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Breeding Biology and Habitat Use of the Upland Sandpiper in Central Wisconsin

By Irvine W. Ailes

The Upland Sandpiper **(Bartramia longicauda)**, unlike most other shorebirds, frequents the dry, grassy fields and prairies of North America. This species was reported to be abundant in the middle 1800's, but started to decline near the turn of the century (Coues 1874; Forbush 1912). Most observers believe that Upland Sandpiper populations declined because of cultivation of the prairies and an increase in market hunting (Cooke 1914). The Migratory Bird Conservation Act of 1916 ended legal hunting of this species in the U.S. and Canada; soon afterwards its numbers started to increase (Roberts 1932; Beck 1938; Buss and Hawkins 1939). More recently, however, the loss of prairie grassland to cultivation in parts of the country has probably depressed the population again (Kirsch and Higgins 1976). The Upland Sandpiper is currently declining in some sections of the United States, while in others its population status is uncertain (Hine 1973; Arbib 1975; Arbib 1979). In the last few years, interest in this species has resulted in increased research into its breeding biology and management (Higgins and Kirsch 1975; Kirsch and Higgins 1976). The purpose of this paper is to add to the information available about this relatively little-known species. Two summers' research (1974 and 1975) on the breeding biology and habitat use of the Upland Sandpiper in Wisconsin is presented.

Study Area and Methods

The study area was within the Buena Vista Marsh in southwestern Portage County, Wisconsin. Vegetation in the area was approximately 85 percent grassland (including tame hay and pasture), 5 percent cropland (corn, mint and potatoes) and 10 percent forest and lowland shrubs. Upland Sandpipers were restricted to the grassland portion of the study area, which consisted mainly of Kentucky bluegrass **(Poa pratensis)**, quackgrass **(Agropyron repens)**, timothy **(Phleum pratense)**, and smooth bromegrass **(Bromus inermis)**. The marsh has been extensively used for beef ranching, but in the past few years, small grain agriculture has increased.

Adult sandpipers were captured on the nest by means of a bow net or hand-held drop net. In 1974, 5 adults were captured by flushing the birds into a mist net. All adults were marked with a U.S. Fish and Wildlife Service aluminum band and one patagial tag on the right wing (Anderson 1963; Hester 1963). Patagial tags were made of flourescent orange Saflag material (Safety Flag Co., P.O. Box 105, Pawtucket, R.I. 92862) with a large letter and number written on each tag with black opaque stamp-pad ink (Justrite, Louis Melind Co., Chicago 60657). Tags were approximately 22 x 34 mm and were fastened to the patagium with a 10 mm length of 25 lbs.-test, braided nylon fishing line. The line was inserted through the patagium with a sewing needle. Small washers (7 mm diameter) made of the same Saflag material were threaded on the line on each side of the patagium. Knots were tied at each end of the line and glued with Seal-All (Allen Products Corp., Detorit, Mich. 48204) to prevent fraying and untying.

Young sandpipers were captured at the nest soon after hatching. Older chicks were found in the fields and hand-caught. All young were marked

with a U.S. Fish and Wildlife Service aluminum band and colored plastic leg bands, for future identification.

Nests were found by direct observations of the birds or by searching fields that appeared to provide adequate nesting cover. Such fields were searched on foot. A 1.5 m-long stick was swung through the upper half of the vegetation to flush any incubating bird. In 1975, some fields were searched with a cable-chain device similar to that described by Higgens et al. (1969b). The cable-chain drag was shortened to 15.24 m and pulled by two horses instead of vehicles. Each nest was marked with a 1.2 m surveyor's stake about 3 m south of the nest.

Vegetation was analyzed by the point-centered quarter method (Dix 1961) and height-density method (Robel et al. 1970). Data from each nest were recorded as described by Kirsch and Higgins (1976). Habitat use was recorded as to date, time, activity and number of birds, height of vegetation and land use. All data were coded and placed on computer cards for analysis.

Results and Discussion

Arrival on the Breeding Ground - Upland Sandpipers arrived in the Buena Vista Marsh on 23 April in 1974 and 24 April in 1975. The first arrivals were seen in the same field in both years. Buss and Hawkins (1939) also found this to be true of first arrivals at the Faville Grove study area in Wisconsin over a 5-year period. Upland Sandpipers arrived at Faville Grove in southern Wisconsin about one week earlier than at the Buena Vista Marsh in central Wisconsin.

