hennepin, and Mille Lacs Co's.

BLACK-BILLED MAGPIE: 7-16 Agassiz NWR, Marshall Co. (staff).

Raven: reported from Beltrami, Lake, Cook, and St. Louis Co's. (Normana Twp. peak of 20 in June, MMC).

Crow: nested in Mille Lacs Co.

Black-capped Chickadee: nested in Ramsey, Mille Lacs, Cottonwood, and Hennepin Co's.

Tufted Titmouse: reported only from Winona Co.

White-breasted Nuthatch: nested in Ramsey, Wright, Washington, and Mille Lacs Co's.

Red-breasted Nuthatch: nested at Crosby, Crow Wing Co. (7-15, pr. feeding 2 y, JB); also reported from St. Louis, Lake, and Cook Co's.

Brown Creeper: 7-5 Copas, WASHINGTON Co. (2) EC; also reported from Beltrami Co.

House Wren: nested in Ramsey, Wabasha, Hennepin, Mille Lacs, Freeborn, St. Louis, Rice, Wright, Carlton, and Marshall Co's.

Winter Wren: nested in Lake Co.; reported from Cook Co.

Long-billed Marsh Wren: nested in Wright Co; reported from Anoka, Winona, Crow Wing, Marshall, Meeker, and Carver Co's. One NE record: 6-19 Grand Marais, Cook Co., JCG.

Short-billed Marsh Wren: nested in Mille Lacs Co; reported from Houston, Carver, St. Louis (Floodwood, 36+, MMC), Meeker, Marshall, Ramsey, Cook, Winona, Crow Wing, and Hennepin Co's.

Mockingbird: 6-14 Floodwood, St. Louis Co. MMC; 6-18, 6-29 Wabasha, Wabasha Co. DWM; 6-21 Royalton, Morrison Co. DB; 6-23, 6-27 Lutsen, Cook Co. JCG; and 7-10 Stillwater, Washington Co. Mrs. Jon L. Willand, Residents of Lutsen familiar with the species from the south told JCG that the Mockingbird has been present there since the 1950's and was quite regular. This report is strengthened by sightings of juvenile birds along the North Shore in recent years.

Catbird: nested in Ramsey, Mille Lacs, Cass, Anoka, and Wright Co's. Reported north to Cook Co. (Lutsen, Hovland, JCG).

Brown Thrasher: nested in Ramsey, Wright, Hennepin, and Mille Lacs Co's.

Robin: nested in Ramsey, St. Louis, Winona (10 nests yielded 3.2 y per nest, BTV), Hennepin, Stearns, Mille Lacs, Anoka, Wright, Washington, and Carlton Co's.

Wood Thrush: nested in Goodhue Co; also reported from Winona, Hennepin, Houston, and Carver Co's; NE reports from Duluth (June, July, MMC), Lake (7-4 Beaver Bay, ME), and St. Louis (6-2, 6-20, Clifton, JCG) Co's.

Hermit Thrush: reported from Lake and Cook Co's. One extralimital observation: 7-18 Emily, Crow Wing Co. (singing bird) JB.

Swainson's Thrush: reported from Lake, Cook, and St. Louis Co's. Late spring migrant: 6-1 Ramsey EC.

Veery: nested Mille Lacs and in Anoka (6-2, 4 eggs; 6-10, 4 y, William H. Longley) Co's. reported from Crow Wing, St. Louis, Lake, Cook, Marshall, Stearns (6-13, 2 mi s of Brooten "many" BAH), and Carver Park, CARVER Co. (one singing male in June & July KH).

Eastern Bluebird: nested in Wright, Cottonwood, Hennepin, Mille Lacs, Cass, Morrison,

Wabasha, Chisago, Washington, Rice, Anoka, and Pine Co's. Reported from Crow Wing, Stearns, Carver, Winona, Pope, St. Louis, Carlton, Beltrami, and Meeker Co's.

Blue-gray Gnatcatcher: nested in Goodhue and WASHINGTON Co's (St. Croix, EC); also reported from Houston Co. (Beaver Creek SP).

Golden-crowned Kinglet: reported only from Cook Co.

Ruby-crowned Kinglet: 6-5 to 6-8 Duluth City, MMC; 6-8 Duluth Twp. JCG; reported from Cook Co.

Sprague's Pipit: 6-13 Felton, Clay Co. (4) DB. Cedar Waxwing: nested in Mille Lacs, Wright, Crow Wing, and Carlton Co's; reported from 11 other counties.

Loggerhead Shrike: reported from Dakota (Rosemount), Sherburne, and Wright Co's.

Starling: nested in Swift, Hennepin, Mille Lacs, and Anoka Co's.

Bell's Vireo: nested at Kellog, Wabasha Co. (June, 1 pr. and 4 y, BTV).

Yellow-throated Vireo: nested in Wright Co. (3 areas); reported from Crow Wing, Hennepin, and Winona Co's.

Solitary Vireo: reported from Cook, Cass, and Crow Wing (7-18 Emily, JB, TS, MKC).

Red-eyed Vireo: nested in Mille Lacs, Wright, Crow Wing, and Anoka Co's; also reported from Carlton, Cottonwood, Marshall, Cook, Stearns, St. Louis, Carver, Pope, Lake, Meeker, and Hennepin Co's.

Philadelphia Vireo: 6-2 to 6-10 Duluth MMC; 6-21 Duluth JCG, MMC; 7-2 Floodwood, St. Louis Co. MMC; and 7-3 Clifton, Duluth Twp. JCG.

Warbling Vireo: reported from Nobles, St. Louis (Duluth), Cottonwood, Wright, Carver, Aitkin, Wabasha, Anoka, Winona, Mille Lacs, Hennepin, Pope, Meeker, Marshall, Crow Wing, and Lake (Beaver Bay; Gooseberry SP, ME) Co's.

Black-and-white Warbler: nested in Crow Wing Co.; reported from Cook and St. Louis Co's. (6 reports).

Prothonotary Warbler: nested in WASHINGTON Co. (St. Croix River, 2 ad and 1 y on 7-5, EC.)

Golden-winged Warbler: nested in Mille Lacs Co.; reported from Becker, Crow Wing, Washington (7-5, EC), and St. Louis Co. Gnesen Twp. 1, seen and 2 heard at 3 different localities, MMC).

Blue-winged Warbler: nested in Winona Co. (July, 4 y) BTV and reported from Houston and Goodhue (Vasa) Co's.

Tennessee Warbler: reported from Cook, St. Louis (Clifton 7-3,8,9 JCG), and Hennepin (6-6 VL, late migrant).

Nashville Warbler: reported from Cook, Lake, St. Louis, and Crow Wing Co's.

Parula Warbler: 7-18 Emily, Crow Wing Co. (one carrying food, MKC); also reported from Becker, Cook, and St. Louis Co's.

Yellow Warbler: nested in Wright, Mille Lacs, and Meeker Co's; reported from Marshall, Crow Wing, Cass, Beltrami, Ramsey, Stearns, St. Louis, Carver, Pope, Nobles, Lake, Wabasha, and Anoka Co's.

Magnolia Warbler: 6-14 to 6-20 Duluth MMC; 6-30 Duluth MMC; quite unexplainable was a singing male at the T.S. Roberts Sactuary, HENNEPIN Co, 6-26 DB. Also reported from Cook and Lake Co's.

Cape May Warbler: 6-19 Grand Marais, Cook Co. JCG; 6-29 Sawbill Trail, Cook Co. JCG. and 7-9 Howland, Cook Co. JCG.

Black-throated Blue Warbler: 6-11 Isabella, Lake Co. JCG; "In June and July in Cook Co. (within 20 miles of the shore) 10 different localities, more than usual", John C. Green *vide* JCG; 6-22 St. Louis Co. (Normana Twp) MMC.