Most Upland Sandpipers were paired upon arrival, except in 1975 there appeared to be a higher proportion of single birds. There were no groups or trios as observed by Rowan (1926) and Higgins and Kirsch (1975). The first returning marked birds were observed on 11 May 1975. Return success for 1975 was 33 percent for adults (5 to 15 banded) and 3 percent for young (2 of 60). Of the returning adults, two returned as a pair and two other birds returned with new mates. The original mates were not known to have returned. The fifth adult returned without his mate, nor did he find a mate during the summer.

Nesting Activity - Nesting activity began about 2 weeks after the first Upland Sandpipers arrived. The earliest nest initiation among the 12 in this study was 8 May and the latest 9 June. The mean clutch initiation date was 15 May. Buss and Hawkins (1939) found that Upland Sandpipers began nesting activities 15 to 20 days after the birds arrived in southern Wisconsin. The start of nesting activity has been reported by Lindmeier (1960) for northwestern Minnesota and by Higgins and Kirsch (1975) for central North Dakota at about 2 weeks after the first birds arrive.

The earliest known hatch date was 4 June and the latest was 6 July. The peak of hatching was about 11 June, with the major hatching period occurring between 8 June and 30 June (Fig. 1). A second hatching period around 5 July to 8 July may be the result of renesting or late nesting. During the two years of this study, no evidence was found to indicate renesting, but early nest failure could lead to a second attempt and successful fledging before fall departure. Renesting is known in several other sandpiper species (Norton et al. 1975).

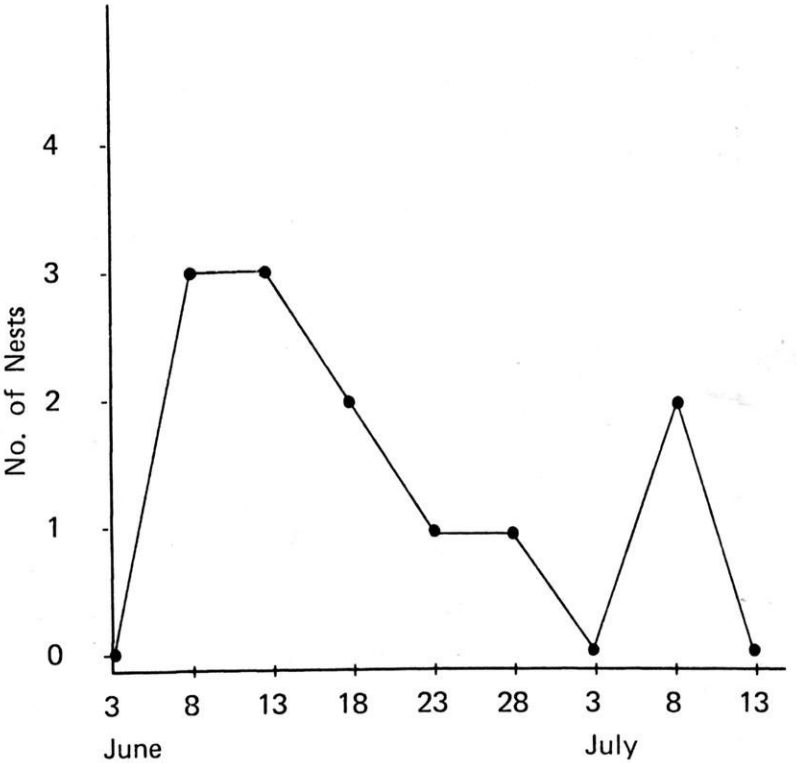

Figure 1: Hatching dates of Upland Sandpiper nests in central Wisconsin, 1974 and 1975.

Nesting success of returning marked birds was 100 percent. One returning pair nested approximately 20 m from their 1974 nest site. The other returning adults were with new mates; one a female with a new male and the other a male with a new female. They nested 241 m and 151 m from their 1974 nests, respectively. Site tenacity and reuniting with the previous year's mate is quite common in other shorebirds (e.g. Holmes, 1971; Hays 1972; Oring and Knudson 1972; Jehl 1973; Norton et al 1975).