Myrtle Warbler: reported from St. Louis, Marshall, Cook, and Beltrami Co's.

Black-throated Green Warbler: reported from St. Louis, Lake, Itasca, and Cook Co's.

Cerulean Warbler: reported from Stearns (Collegeville), Houston (Beaver Creek), Goodhue (Vasa), Winona, and Washington Co's.

Blackburnian Warbler: nested in Itasca (Marcell) and CROW WING Co's (Emily 7-18, 1 adult and 1 y; Deerwood, June and July; MKC, TS, JB); also reported from Cook, Lake, and St. Louis Co's.

Chestnut-sided Warbler: nested in Mille Lacs MI; also reported from Itasca, Beltrami, St. Louis (Floodwood 7-2 23 MMC), and Crow Wing Co's.

Bay-breasted Warbler: reported from Marshall Co. (Agassiz NWR) only!

Pine Warbler: 6-21 Becker Co. DB; nested in Crow Wing Co. and reported from 3 localities there.

Palm Warbler: 7-29 Duluth MMC, probably early migrant.

Ovenbird: nested in Crow Wing Co. and reported from Washington, Goodhue, St. Louis, Carver, Lake, Marshall, Mille Lacs, Winona, and Cook Co's.

Northern Waterthrush: 7-18 Duluth KE; also reported from Cook Co.

Mourning Warbler: late migrants: 6-3 Mille Lacs MI; 6-3 Houston FL; 6-4 Hennepin DB; 6-8 Hennepin VL; 7-14 WASHINGTON Co. *vide* EC; also reported from St. Louis, Lake, Itasca, Crow Wing, and Cook Co's.

Yellowthroat: nested in Carver and Mille Lacs Co's; also reported by most observers throughout the state.

Canada Warbler: nested in Crow Wing (Emily 7-18 MKC) and St. Louis Co's. (cowbird, Lake Vermillion, DWM); also reported from Cook, Lake, and St. Louis Co's.

American Redstart: nested in Mille Lacs, Wright, Crow Wing, Winona, and Stearns Co's; also reported from Cook, Lake, Wabasha, Carver, Hennepin, St. Louis, Goodhue, and Ramsey Co's.

House Sparrow: nested in Mille Lacs, Stearns Co's.

Bobolink: nested in Mille Lacs Co.; reported from 17 other counties in good numbers this year.

Eastern Meadowlark: nested in Mille Lacs Co.; reported north to Marshall, Itasca (Big Fork), and St. Louis Co's.

Western Meadowlark: reported east to Wabasha, Winona, Wright, and St. Louis Co's. (6-8 Duluth MMC).

Yellow-headed Blackbird: nested in Mille Lacs, Morrison, Ramsey, and Anoka Co's; also reported from Washington, Wabasha, Carver, Winona, Hennepin, Pope, Nobles, Marshall, Cass (Wolf Lake JGH), St. Louis (7-5 Virginia, BAH) Co's. One old but worthwhile record: one male, summer 1968, Vaseux Lake, COOK Co, Raymond L. Nelson, formerly with the National Park Service at Grand Portage National Monument. This is the farthest northeast record for Minnesota. The lake is located on the Canadian

border! *National Parks* magazine, December 1970.

Red-winged Blackbird: nested in Mille Lacs, Hennepin, Anoka, Ramsey, and Wright Co's.

Orchard Oriole: reported from Winona, Wabasha, Lyon, and Traverse Co's (6-18 EC, BL).

Baltimore Oriole: nested in Wright, Hennepin, Carver, Mille Lacs, Cass, Wabasha, Ramsey, Crow Wing, and Anoka Co's.

Brewer's Blackbird: nested in Morrison and Mille Lacs Co's; reported from St. Louis, Hennepin, Lake (Beaver Bay), Beltrami, and Cook Co's.

Common Grackle: nested in Hennepin, Mille Lacs, Stearns, Wright, and Ramsey Co's.

Brown-headed Cowbird: parasitized nests of Catbird, Canada and Chestnut-sided Warblers, Rose-breasted Grosbeak, and Red-winged Blackbird, and Grasshopper Sparrow.

Scarlet Tanager: nested in Mille Lacs and reported from Beltrami, Winona, Cook, Wright, Hennepin, Crow Wing, and Stearns Co's.

Cardinal: nested in Hennepin, Ramsey, and Washington Co's; reported from Wabasha, Winona, Wright, Freeborn, Carver, and Stearns Co's.

Rose-breasted Grosbeak: nested in Hennepin, Mille Lacs, Ramsey, Wright, and Washington Co's.

Indigo Bunting: nested in Mille Lacs and Washington Co's; reported as very common in the northern parts of its range (Duluth, many reports; Cook Co. 7 localities JCG; Beltrami "many" MM).

Dickcissel: reported from Carver, Hennepin, Cottonwood, Meeker, Pope, Freeborn, Dakota, Anoka, Washington, Wabasha, Winona, and Wright Co's. Most observers report the bird had left (or become secretive?) by late July.

Evening Grosbeak: nested in Crow Wing Co.; reported from Cook, Lake, and St. Louis Co's.

Purple Finch: nested in Mille Lacs, Crow Wing, and St. Louis Co's; also reported from Marshall Carlton, Beltrami, Stearns, Cook, and Cass Co's. JCG banded 58 at Duluth on 7-21.

Pine Siskin: last year's invasion repeated; nested at Fairbault, RICE Co., 6-22 (2 ad, 2 y) Mrs. Paul Weaver; HENNEPIN Co. 8-10 (1 y) Mrs. E.W. Joul; 5-8 (1 y) RT; 6-14 (ad feeding 2 y) EH and reported as very common by other Twin Cities observers; 6-10 Carver (5) MM; 6-15 Stearns (6) MC; 6-3 Duluth (100) MMC; 7-17 Duluth 29 banded JCG; small flocks all summer KE; also reported from Crow Wing Co.

American Goldfinch: nested in Mille Lacs and Wright Co's. and reported from 20 other counties.

Red Crossbill: nested in Crow Wing Co. (5-31 Emily, 4 y JB); WASHINGTON Co (3 y left by 6-11, R. Jackson); St. Louis Co. (Virginia 5-2, 2 y, Nels Hervi); 6-15 Duluth (25) MMC; 6-14 Minnehaha Creek, Hennepin Co. (12) VL.

Rufous-sided Towhee: reported only from Winona and Crow Wing Co's.

Savannah Sparrow: nested in Mille Lacs and Carver Co's.

Grasshopper Sparrow: nested in Nobles Co. and reported from Aitkin (July, JB), Anoka, Wabasha, Winona, Carver, Clay, Pope, and St. Louis Co's (Floodwood 7-2, MMC).

BAIRD'S SPARROW: 6-13 Felton, Clay Co. (2) DB. Perhaps this rare species nested there this year?

LeConte's Sparrow: 6-24 Beltrami MM; 7-2 Floodwood, St. Louis Co. MMC.

Henslow's Sparrow: reported only from Winona

Co.

Sharp-tailed Sparrow: 6-21 Waubun, Becker Co. (3) DB.

Vesper Sparrow: nested in Dakota Co. and reported from 13 counties north to Pope and Crow Wing Co's.

Lark Sparrow: nested in Anoka Co. and reported from Winona and Wabasha Co's. (Sand Prairie, BTV).

Slate-colored Junco: possibly nested in Crow Wing Co. (1 juvenile seen on 8-2, TS). Reported from Beltrami, St. Louis, Lake, and Cook Co's.

Chipping Sparrow: nested in Anoka, Crow Wing, Ramsey, St. Louis, Mille Lacs, Cottonwood, Wright, and Washington Co's.

Clay-colored Sparrow: nested in Mille Lacs; reported from Lyon (PE), Wright, Stearns, Crow Wing, Hennepin, Marshall, Meeker, Washington, Anoka, St. Louis, and Cook Co. (6-17 Grand Marais, JCG).

Field Sparrow: reported from Anoka, Washington, Wabasha, Winona, and Hennepin Co's.

White-throated Sparrow: reported from St. Louis (53 at Floodwood 7-2, MMC), Cook, Lake, Crow Wing, and Itasca Co's.

Swamp Sparrow: nested in Wright and Mille Lacs Co's; reported from Crow Wing, Stearns, Anoka, Cook, Lake, St. Louis, Winona, and Meeker Co's.

Song Sparrow: nested in Ramsey, Mille Lacs, Carver, and Wright. Reported by most observers throughout the state.

Chestnut-collared Longspur: 6-18 Felton, Clay Co. (4 y, one day old) RG, EC, BL; 6-13 Felton (4-5) DB.

MIGRANT SHOREBIRDS

Semipalmated Plover: 6-1, 6-4 Mille Lacs MI; 6-16 Duluth (5) J.P. Perkins.

Black-bellied Plover: 6-3 Duluth RL.

Golden Plover: 6-2 Mille Lacs MI, 6-2 Duluth RL.

Ruddy Turnstone: 6-2, 6-8 Duluth RL.

Solitary Sandpiper: 7-27 Mille Lacs MI.

Greater Yellow-legs: 6-18 Traverse Co. (2) EC, BL. Probably FALL Migrant! Cold front passed through on 6-17. Species recorded in Illinois same day (also after front).

Lesser Yellow-legs: 7-16 Pope Co. (2) BAH; 7-17 Duluth (4) J.P. Perkins; 7-19 Mille Lacs (2) MI; 8-2, 8-8 Clay Co. EW.

Pectoral Sandpiper: 7-26 Mille Lacs MI; 7-17 Duluth (4) J.P. Perkins.

White-rumped Sandpiper: 6-1 Mille Lacs MI.

Baird's Sandpiper: 7-16 Mille Lacs MI; 8-2, 8-8 Clay Co. EW.

Least Sandpiper: 7-25 Mille Lacs 5 MI; 8-2, 8-8 Clay Co. EW.

Dunlin: 6-2 Mille Lacs MI; 6-3 Duluth RL.

Stilt Sandpiper: 7-26 Mille Lacs MI.

Semipalmated Sandpiper: 6-6 Mille Lacs 5 MI; 7-10 Mille Lacs 3 MI; 7-16 Swift 10 BAH; 6-2, 6-8, 6-15, 7-23, 7-25, 7-29 Duluth RL.

WESTERN SANDPIPER: 6-1 Mille Lacs 1, MI. Details?

HUDSONIAN GODWIT: 8-8 Morehead Lagoon, Clay Co. EW. Details? A rare bird in fall.

Northern Phalarope: 6-7 Mille Lacs MI.

Sanderling: 6-16 Duluth J.P. Perkins; 7-20, 7-23 (25), 7-26 to 7-30 Duluth RL.

first DIPPER record for minnesota

By Mary H. Muelhausen

Birds were hard to find on our North Shore trip this past year: 1-28-70 to 1-30-70. Coming back from Grand Marais, we stopped at the Temperance River, where the water was open and flowing swiftly. I could hear chickadees and I saw a Downy Woodpecker.

Discouraged, I scanned the open water with binoculars. I spotted a small, gray, short-tailed bird, watched it walk under water twice, then return to view. It also dipped or did knee bends, as a Dipper does. The snow was piled too high on the roadside to use the scope on the car. However, I rested the scope on my husband's shoulder and got a better view of the bird. I have no doubt that the bird was a Dipper.

My husband and I have seen Dippers a number of times, in the Black Hills, Yellowstone, and Glacier National Parks. The day was cloudy but visibility was good. The bird was 100 to 150 feet from the road. *Route 5, Box 218A, Excelsior, Minn. 55331.*



additional DIPPER sightings in 1970

By Janet C. Green

During the next few weeks this bird was seen by a great number of people, usually, but not always, on the Temperance River. The other sightings were on North Shore streams where there was a little bit of open water, usually near the mouth of the river. The Temperance River had the longest and shallowest stretch of open water and was also easily accessible from the highway. This may be why the bird was most often spotted there, although several times the bird could not be found on any of the accessible bits of open water. At these times it may have been along the shore of Lake Superior or on streams with open water not near the highway. There has been some speculation that there was more than one Dipper because of the distances between the rivers where it was seen. This has to remain pure speculation because there were never two sightings in different rivers on the same day. The observations that indicate something about the movements and behavior of this bird will be mentioned below.

- Jan. 29: First seen in the Temperance River by Mary Muelhausen, who phoned me that evening.
- Jan. 30: Not seen in the Temperance; Marge Carr and I searched that river only.

- Jan. 31: Seen in the Cascade River (19½ miles northeast from the Temperance) late in the afternoon by Marge and Bill Carr, *et al.*
- Feb. 1: Seen in the Poplar River (half-way between the Temperance and the Cascade) in the morning by Marge and Bill Carr, Rex and Liz Campbell, *et al.*
- Feb. 7: Not seen in Temperance, Poplar or Cascade by my husband and me, but seen in Temperance (but not Poplar or Cascade where they also searched) by Bill Litkey and Hap Huber.
- Feb. 8-22: Seen by many people and always in the Temperance River.
- Feb. 18: Seen, and also heard singing in the Temperance by Bob Janssen and me (if anyone else heard the bird singing, I would like to know about it).
- March 7: Seen in the Temperance River by Evelyn Stanley.

No other observations until April, but this may be because everyone who wanted to see the bird already had.

- April 4: Seen in the Baptism River (21 miles southwest of the Temperance) 1½ miles above the mouth of the river by Brent Haglund, a biology student from U.M.D. who was there on a winter camping trip.



Photo by Janet C. Green, February 8, 1970



Dipper on the North Shore, January 1970
Photo by Rex Campbell

birdfinding in minnesota...

A SEASONAL GUIDE

Robert B. Janssen

- I. **Regular** — Those species that can be expected to occur somewhere in Minnesota every year during one or more of the seasons: 292 species.
- II. **Casual** — Those species that are not expected to occur in the state every year but because of the proximity of their breeding range or migration route to Minnesota, or because of their propensity to wander, they should occur at frequent intervals: 24 species.
- III. **Accidental** — Species that are not expected to occur again, or to occur only at very infrequent intervals: 50 species..

To go about seeing as many of the regular species as possible and a few of the casuals in one year, a person would have to visit many areas of the state at different times of the year. The following list gives some idea of areas in the state which would produce the largest list. They are not the only areas that provide good birdwatching. There are many other local areas that are unknown to us which would provide excellent birdwatching.

Some areas are being destroyed through drainage or population expansion, other areas are being created through reforestration or flooding. Habitat is ever changing.

The following trips are based on an observer located in the Twin City metropolitan area. The species listed after the area are only a sampling of some of the groups. More unusual species may be encountered, and most of the common species found in Minnesota will be found in these areas.

JANUARY

Black Dog Power Plant — south of Minneapolis off Highway 35W at the Minnesota River. Also the Mississippi River in St. Paul. Both areas provide open water for ducks, including Barrow's Goldeneye.

Mississippi River at Read's Landing — along Highway 61. More open water for ducks and Bald Eagles. As many as 30 to 40 eagles may be seen in this area.

Rochester — Silver Lake near power plant. Wintering Canada Geese and other waterfowl. Between 10,000 and 15,000 Canada Geese winter on this lake. Occasionally the rare Ross' Goose is seen.