Nest sites of the Upland Sandpiper were restricted to the grasslands (85% of the study area). No nests were initiated in areas of heavy livestock grazing (35% of the grasslands) or small-grain agriculture (8% of the grasslands). Hayfields (46%) and idle fields (31%) accounted for the majority of nesting habitat (Table 1). Buss and Hawkins (1939) found 47 nests of which 57 percent were in hayfields and 43 percent in pastures. Higgins (1975), in a survey of nesting in North Dakota croplands, found 57 percent of the nests in non-tilled upland, including pastures, highway right-of-ways, and idle grasslands that comprised only 7 percent of his total study area. Doric and Grewe (1979) found 73% of their nests in old fields that comprised 28 percent of their study area.

TABLE 1

Land Use of Upland Sandpipers in the Buena Vista Marsh

	Grasslands (% of Study Area)		*Nesting*		*Brood Rearing*		*Feeding*	
	1974	1975	No. of Nests	Percent	No. of Observations	Percent	No. of Observations	Percent
Hayfield	11.5	10.1	6	46	18	9	120	11
Idle field	43.4	44.4	4	31	9	5	11	1
Grazed pasture	36.5	34.0	2	15	145	69	741	66
Ungrazed pasture	0.8	0.2	1	8	32	15	148	13
Plowed field	0.1	3.7	0	0	3	1	34	3
Cropland	7.7	7.6	0	0	3	1	62	6
TOTAL	100	100	13	100	210	100	1116	100

Table 1: Land use of Upland Sandpipers in the Buena Vista Marsh

All hay fields were cut for hay during the previous year. Idle fields had strips of cut hay or were mowed with a rotary mower for Prairie Chicken **(Tympanicus cupido)** management. Vegetation in these areas was 10 to 15 cm high at the time of nest initiation. Only three nests were found on grazed pastures (15%) or ungrazed pastures (8%). The grazed and ungrazed pastures both had livestock on them during the previous year. The two nests in grazed pasture were initiated before livestock were introduced into the fields.

Vegetation analysis of 12 nests revealed that quackgrass, bluegrass and timothy were the dominant species. Quackgrass was found at 10 nests (83%), bluegrass at 9 (75%) and timothy at 7 (58%) (Table 2). Buss and Hawkins (1939) found 47 percent of the nests in southern Wisconsin in June in bluegrass, timothy and quackgrass hayfields. In North Dakota, Upland Sandpipers were commonly found nesting in fields of the genera **Poa** (48%), **Bromus** (8%), and **Agropyron** (6%) and others in smaller percentages.

TABLE 2

Vegetation Composition at Upland Sandpiper Nests

Plant Species	No. of Nests	Mean Frequency at Nest (%)	% of Nests with Species Present
Quackgrass *Agropyron repens*	10	29.5	83
Kentucky Bluegrass *Poa pratensis*	9	33.8	75
Timothy *Phleum pratense*	7	12.5	58
Smooth Bromegrass *Bromus inermis*	4	5.0	33
Reed Canarygrass *Phalaris arundinacea*	2	1.5	17

Table 2: Vegetation Composition at Upland Sandpiper Nests

Vegetation height is an important factor in nest site selection by Upland Sandpipers (Kirsch and Higgins 1976). In central Wisconsin, 15 percent of the nests were in cover that was 0 to 15 cm tall; 31 percent in cover that was 15 to 25 cm tall, and 54 percent in cover 25 to 40 cm tall. No nests were found in cover that was over 40 cm tall. When the nests hatched, however, vegetation was as high as 70 cm. Only two nests were found during egg laying; therefore, most nests were initiated when the vegetation was much shorter than the data indicate. These two nests were in vegetation that was 10 and 30 cm high. Lindmeier (1960) found 43 nests in vegetation heights of 17.8 to 53.3 cm in northwestern Minnesota. Higgins et al. (1969a) noted that of 41 nests found, 93 percent were in cover 15.2 to 61.0 cm tall. A more

recent study by Kirsch and Higgins (1976) found 62 percent of the nests in vegetation cover that was 15.5 to 30.8 cm tall. Doric and Grewe (1979) found 80% of 15 nests in vegetation 22.5 to 35.0 cm tall in Minnesota, and Kaiser (1979) had 42% of 33 nests in vegetation cover 12.7 to 33.0 cm tall.

Nest densities differed between the two years of the study. In 1974, nest densities were 3.1 per 40 ha and in 1975, they were 0.8 per 40 ha. Sixty-five ha were searched in 1974, 157 ha in 1975. This sharp drop in nest density may indicate a population decline. Although more area was searched in 1975, areas selected for searching were those suspected of containing nests. This same selection criterion was used both years. The drop in nest density is further substantiated by the smaller number of young found in 1975 (28 compared to 60 in 1974) after an equally intense search.

Two fields which contained 2 and 1 nest respectively in 1974 were not used in 1975, even though the vegetation had not changed. One field that contained 2 nests had one adult from each of the pairs return, but both nested in adjacent fields. In southern Wisconsin hayfields and pastures, nest densities of Upland Sandpipers were 30.3 per 40 ha in 1937 and 10.9 per 40 ha in 1938 (Buss and Hawkins 1939). Nest densities were 12.0 per 40 ha in north-central South Dakota (Lokemoen and Duebbert 1974). In central North Dakota, mean nest densities ranged from 0.4 to 3.3 per 40 ha on annually tilled cropland and grasslands managed by burning, respectively (Kirsch and Higgins 1976).

Egg Laying, Clutch Size and Incubation Period - Only 2 nests were found during the egg laying stage. One nest in 1974 increased from 1 egg to 4 eggs in 90 hrs., averaging 30 hrs. between eggs. The time interval between the 3rd and 4th eggs was 45.5 hrs. One nest in 1975 was completed with 5 eggs (Fig. 3), which increased from 1 to 5 eggs in 179 hrs. averaging 44.8 hrs. between eggs. The time intervals between the first and second, and the fourth and fifth eggs were 31 and 47 hrs., respectively. Higgins and Kirsch (1975) found that the time period between successive laying of individual eggs ranged from 24 to 49 hrs. One clutch increased from 1 to 4 eggs in 79 hrs., averaging 26.3 hrs. between eggs.

The clutch size of the Upland Sandpiper is normally 4 eggs, rarely 5 and sometimes 3 (Bent 1929). In 1974, all 6 nests contained 4 eggs, and in 1975, of 7 nests found, 6 had 4-egg clutches and 1 had a 5-egg clutch (Table 3). Nests containing 5 eggs have also been reported by Rowen (1926), Lindmeier (1960), and Higgins et al. (1969a). In southern Wisconsin, Buss and Hawkins (1939) reported all complete clutches contained only 4 eggs. Higgins and Kirsch (1975), in North Dakota, found 189 completed clutches, all consisting of 4 eggs.

The incubation period of the Upland Sandpiper has been reported to be 17 days (Forbush 1929), 21 days (Grant 1931; Buss and Hawkins 1939), 24 days (Bailey 1930), 23 to 24 days (Lindmeier 1960), and 26 days (Goodpaster and Maslowski 1948). Higgins and Kirsch (1975) found a mean incubation period is defined as the time from the laying of the last egg to the hatching of the last young when all eggs in the clutch hatch (Nice 1954; Kendeigh 1963). Only 2 nests of 13 found were discovered before the clutch was completed. One nest had an incubation period of 25 days. The first 3 eggs from the second nest hatched in 22 days; the other 2 eggs were destroyed before they completed hatching. Incubation periods for other

shorebirds range from 19 days for the Semipalmated Sandpiper (Parmelee et al. 1968) to 22-29 days for the Willet **(Cotoptrophoras semipalmatus)** (Tomkins 1965).

Hatching - Higgins and Kirsch (1975) report that 58 percent of 12 clutches had a combined pipping and hatching period of between 24 and 48 hours. Buss and Hawkins (1939) found that the pipping period varied from 18 hours to 3 days in southern Wisconsin. In central Wisconsin, of 7 clutches observed, 4 (57%) had a combined pipping and hatching period of 23 to 46 hours. Three nests (43%) had a mean pipping and hatching period of 52 hours. The pipping and hatching period was defined to extend from the time the first egg pipped through the hatching of the last egg.

Hatching success of Upland Sandpiper eggs is high. Of 47 eggs observed, 43 hatched (91%) (Table 3). Three of the 4 eggs that did not hatch were from one nest; these were infertile. The fourth egg failed to hatch before the nest was deserted. Buss and Hawkins (1939) determined that 97 percent of the eggs in their study hatched. Higgins and Kirsch (1975) found a hatching success of 94 percent in North Dakota.