Hastings, Vermillion River — take State Highway 291 to State Hospital, then follow a county road along the Vermillion River to the Village of Etter. Much open water. Wintering hawks; also owls, blackbirds, some water birds. In open country surrounding Hastings, Lapland Longspurs, Snow Buntings, redpolls and Gray Partridge.

FEBRUARY

North Shore of Lake Superior — Highway 61, Duluth to Grand Marais. Boreal Forest birds, Evening and Pine Grosbeaks, crossbills invasion species such as Great Gray Owl, Boreal Owl, and Hawk-Owl. Waterfowl on open like: Oldsquaw, Harlequin Duck, Herring Gull, and Glaucous Gull. A side trip up Highway 1 or Lake County 2 to Ely may produce Ruffed and Spruce Grouse, and at Ely you may possibly see the Chukar around the old iron mines.

MARCH

Minnesota River Valley — Shakopee to Mankato along Highway 169, include both sides of the river. Early spring migrants, especially watertowl, ducks and geese.

Twin City area — Lake Harriet Refuge, Glenwood Park — good for early migrants.

APRIL

Salt Lake — in Lac Qui Parle County on the Minnesota-South Dakota border 2 miles north of Highway 212. A fascinating place for geese, including the White-fronted Goose, ducks (a tremendous variety), Whistling Swans, early shorebirds, migrating sparrows, and longspurs.

Lake Traverse Big Stone Lake — western border of the state north of Ortonville, White Pelicans, Western Grebes, geese, and ducks.

Rothsay Wildlife Area — in Wilkin County northwest of Fergus Falls on Highway 52. At southeast entrance of Village of Rothsay take first county road straight west 9 miles to Rothsay Prairie. Prairie Chickens should be booming. Other prairie species.

Swan Lake — Nicollet County northwest of Mankato on Highway 14 to Nicollet, west on 14 for about 2 miles, then north to the southern end of the lake. There are other access points to the lake, but they are difficult to locate. Have a map of the area and inquire with local residents. An excellent lake for marsh birds, Western (breeding) Red-necked and Eared Grebes, Common Gallinule, and Least Bittern, seen in May and during summer. Middle lake to the east is also an excellent lake for marsh birds.

MAY

Vasa-Frontenac — in Goodhue County. Vasa birding area is along Belle Creek on Highway 19 just west of the Village of Vasa. Blue-winged Warbler, Louisiana Waterthrush, Ruffed Grouse, many migrating warblers, sparrows, flycatchers, etc. Frontenac along Highway 61 and the Mississippi River is an excellent place for spring migrants, warblers, some shorebirds (depending on water level), gulls, terns, hawks (including Turkey Vulture), thrushes, and swallows.

Salt Lake — (see April above for location). Excellent for shorebirds. Most species seen in the state can be found, including many phalaropes and dowitchers. The Knot and Buff-breasted and Sandpiper have been recorded. Upland Plover, Willet, and Lark Buntings may be seen.

Winona-Houston County — along Mississippi River on Highway 61 to LaCrescent then Highway 26 to Brownsville and Reno. Ask Brother Theodore Volker at St. Mary's College in Winona for specific directions to species. Henslow's Sparrow and Bell's Vireo at Winona, and Yellow-crowned Night Herons nesting at LaCrescent. Orchard Orioles, Whip-poor-wills, and possibly Yellow-breasted Chat in Houston County.

Duluth Minnesota Point — Minnesota Point, located beyond the lift bridge in downtown Duluth, is one of the best places to observe migration in the state. Shorebirds, warblers, vireos, sparrows, thrushes, flycatchers and waterfowl on the lake including Red-throated Loon and scoters.

JUNE

Felton Prairie Area — Clay County, 2 miles south of Felton on Highway 9, turn east into Clay County Gravel Pit. Area to east and north is original prairie. Chestnut-collared Longspurs, Sprague's Pipit, Marbled Godwit, Grasshopper Sparrows, possibly Baird's Sparrow and Prairie Chicken.

Lake and Cook Counties — in northeastern part of the state, north of Lake Superior. Whole area in coniferous forest zone is good for breeding vireos and warblers. Near Little Marais there are good areas for Black-throated Blue Warblers and American Woodcock. Check with Janet Green in Duluth for directions.

Frog Lake - Stevens County — 4 miles south of Alberta. Breeding Western Grebes and other waterfowl and marshbirds..

Agassiz National Wildlife Refuge — Marshall County. Large concentrations of marsh birds, thousands of nesting Franklin's, Gulls. Many species of nesting waterfowl including Canada Geese, ducks and cormorants and other marsh birds.

Waubun Prairie Area — go north on Highway 59 to Mahnomen County line, take first road to left (west) go over tracks to marsh area. Yellow Rails, Sharp-tailed and LeConte's Sparrows, Marbled Godwits and Prairie Chickens.



JULY AND AUGUST

Twin City Area — depending on yearly water conditions, shorebirds return to this area the first week in July and continue to arrive throughout July and August. Any partially dried up lake or pond will normally have its complement of interesting shorebirds.

Rock County — several years ago the Blue Grosbeak was found in Minnesota. The only locality that it is known to occur in the state is the boundary road between Minnesota and South Dakota, south on Highway 16. Look for the birds sitting on the utility wires.

Duluth-Minnesota Point — (see above for location). Warblers and shorebirds are returning by mid-August as in the spring. This is a very good area to see migrants.

SEPTEMBER

Duluth — usually during the third week of the month the hawk migration is in full swing. Large concentrations are seen if the weather is right. Go to 45th Ave. East, turn left, go up hill to Skyline Drive. Stop on top of hill above city and watch to the northeast. On Minnesota Point the return of shorebirds is in full swing. Such species as Knot, Whimbrel and Buff-breasted Sandpipers may be seen and possibly even a jaeger very early in the month.

OCTOBER

One of the most interesting months of the year. Large numbers of migrant and resident birds are to be found throughout the state. During the pleasant days of October, birds may be found just about anywhere.

Rothsay Wildlife Area — (for location see above). Sandhill Cranes congregate here in early part of the month. In this general area large flocks of longspurs are seen at this time of year.

Lac Qui Parle Refuge — at Milan in Chippewa County go southeast on Highway 59 to marked entrance. See refuge manager Arlin Anderson for information. Large concentrations of Blue, Snow, and Canada Geese and waterfowl, plus Golden Eagles.

North Shore of Lake Superior — (see above for location). During latter part of the month many varieties show up in this area. Interesting waterfowl on lake, scoters and loons. The first winter visitants begin to show up at this time.

NOVEMBER AND DECEMBER

Red Lake - Northwestern Minnesota — during the latter part of November the Black-billed Magpie begins to appear from the west. Sharp-tailed Grouse can be found in Grygla-Gatzke area. Snow Buntings, redpolls, Hawk-Owl and other winter visitants.

Weaver Marshes — Upper Mississippi Wildlife Refuge — near town of Weaver in Wabasha County. Whistling Swans and other waterfowl.

During the latter part of December there are about a dozen Christmas Bird counts taken in the Twin Cities, Duluth, Rochester, Winona and other scattered localities. Those counts taken in the Twin City area normally produce anywhere from 30 to 45 species.

General:

As stated in the beginning there are many other excellent birding areas around the state, for example, the Carlos Avery Refuge just north of the Twin Cities in Anoka County, Sherburne National Wildlife Refuge in Sherburne County, Mille Lacs Lake (nesting gulls and terns), Tamarac National Wildlife Refuge in Becker County and Rice Lake National Wildlife Refuge in Aitkin County. The lake and marsh country of northern Kandiyohi County (north of Willmar,) Otter Tail County (Fergus Falls), Crow Wing County (north of Brainerd) and in Cass County (Leech Lake) are all good birding areas. The county surrounding Lake Vermilion in northern St. Louis County provides a wide variety of species.