TABLE 3

Reproductive Success of the Upland Sandpiper

	1974	1975	Total or Average
Number of nests	6	7	13
Number of eggs	24	29	53
Mean clutch size	4.00	4.14	4.08
Hatching success	100%	83%	91%
Nesting success	83%	86%	85%

Table 3: Reproductive Success of the Upland Sandpiper

Nesting success of the Upland Sandpiper has been shown to be high when compared to other ground-nesting birds (Bowden 1976; Higgins and Kirsch 1975). A nest was considered successful if at least one egg was hatched, and the young departed the nest. The mean nesting success was 85 percent (Table 3), with all nest destruction caused by livestock trampling. No nests were lost to predators, even though Prairie Chickens nesting in the same fields lost nests to skunks **(Mephitis mephitis).** In southern Wisconsin, mean nesting success for 47 nests was 66 percent over a 2-year period (Buss and Hawkins 1939). Kirsch and Higgins (1976) reported mean nesting success

for 172 nests to be 67 percent in North Dakota. Highest nesting success occurred on undisturbed grassland and burned grassland with 71 percent each, and lowest on annually tilled cropland, with none of 6 nests hatching. In Minnesota, Lindmeier (1960) reported a nesting success of 63 percent for 29 nests. Oetting and Cassel (1971) and Lokemoen and Duebbert (1974) reported nesting successes of 100 percent for 13 and 12 nests in North and South Dakota, respectively. Nesting success for other species of shorebirds can be equally high. Holmes (1972) reported a mean nesting success of 83.7 percent for 215 nests of the Western Sandpiper **(Calidris mauri)** in subarctic Alaska. Of 15 nests of Pectoral Sandpipers **(C. melanotos)** studies by Norton (1972) in Alaska, 93 percent were successful. In contrast, nesting success of Baird's Sandpiper **(C. bairdii)** was only 43 percent for 102 nests.

Growth Rate of Young - At hatching, young Upland Sandpipers weighed 17 grams; the culmen and tarsus averaged 11 and 27 mm, respectively (N = 48). Growth of the young was rapid, but there was considerable variation in growth and hatching measurements even within families. The young attained adult weight and were able to fly in 30 to 34 days, when the wing length reached 11.5 to 12.0 cm and their weight was 95 to 100 grams. Buss and Hawkins (1939) observed that young sandpipers had a mature appearance within 30 days. Buss (1951) reported that Upland Sandpiper young were capable of flying short distances in 34 days in his Yukon study area.

Other species of sandpiper show a similiar rate of growth. Western Sandpipers are capable of flight within 2½ to 3 weeks following hatching (Holmes 1972). Holmes (1966) reported young Dunlin reaching adult size in northern Alaska within 3 to 4 weeks.

Brood Rearing Areas - The most important brood rearing areas in the Buena Vista Marsh were grazed pastures. Of 210 observations of adults with young, 69 percent were in grazed fields (Table 1). A large percentage (65%) were heavily grazed with the vegetation 0 to 10 cm tall. Feeding fields were shared with other adults and other broods.

Movement and Home Range of Adults with Young - Within 24 hours after all young had hatched and dried, they left the nest. If an acceptable brood rearing field was within a short distance of the nest, the adult and young would remain in that field for several weeks. In 1974, two marked adults moved to a grazed pasture with their young, 338 m and 48 m from their respective nests. Over a 24-day period, they were observed regularly with their young in this same field. In 1975, one adult with young was regularly observed in a 3 ha grazed field only 50 m from the nest site. Although these birds may be exceptional, it does show that Upland Sandpipers can raise broods in areas of small size if adequate food is available. In contrast to this, Buss (1951) found that in the Yukon Territory, most Upland Sandpipers required a large home range; some were as large as 3.2 km in diameter. He observed one brood frequently in a 32 ha area for up to 15 days and less frequently up to 37 days.

Fall Feeding Areas - Feeding areas frequented by Upland Sandpipers in late summer were quite similar to those used throughout the summer. Of 1116 observations made over the 2 summers, 66 percent were in grazed pastures, 13 percent in ungrazed pastures and 11 percent in hayfields (Table 1). Heavily grazed fields (vegetation height 0 to 10.0 cm) made up 68 percent of

the grazed areas frequented for feeding; moderately grazed areas accounted for 28 percent, and lightly grazed areas for 4 percent.