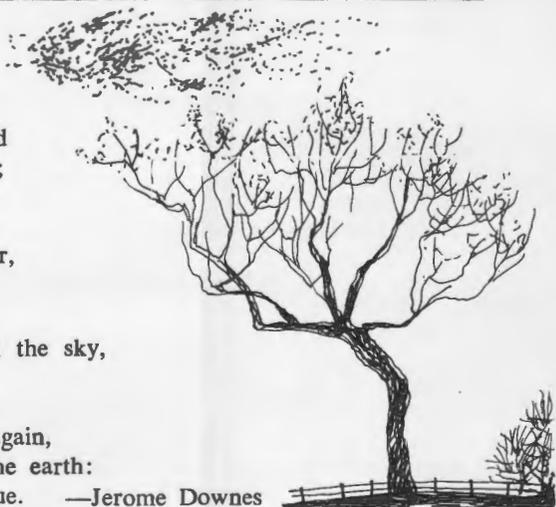
If you have any questions about the above, contact: Robert B. Janssen, 14321 Prince Place, Hopkins, Minn. 55343, phone 938-7464

THE FEAST OF ST. FRANCIS

Out of the northern sky
Some thousand birds descend to feed
And rest. Their cries surround us;
Young and lean, they feed and move
Like air itself: a short turn of wing,
Stiff feathers risen, the wings flutter,
Dip and hold near the branch.

Gathering up for flight, they swarm the sky,
Starting out, then turning back
To call the other branches clear.
High in the air, bunched and turned again,
They fly an unfettered flag above the earth:
Some random blacks, thin random blue.

—Jerome Downes



I Climbed HAWK MOUNTAIN

By O. A. Finseth

According to Maurice Broun, converting Hawk Mountain from a hunter's paradise to a mecca for bird watchers took some doing. In the early 1930's, up to 400 hawks a day were killed. Stopping this slaughter became possible only through the generosity of one Mrs. Chas. Noel Edge, who bought the 1,400-acre site on which the mountain stands from two elder brothers in Hazelton, Pa. That resulted in the formation of the Hawk Mountain Sanctuary. It's a hill in the Kittatinny Ridge of the Blue Mountains, 50 miles east of Harrisburg, Pa. It attracts people from all over the U.S. and some foreign countries every fall during hawk migration.

You can approach the hill from two directions. Either leave I-78 at Hamburg going north to Moline where you get 895 to Dreherstown and then east to the Sanctuary, arriving at the "Gate" before you reach the sanctuary office a little farther up the road. Or, follow I-78 to where 143 intersects and turn left to the cross road just below a little Pennsylvania Dutch village of Kempton, where a neat metal sign on a sturdy post points you due west, the road to the Sanctuary.

The Hill has been referred to as a "rockpile". If I use the term here it is in a descriptive and not deprecatory manner, and you would agree with me before reaching the 1,500-foot level. I remember pausing for breath on the trek up the mountain, reflecting that the most fitting description of this adventure in a few words would be the title of a best seller in a few years back: *The Agony and The Ecstasy* — the agony of that rock-strewn path up the hillside and the ecstasy of reaching at last that north summit and the pathway of the hawks. But we are getting ahead of our story.

Following the advice of the corner road sign, we headed west. Here I should pause to explain that this trip came about while visiting a daughter and son-in-law (Donna and Roy Peterson) in Baltimore, just 140 miles from Hawk Mountain. Knowing of my interest in birds, Roy suggested the trip and I promptly fell for it, only to discover it isn't easy. You have to climb for it. I somehow got the impression that the Sanctuary people are not over-anxious to advertise to the world that they have this interesting phenomenon right in their midst; no placards or posters anywhere in sight. Still, the Sanctuary is visited by 200 to 300 people per day during hawk migration.

A few miles up the road brought us to sanctuary headquarters. A white building on the right is the office with a sign over the door, "Open 9 to 5". On the roadside left is a large building called the "Common House". Evidently used as a meeting place for members of the sanctuary committee, it contains a number of skins and mounted specimens of the area (hawks and owls) and a wall display with samples of the 28 kinds of trees found in the Sanctuary.

A little farther up the hill and you are at the Gate. We were not the first visitors that morning, for several cars were already parked on the right side of the road. At intervals on the left are "No Parking" signs. Not just the ordinary metal signs, but stout upright posts, flattened and inscribed with letters burned in vertically for the height of the post.

There is no gate as such — just a shelter made from heavy, unpainted hardwood timber and one side-shelf lined with bird books. A very courteous Richard Sharadin was in charge that morning, answering questions and advising that, due to the wind direction that morning, we should go to the North Lookout. A Phoebe's nest was resting neatly on the roof plate just above the window ledge in the corner. Following Sharadin's instructions, we started up hill.

The first lookout, South Lookout, is

Ole Finseth, who is in his eighties, is a former president of the Duluth Bird Club and according to reports, one of that group's most enthusiastic birders and most vigorous hikers.

across the ridge from the entrance gate, where it overlooks a deep tree-lined valley that climbs to another ridge on the far side. From this lookout it is just possible to get a glimpse of the larger and more exposed North Lookout. Leading up to that is a well-worn mountain trail. If it ever was a dirt or gravel path, that is long past. With the soil worn away, it is a bed of rocks, large and small, that roll underfoot as you climb. Small trees have been cut to clear the path and their little stumps stand to trip the unwary. Half way up the hill are comfort stations and, at intervals, benches of unpainted hardwood — some old, weatherbeaten and weary-looking, others new and shiny. A warning sign tells you not to come in high heels. Perhaps there should be one not to attempt the hill after age eighty. Seeing, none, I plodded on.

The ascent becomes steeper as you climb. Some rocks are now large enough to serve as stepping stones, and a little farther on they have been arranged to make a fair enough stairway. Here slim hand rails from the nearby forest hardwoods are very welcome. You pause to study an excavation exposing a very fine, light gray sand, and a wooden plaque tells a very interesting story.

It relates that millions of years ago Pennsylvania was under a vast sea extending as far west as Kansas. Giant forces at work shaping the continents brought up and crushed layers of rock and sand, which became exposed as the waters receded. We were now standing on sand from the bottom of the ocean at the top of a mountain. This sand, someone, once dreamed, would be the basis of a giant glass-making industry. A railroad was built up from the valley to the north; you can still see the rails down there, but the dream vanished as the ocean had once before. The sand still remains to take your footprints if you pass that way, only they too wash away like that other dream. Geologists say the hill is a high outcropping of Tuscarora sandstone. The Indians called it "Endless Mountain".

The summit of this hill is really a sight to behold. Tilting slightly to the northeast, direction of the hawk flight, it is a jumble of rocks and boulders, some in the 20-ton class; and on this field of rocks more than a hundred hawk watchers were standing or sitting, all with eyes to the northeast whence come the hawks. Sitting can be less than

comfortable on those jagged rocks, and if by chance you go there you would be wise to tote a pillow or slip of a blanket to soften the impact of sharp rocks on the tender part of your anatomy.

The flight was a moderate one on the day we visited (Oct. 17), totaling some 575 as against 2,283 the day before, when the following were observed:

Bald Eagle	1	Osprey	84
Marsh Hawk	108	Peregrine	6
Pigeon Hawk	5	Sparrow Hawk	84
Goshawk	4	Cooper's	36
Sharp-Shinned	1,742	Broad Wing	66
Red-Shouldered	37	Red Tail	110
	1,897		386

Day's Total — 2,283

Accumulated total to Oct. 9 — 18,759

Unidentified to that date — 120

As we climbed the hill the loud honking of geese came down to us, evidence that frost was sealing the northern lakes. When we came into the open we could see them clearly as the V-shaped formation broke ranks, wheeled, and reformed as they sped on. They too were headed south, but unlike the hawks they disdained the thermals rising along the northeast-southwest ridges and headed straight south in search of the lakes and inlets that some of them had left the spring before. Their number far exceeded the flight of hawks that day — 5,467 said the checker at the top of the hill.