Departure - Upland Sandpipers usually depart the Buena Vista Marsh in mid-August. The last bird was observed on 14 August; therefore, sandpipers were present in the Marsh for a period of 113 days. In North Dakota, Higgins and Kirsch (1975) reported the length of stay of 110 and 122 days for 1972 and 1973, respectively. Buss and Hawkins (1939) reported a length of stay during 1935 to 1938 of 114 to 165 days with a mean of 138 days in southern Wisconsin. The Buena Vista Marsh is subject to frost any time during late summer. This may be a factor in the birds' relatively short stay.

Summary

Most Upland Sandpipers were paired upon arrival in Central Wisconsin and nesting began about 14 days after the first birds were observed. The peak hatch period for the nest was around 11 June with a second, less pronounced peak during the first week of July. Of 15 adults banded in 1974, 5 returned in 1975 and 4 were successful in nesting the second year. One pair returned as a pair and nested approximately 20 m from their 1974 nest site. Most Upland Sandpiper nests were in hay fields (46%) and idle fields (31%) with 54 percent of the nests occurring in cover 25 to 40 cm tall. Nest densities ranged from 3.1 per 40 ha in 1974 to .08 per 40 ha in 1975. The clutch size was 4.08 eggs for 13 nests. The interval between laying of successive eggs was 31 to 47 hours. Combined pipping and hatching time was 23 to 46 hours in 57 percent of the clutches observed. Hatching success was 91 percent over the two summers. The mean nesting success was 85 percent with all nest destruction caused by livestock trampling. In 1974, 60 young were banded while in 1975 only 28 were banded, in spite of an equally intense search. Young sandpipers reached adult weight and were capable of flight in 32 days. Most adults (69%) took their young to heavily grazed pastures for brood rearing. Fall departures from the Buena Vista Marsh occurred in mid-August, with a length of stay of about 113 days.

Sandpipers were able to rear their young in an area of mixed heavy grazing, hayfields, and cropland. However, the sharp drop in 1975 in the number of nests and young may indicate an unstable population. If this drop continues, this population may face the possibility of becoming threatened or endangered. The high nesting success indicates the difficulty may occur between hatching and brood rearing. Increased cultivation in favored brood-rearing fields and adverse weather at critical times may have caused the 1975 decline in number of young. The lower nest density in 1975 may reflect difficulty on the wintering ground.

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Breeding Songbird Associations In A Southern Wisconsin Wetland

by Michael John Jaeger

A number of songbirds commonly nest in the wetland areas of North America. Some species, the blackbirds and the (Long-billed) Marsh Wren **(Telmatodytes palustris)**, have been subjects of detailed ecological studies, while the ecologies of others are less well known. Little is known of their interactions or of how their distributions overlap. This paper compares the breeding habitat associations of the (Long-billed) Marsh Wren, Red-winged Blackbird **(Agelaius phoeniceus)**, Yellowthroat **(Geothlypis trichas)**, Yellow Warbler **(Dendroica petechia)**, and Swamp Sparrow **(Melospiza georgiana)**, between themselves and with nine species of plants.

Methods

The study area is a floodplain wetland of the Wisconsin River in Columbia County, Wisconsin, located next to the cooling lake of the Columbia Electric Generating Station. It is a complex of plant associations generally referred to as deep marsh, shallow marsh, sedge meadow, and shrub carr, covering about 30 hectares.

Birds were surveyed between 22 May and 2 June 1975 in 116 circular plots (20 meter radius), centered on the intersections of a staked 50 meter by 50 meter regular grid pattern. Bird presence in each plot was determined during one 12 minute observation period, with all observations conducted within the 3 hours following sunrise.

Plant species' distributions were taken from data collected in October 1975 for use in vegetation studies by others.

Association analyses were run on the 5 bird species and on 9 plant species. All plant species present in more than 15% of the sample plots were included. Association patterns between all species pairs were tested with the Chi-square test (at the $p = 0.05$ level). The null hypothesis stated that the species were independently distributed. Positive and negative associations were determined when the null hypothesis was rejected. A positive association was when the two species were found together more often than expected, while a negative association was when the two species occupied seperate areas more often than expected.