While the hawk flight over the Pennsylvania mountain does not equal or exceed the Lake Superior overflight at Duluth, Minnesota, just to climb Hawk Mountain would be a worthwhile experience even if there were no hawks riding the thermals above the hill. That view from the hilltop among the hemlocks, mountain laurels, and rhododendrons is one you will not soon forget, and it may be the magnet that draws so many people back to it year after year. 4610 W. 7th St., Duluth, Minn. 55807



notes of interest

A MINNESOTA GYRFALCON — On November 5, 1970, a gray Gyrfalcon was captured in the northeast corner of the Sherburne National Wildlife Refuge by Mr. Wesley Thompson, maintenance man at the refuge. The bird had a broken wing after being shot by a hunter and was in a near-starved condition. Mr. Tony Damer, local veterinarian, examined the bird, wrapped the wings. Then Robert Yoder (refuge manager), Homer McCollum (assistant refuge manager), and Robert Drieslein (biologist) cared for it. Efforts to save the bird failed, however, and it died on November 12. It is now preserved as a scientific skin at the Bell Museum of Natural History at the University of Minnesota.

Dr. W. J. Breckenridge, University of Minnesota, confirmed the identification and pointed out that definite sightings of this species have been reported only once in every 3 or 4 years in Minnesota. The Gyrfalcon is a resident of the far north, nesting in northern Canada and Alaska and only occasionally wandering south into the United States.

It is extremely regrettable that this rare and interesting bird should visit the Refuge and become the victim of an indiscriminant shooter. This again points out the fact that protection of all our hawks is absolutely essential to insure the survival of the rare Gyrfalcons, Peregrine Falcons, Bald Eagles, Ospreys and others. Unfortunately many people still recognize any hawk as a "chicken hawk". Anyone who observes someone molesting any of our protected birds of prey is encouraged to report the incident to his local game warden. *Robert Drieslein, Biologist, Sherburne National Wildlife Refuge, Box 158, Princeton, Minn. 55371.*

NOTE: Mr. Robert Janssen, in his recent review of bird records in Minnesota reports 20 records for the Gyrfalcon. Of those, three are represented by specimens in the Bell Museum, University of Minnesota. Three more are of birds shot and identified but not preserved; one is a bird trapped, presumably banded, and released. The remaining 13 records are sight records that appear to be authentic. All the Gyrfalcon records for Minnesota are winter records dating from November 1 through March. *W. J. Breckenridge, Director Emeritus, Bell Museum Nat. Hist., U. of M.*

NESTING RED CROSSBILLS, WASHINGTON CO. — From February through May, 1970, we fed up to 15 Red Crossbills at feeders in our yard, chiefly at a window feeder. On May 11 we were surprised to see what at first glance looked like large purple finches appear briefly at this feeder.

The purple finches had left the first of May; therefore on the return of these birds, we immediately observed the crossed bills and also the larger crown. There were three young birds, obviously Red Crossbills, which were soon joined by adults that fed them.

The adults continued to feed the young for a time, and then they left June 1. The young remained, taking care of themselves until June 11, exactly one month after they were first seen, at which time they left. The exact nesting location is unknown, but we are located close to the St. Croix River and heavy woods generally, with a ravine across from us — the probable nesting site. *Nancy A. Jackson, 805 W. Myrtle, Stillwater, Mn.*

CROSSBILLS AND SISKINS IN CHISAGO COUNTY. — On September 17, 1969, just when the cones of the red pines opened, about 24 Red Crossbills visited our yard. Besides pine seeds, they ate the sunflower seeds at our feeders, and 11 remained all winter. Their plumage developed a somewhat orangish color before the last of them left June 5, 1970.

We also had a lone female White-winged Crossbill for 3 or 4 days beginning January 5, 1970.

The Pine Siskins that were here during the winter of 1968 - 69 remained with us through the summer of 1969 and the winter of 1969 - 70. They finally left about August 10, 1970. *Mrs. Norman Larson, Taylor's Falls, Mn. 55084.*

PINE SISKINS PROBABLY NESTING, HENNEPIN COUNTY. — From December 7, 1969, through July 23, 1970, we had a constant flow of Pine Siskins coming to our trough feeder — some days as many as 40, which is a goodly number for a small city lot. They threw the big seeds on the ground, so Ed had a time-consuming task grinding sunflower seeds for the obstreperous rascals, and this worked admirably. Between grackles in the back yard and siskins in the side yard, other less pugnacious birds left our domain for easier-to-conquer fields.

On June 12, 1970, fourteen siskins came, and I heard a call that was unfamiliar to me. Could it be a young siskin? On June 13 we counted 16 siskins, among which was one that squealed and fluttered its wings as if demanding food. Some pecked at it, but one siskin acted as if it were going to feed the fluttering one. Then on June 14 we saw an adult at the trough feeding at least two siskins. That possibly indicates a nesting record for this area. *Mr. and Mrs. Edward F. Harms, 4236 Wooddale Ave. S., Minneapolis, Mn. 55416.*

GNATCATCHERS IN WASHINGTON COUNTY. — On July 4, 1970, my husband and I were on the St. Croix River about 3 miles north of Marine, closely watching the shoreline willows for Prothonotary Warblers. I saw, sitting quietly in the open, a small gray bird with eye ring, white breast, and short dark tail edged with white. We soon saw this bird being fed by another, which with its long tail was clearly a Blue-Gray Gnatcatcher. The tree and immediate area were busy with quick-moving forms, and the air was full of their high, nasal notes; but we were able to count only four separate birds for sure.

We returned at dusk and again on July 5. The entire gang remained in the area where first observed. The adults appeared to be making high foraging trips into basswood tops, but action centered within a large willow. We could hear the youngsters at all levels, and were sorry to be unable to make an accurate count.

On the 5th we also saw a pair of Prothonotary Warblers feeding a young bird. — *Rachel Maurer, 310 Fourth Street, White Bear Lake, Minnesota.*

MELANISTIC SWAINSON'S HAWK IN DULUTH — Ole A. Finseth heard of a black hawk on the outskirts of Duluth. He and Dr. P. B. Hofslund saw this bird on September 29th, 1970, and indentified it as a melanistic Swainson's Hawk.

The next day Marjorie M. Carr, Robert P. Russell, Kim A. Eckert, and I went out to try to find this hawk. It was hunting on the ground when we first spotted it (it had also been first seen on the ground the day before), and when we got within 75 feet of it, it finally flew to the top of a light pole nearby, where it remained. We walked right up to the pole, and after watching the hawk for a while we jumped up and down and waved our arms to get it to fly so we could see the under surface of its wings. When it flew it soared over us for a while, showing a slight dihedral in the wings, and finally it soared away out of sight.

I made the following notes.

Perched — almost all of the plumage dark brown (except head and under tail) with a few light dots on the wing coverts; head was lighter brown with golden brown eye line and some lighter mottling on the back of the head; chin dark brown; tail dark brown above, below paler showing fine barring with a wider sub-terminal dark bar; under tail coverts white with a few transverse dark bars on the longer coverts; cere and legs and feet bright yellow; bill dark; wings folded at rest while perched just slightly shorter than tail. Flying — small buteo shape; under wing linings (coverts) dark brown or black; primaries and secondaries underneath finely barred with grey and dark brown or black. At a distance in flight the whole under surface of the wing looked dark and the bird looked all black except for the ventral surface of the tail which was lighter and appeared grey.