Association tests were also run on the bird species and the presence of shrubs. Test criteria and the null hypothesis were the same.

Results

The association results are given in Table 1.

The species were divided into 3 groups based on the association analyses results:

GROUP I.
- Red-winged Blackbird
- Swamp Sparrow
- Yellowthroat
- Yellow Warbler
- **Carex stricta** (Tussock sedge)
- **Calamagrostis canadensis** (Blue joint grass)
- **Dryopteris thelypteris** (Marsh fern)

GROUP II.	Long-billed Marsh Wren
	Carex rostrata (Sedge)
	Sagittaria latifolia (Arrowhead)
	Typha latifolia (Cattail)
	Lemna minor (Small Duckweed)
GROUP III.	**Carex lacustris** (Sawgrass)
	Lysimachia thyrsiflora (Tufted Loose-strife)

Groups I and II are strong associations. 81% of within-group pairs in Group I and 90% of within-group pairs in Group II had positive associations. 89% of between-group pairs had negative associations.

Group III, on the other hand, is not a distinct association. It consists of 2 species with no distinct distribution patterns that are discernable to this form of analysis and the hypothesis of independent distributions could not be rejected for most species pairs (89%) involving these species.

The associations between bird species distributions and the distribution of shrubs show the same general pattern. The Group II species, the Long-billed Marsh Wren, had a negative association with shrubs. The other bird species, all Group I species, had positive associations.

Discussion

The Red-winged Blackbird and the Long-billed Marsh Wren had a negative association, even though they were found together in 58 of the 166 plots (50%). The marsh wren was found in 23 of the 25 plots that lacked Red-wings. Orians and Willson (1964) and Willson (1967) found them in the same wetlands. Even though their territories often overlapped, the species tended to segregate their activity centers. Willson found that the Red-wings tended to center their activities in areas with shrubs while the marsh wrens tended to concentrate in areas without shrubs, a difference also observed in this study. Willson also suggests that interspecific aggression might reinforce this separation. (Long-billed) Marsh Wrens are known to puncture the eggs of Red-wings (Allen 1914, Welter 1935, Orians and Willson 1964). Burt (1970) found lower Red-wing nesting success in nests near marsh wren courting centers.

(Long-billed) Marsh Wren distributions have been strongly correlated to deep-water emergent plants, with high densities in areas dominated by **Typha** sp. and lower densities in shallower areas of **Calamagrostis canadensis** and **Carex stricta** (Welter 1935, Verner 1965, Provost 1947, Beecher 1942). This was also found in the present study. The marsh wren and the sedge **Carex lacustris** had independent distributions in the present study. This result is surprising when compared to Beecher's (1942) statement that this sedge formed the optimum habitat for the marsh wren, and Provost's (1947) observation of its importance, particularily as nest-building material. The independent association could result from the relatively high frequency of the sedge (74% of the plots).

Aldrich (1943) found Long-billed Marsh Wrens and Swamp Sparrows together in areas dominated by **Juncus effusus** (Soft Rush) and **Scirpus cyperinus** (Bulrush). Although these bird species occurred together in the present study, there was a strong tendency towards separation of areas used. Willson (1967) states that the segregation is probably reinforced by interspecific aggression, which was also observed in this study.

The Swamp Sparrow, Yellowthroat, and Yellow Warbler had similar distributions in the present study. Published data concerning these species are not specific in nature, and their associations with each other and with plant species are discussed only in broad terms. Beecher (1942) found both the Swamp Sparrow and the Yellowthroat occupying similar areas, those dominated by **Calamagrostis canadensis** and a mixture of sedges, primarily **Carex stricta.** Aldrich (1943) found the Swamp Sparrow, Yellow Warbler and Yellowthroat in areas dominated by a variety of shrubs. These observations conform well to the positive associations with shrubs in this study.

In a study of the Yellowthroat, Stewart (1953) noted the kinds of plants present were extremely variable from territory to territory. Three species listed as commonly occurring in their territories had positive associations with the Yellowthroat in this study: **Dryopteris Thelypteris, Calamagrostis canadensis, and Carex stricta.**

The analyses performed in this study yield 2 distinct association groups and 2 other species that appear to have distributions that are independent of the other species. These patterns generally correspond to patterns suggested for other locations. It is not known whether these patterns result from habitat selection or behavioral interactions, but it has been suggested in the literature that both might be involved.