Although melanistic buteos are difficult to identify, we all agreed that this bird was a Swainson's Hawk. Our close study convinced us that it was not the very rare melanistic Broad-winged Hawk because of its hunting habits and habitat, its tameness (the bird did not appear injured in any way), and the slight dihedral in flight. It was also not the more common melanistic Red-tailed Hawk or Rough-legged Hawk because of its small buteo shape and the all-dark wing linings (these two buteos have light flight feathers underneath that contrast with the dark plumage). The white under-tail coverts distinguish it from more exotic melanistic buteos.

The hawk had been seen about 3 weeks before we saw it. It was last seen October 4, 1970. *Janet C. Green, 9773 N. Shore Dr., Duluth, Minn.*

POSSIBLE IVORY GULL ON LAKE SUPERIOR This observation was made from a house on the shore of Lake Superior near the mouth of the Onion River in Cook County on October 28, 1970. We were sitting by our dining room windows watching a number of gulls on the lake near shore. Suddenly one crawled up the bank and began walking around on the ground in front of our motel, which is just west of the house where we were.

It was immediately apparent that this was not one of the Herring Gulls. It was smaller and more slender, and it was a beautiful clear white all over. Its legs were black, and through the glasses my sister noted that the bird had a round eye that looked yellow. The bird had a more graceful walk than the Herring Gull. It walked around in front of the motel investigating the various wild plants growing there until it got to the west of the building, then disappeared around the corner.

After a couple of minutes the bird reappeared and walked back to the point where it had climbed out of the lake. It then flew back onto the lake; as it flew the trailing black legs were conspicuous against the white body.

While the bird was in view my sister, Margaret Wallblom, observed it with binoculars as I read descriptive material from Peterson's *Field Guide to the Birds*. We instantly knew it was a gull we had not seen before; we concluded it must be an Ivory Gull. *Matilda Wallblom, Tofte, Minnesota 55615.*

RED-WING STRIKES LOW BLOW. CAN'T HE DISTINGUISH PILEATED FROM CROW? — In the spring of 1969 a pair of Pileated Wood-peckers excavated a nest cavity about 15 or 20 feet above ground in a power pole that stood close alongside a small pond in Chisago County. The entrance faced out over the pond. I first saw this pair of birds in June.

When I returned about August 1, the parents were feeding large youngsters in the nest cavity. The adults took turns with the feeding, one parent foraging in the nearby woods for about 15 or 20 minutes while the other stayed with the young in the cavity. When the foraging parent was ready to come in with a load of food, it would call ka-ka-ka-ka-ka from the nearby woods. Hearing that signal, the parent in the cavity would leave. Then the caller would come to the pole, feed the eager young, and eventually enter the cavity to await the signal that the other parent was ready to come in.

The villain of this story is a male Red-winged Blackbird. During my observations in August he would station himself on the power pole crossarm several feet above the Pileated nest hole. There he would squat or waddle about, muttering occasional curses.

Whenever a parent Pileated came to the pole to feed its young, it had to fly across the open area above the pond. And as it came flying across, the Red-wing would fly out toward the approaching Pileated, dive below it, and follow it in the last 20 feet to the power pole. During this last 20 feet or so of flight, the Red-wing would stab upward vigorously at the under-tail anatomy of the woodpecker. It appeared that the blackbird was driving its beak far up the woodpecker's vent and pecking viciously; and since the Red-wing never failed to attack, I was afraid that in time he would injure the victims seriously. But an observer who continued to watch these attacks daily told me that, although the attacks continued, the Pileateds survived, completed their nesting, and finally led their young from the nest.

I never determined whether the attacking male blackbird was always the same individual or whether several traded off in performing this harassment. The Pileateds seemed powerless to ward off the attacks, or else unmindful of them. Each attack ceased the instant the Pileated came to rest on the pole.

Why did the blackbird bedevil these big woodpeckers? Someone advanced the theory that the Red-wing was in the employ of the Northern States Power Company, stationed there to punish the Pileateds for damaging the pole. But I believe that the Red-wings mistook the Pileateds for crows, their enemies. Red-wings do attack crows.

In 1970 the Pileateds did not return to their pole by the pond, but a female Wood Duck was seen entering their old nest cavity. Later in the summer there were young Wood Ducks on the pond. *Robert E. Turner, Shafer, Mn. 55074.*

CATTLE EGRET NEAR WABASHA — At noon on October 27, 1970, Dr. D. G. Mahle of Wabasha phoned me that he had seen two Cattle Egrets in a field on Wabasha Sand Prairie. Mrs. Mahle had seen them about 4 o'clock on the previous afternoon. When the doctor was returning home for lunch the next day, he saw them at the intersection of County Road 74 and County Road 25.

Mr. and Mrs. J. Milton Dahm, Mrs. Harvey Gordon, and I set out about 1:30 p.m. that day for the prairie. We found the field with about 20 cows and 2 white horses without difficulty. A few minutes after parking on County Road 74, we observed that each white horse had a small white bird paying him court. With our binoculars it was easy to identify these small white birds as Cattle Egrets.

As the horses moved through the field munching grass, the egrets followed near the horses' heads picking up what insects were roused by the animals' movements. This must represent the latest date for these birds this far north in Minnesota. Both birds had disappeared by morning of the next day. *Brother Theodore Voelker, F.S.C., St. Mary's College, Winona, Mn.*

WRENS AND BLUEBIRDS are neighbors. — I always believed that wrens will not tolerate other birds, and in the many years that I have had wrens as friends I have found this to be true. But I came across an interesting exception last summer.

When I built a two-storey octagonal bird house and mounted it on a 7-foot piece of pipe, all the tenants I got in 1969 were House Sparrows. Again this spring the sparrows continued to dominate the house, and I cleaned it out several times. Eventually I saw a wren investigating the house, and she finally moved into an upper apartment. Then a bluebird moved into a lower one on the opposite side.

I watched these two birds and their families closely and noted that they had their differences. But I am sure that in the end they both raised two families during the summer of 1970.

By the way, in the past 3 years the Alma Rod and Gun Club has built and placed 200 bluebird nest boxes, and I am sure it has paid off. *Adapted from a letter (to Brother Theodoer Voelker) written by C. E. Breen, president of the Alma Rod and Gun Club, Box 396, Alma, Wis. 54610.*

UPLAND PLOVER IN WITH A FLOCK OF KILLDEERS — On October 4, 1970, while birding in the Lake Pulaski area near Buffalo, Minnesota, I saw a flock of 18 Killdeers feeding in a grassy meadow that had recently been mowed. As I was looking over the flock with my binoculars, I came across a bird that was decidedly not a Killdeer.

At first glance I thought that it was a Mourning Dove, since all I could see was the head sticking up from some grass. Further observation proved it to be not a dove, but an Upland Plover. It had the typical adult plumage and alighted in the characteristic fashion with the wings elevated. The birds fed in the field for 10 minutes, then flew off together over a hill. *Bruce A. Hitman, 7483 Brklyn. Blvd. No. 4, Minneapolis, Minn. 55429.*

LOUISIANA WATERTHRUSH IN STEARNS CO. — The Louisiana Waterthrush is an uncommon summer resident in southern Minnesota, the northernmost limit of its range in the United States. It is usually difficult to separate by sight from the common Northern Waterthrush, though the two are readily separable by song.

I had just seen and heard several Louisianas in Red Wing the second week of May, so the song was fresh in my mind as Paul Egeland and I were birding on May 16, 1970, at Collegetown, Stearns County. As we approached a wooded section of a small stream I heard distinctly the Louisiana Waterthrush song. Paul was unfamiliar with the song, but we both agreed that the song was quite different from the Northern Waterthrush's which is easily recognized.

I knew that we were somewhat north of the Louisiana's usual range, so we moved closer to locate the bird. It sang a couple more times and then stopped as we approached, though it continued to give the characteristic waterthrush "chip". There was no other bird in the immediate area.

Finally we got a glimpse of a waterthrush just before it disappeared for good. It was then I was sure we had a Louisiana Waterthrush, since there was no other bird that could

have been singing, and because the Northern song is very much different from what we were hearing. This probably represents one of the most northerly records in Minnesota for this species. *Kim R. Eckert, 1004 Ashland Ave., Wilmette, Illinois.*

LARGE LONGSPUR MIGRATION IN SW MINNESOTA - On April 4, 1970, Paul Egeland and I were birding extensively for early migrants. We started at dawn in Lyon County and drove northwest through Yellow Medicine and Lac Qui Parle County. From 8 to 11 a.m. we covered about 50 miles, stopping frequently to listen and watch for waterfowl.

We were surprised to hear flocks of longspurs (presumably Lapland) constantly fly over at every stop we made. Since most waters were still frozen, we soon gave up on ducks and geese and began paying attention to the longspurs. They were mostly in flocks averaging about 50 birds and flying fairly high since they could be spotted only with binoculars. At no time did we detect any other species such as Horned Lark or Snow Bunting mixed in with these flocks.

Later that day we tried to estimate the numbers involved, based on the number of hours we were out, the miles we covered, and the size and frequency of the flocks. Using several different methods we figured that at least 150,000 to 200,000 longspurs flew over us that morning.

This migration is interesting for reasons other than its sheer numbers. It took place the day before a warm front pushed thousands of ducks, geese, and swans northward into this area, and it was on the same day that we saw 20,000 geese and 500 swans at Lac Qui Parle refuge.

It is interesting to note that fewer observers than normal noted Lapland Longspurs this spring, so perhaps most of the birds passed through quickly and undetected except for our observation. *Kim R. Eckert, 1004 Ashland Ave., Wilmette, Illinois.*

Treasurers Annual Report

Dec. 1, 1969 – Dec. 1, 1970

Balance on hand Dec. 1, 1969	\$3418.77
1970 Income:	
Dues etc.	3690.05
Int. earned from Endowment Fund	105.87
Contributions to Endowment Fund	605.00
Total Income	4400.92
Disbursements:	3055.89
Credit	1345.03
Bal. Dec. 1 '70	\$4763.80
Credits:	
Checking Acct. First State Bank	909.64
Savings Minn. Federal S. & L.	801.19
Ctf. of Deposit, Minn. Federal	1052.97
Ctf. of Deposit, Midwest Federal S & L.	2000.00
Total ..	\$4763.80

BOOK REVIEWS

AN EAGLE TO THE SKY by Frances Hamerstrom (Iowa State University Press, 1970). 142 pp. illus. \$4.95.

A former Boston debutante and former fashion model, Frances Hamerstrom holds a master's degree in ecology and an honorary doctorate for her wildlife research. She is also a past president of the Wisconsin Society for Ornithology, a group similar to the MOU. Mrs. Hamerstrom and her husband Fred live on a Wisconsin farm and work as research biologists for the Wisconsin Department of Natural Resources. This book is a fascinating narrative about the Golden Eagles that Mrs. Hamerstrom has kept captive and trained to hunt. The title of her book refers to the fact that in the end she took her last eagle to the Wyoming mountains, taught it to fend for itself, then freed it.

Some of the author's eagles laid eggs in the big eyrie at the Hamerstrom farmstead. The eggs never did hatch, but that was not for lack of heroic efforts on the author's part. During one incubation she played the role of a male eagle, relieving the female eagle on the nest each morning. To warm the eggs she used a hot water bottle filled with her leftover breakfast coffee.

Another time she played the role of a female eagle, allowing a male eagle to mount her back each day to stimulate him sexually and thus to further his sexual development. And when he was ready Mrs. Hamerstrom expressed his semen and injected it into a big female eagle, using the techniques of artificial insemination that she had learned from poultry experts. But alas, no eagle egg ever hatched.

Undaunted, Mrs. Hamerstrom substituted newly hatched Red-tailed Hawks for the added eagle eggs, and the eagle accepted them. Helping the foster mother teach the downy Red-tails, the author once was eating bits of meat to show the nestlings how. Inadvertently she ate some pieces that had been regurgitated by the eagle. They tasted

pretty good she reports, the slime on the surface having a pleasant sweetish flavor.

Once when she was flying an eagle it struck her in the head from behind. When she regained her senses she found a pool of warm blood that had run down under her shirt and been trapped just above her belt.

This book has many charming pen drawings. They and the text are well printed, but the 50 or so basically good photos did not reproduce well. No index. Perhaps like me you prefer your eagles wild and free. Even so, you will find *An Eagle to the Sky* most interesting and most informative. If you have a special interest in eagles or falconry, this book is "a must." *R.E. Turner*

PRAIRIE PLANTS AND THEIR ENVIRONMENT: A FIFTY-YEAR STUDY IN THE MIDWEST by J. E. Weaver (University of Nebraska Press, 1968). 276 p. illus. \$6.95.

Note that this is not a general text on plant ecology of the prairie, despite its title. It details the researching of one prominent Nebraska plant ecology professor and his students.

From this book you can learn much of ecological importance about the 250 species of plants per square mile which live on the prairies of eastern Nebraska, and the eastern Dakotas, western Iowa and western Minnesota. Weaver tells much about their root systems and how they withstand the stress of droughts and grazing by cattle. But he does not include the many things he did not research.

His prairie is devoid of all animal life (except grazing cattle). No birds spread seeds of poison ivy. No annelid worms and gophers turn over the soil. No nematode worms or grasshoppers or aphids or fungi attack the plants. This book contains valuable information for some ecologists, but it is not for most students of nature. *R.E.T.*

THE GRIZZLY BEAR, edited and introduced by Bessie Doak Haynes and Edgar Haynes (University of Oklahoma Press, 1966) 386 p. illus. \$6.95.

This book is more fun to read than any I have encountered in a long time, for it is an anthology of writings about grizzly bears by

the people who knew that species best — the explorers, hunters, naturalists, and cattlemen of the Old West. Teddy Roosevelt, William T. Hornaday, Enos Mills, John Muir, Ernest Thompson Seton, Bret Harte, Joaguin Miller, and even Washington Irving and Captain Merriwether Lewis are among the authors; and they make good reading all the way. Most accounts are factual.

You are sure to enjoy this book, for it accents action and adventure; but it will also teach you most of what is known about grizzlies. The latest scientific studies of grizzlies — radio tracking, for example — are not covered by this book. The drawings by Mary Baker are excellent. By today's standards, this is a lot of book for the money. Highly recommended. *R.E.T.*

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ANNOUNCEMENTS

MOU SPRING FIELD TRIP — May 15-16, 1971, to Mountain Lake, Windom, and Heron Lake. All birders welcome. Hosted by Southwestern Minnesota Nature Club. See *MOU Newsletter* for details.

YOUR 1970 MINNESOTA CHRISTMAS COUNT — send the results to *The Loon*, Box 66, Shafer, Mn. 55074, for later publication.

OPERATION LOON WATCH — you can be a part of it. Judy McIntyre is a graduate student doing research on the distribution and nesting range of the Common Loon in Minnesota. She wants you to send her your observations of this species. To join Operation Loon Watch, or for information, send a card or letter to: Judy McIntyre, 324 Zoology Building, University of Minnesota, Minneapolis, Mn. 55455.