Acknowledgements

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Nestling Bald Eagle Survives Lightning Strike yet Parent Dies

This observation involved a Bald Eagle **(Haliaeetus leucocephalus)** nest in north central Vilas County, Wisconsin. The nest was first seen in this present study in 1974. In a never ending search to find Bald Eagle nests in Wisconsin, all reported nests are investigated, no matter how unlikely they may sound. We were checking out a lead that was twenty years old. Daniel D. Berger had known of an eagle nest in this area in the early 1950's. On the first of two annual nest checks in 1974, Sindelar searched the area and, to his surprise, found the nest, complete with attending adults, almost exactly where Berger had seen one twenty years before. This pair produced two, three, one, one and two young from 1974 through 1978 respectively. For a pair of eagles to produce nine young in five consecutive years is a very good record for eagles in Wisconsin.

The observation of interest occurred in 1977. We flew over the nest during our early nesting survey in a Cessna 206, piloted by Winship on April 13, 1977, and made a straightforward and routine observation: "one adult eagle on the nest in an incubating position". The follow-up flight to check for production was made with the same plane and pilot on June 4, 1977. On our first pass over the nest, we could not agree on what we had seen so we made a second, third, and fourth pass. We were in total agreement that there was "something" on the nest, but we could not ascertain what it was. Finally one of us guessed what we all had been thinking -- a dead adult Bald Eagle! After making one last pass over the nest, we all agree that it was most likely a dead adult eagle, even though it did not look quite right. We then continued our survey and checked all the remaining nests in the state.

On June 5, 1977, we visited the nest to confirm our observation. As we entered a clearing, approximately 150 yards from the nest, we saw a familiar but unexpected sight. Two adult eagles flew from the nest tree and objected vocally to our intrusion. As we approached the nest tree the adults continued their vocalizations overhead. This behavior is typical of adult eagles when young are present in the nest. Now we were really curious. If we had seen a dead adult on the nest just the day before, how could there now be two live adults, and why were they behaving as if they had young in the nest? When we got to the base of the nest tree, the reason for their behavior was obvious. The amount of excrement (commonly called "whitewash" by raptor enthusiasts) on the ground indicated that there were in fact young on the nest. Adult eagles seldom defecate from the nest. The ground cover and low bushes were literally covered with "whitewash"; hardly a leaf or blade of grass was left undecorated. Now we were beginning to question the validity of our previous day's observation. With two live adults present and obviously young in the nest, it seemed remote that there also could be a dead adult on the nest. Evans was chosen to make the climb, as he most always has been in recent years due to Sindelar's advanced age.

When he reached the nest, he found one apparently healthy young (estimated to be five weeks old) -- and one dead adult eagle! We estimated (from the condition of the carcass) that the adult had been dead for about one month. Meanwhile, on the ground, Sindelar started to make more detailed observations in the area. It was immediately obvious that the nest tree had suffered a recent lightning strike. There were several large branches (three to five inches in diameter) on the ground that had been broken from

the nest tree by the lightning strike. A balsam **(Abies balsamea)**, ± eight inches in diameter, that was growing approximately two feet from the nest tree had also been affected by the lightning strike.

It is not at all unusual for lightning to strike eagle nest trees. In fact, several in Wisconsin are struck each year. It is not known if this is because eagles often pick a super-canopy tree for their nest (thus, often the tallest tree in the area) or if the nest structure itself attracks the strike. The size and bulk of the nest and the nature of the compacted rotting and often wet interior of the nest might well attract the strike. The nest tree -- a live White Pine **(Pinus strobus)**, approximately thirty inches in diameter and + 90 feet tall -- is a lone pine on a very small "tree island" in an Alder **(Alnus sp.)** swamp. The only other trees on the "island" are Balsam and Spruce **(Picea sp.)** which are dwarfed by the nest tree.

Evans also had been making detailed observations as he ascended the nest tree. The lightning damage was first obvious just below the nest (approximately seventy feet above the ground). From there it followed down the nest tree alternating several times with the afore-mentioned Balsam as it continued to the ground. We examined the effects of the strike and judged that it was relatively recent -- probably more than a week or two but probably less than two months.

Now the speculation really began. Had the lightning strike killed the adult eagle? If the adult had been brooding the very small young (as it would have been a month before), why was the adult killed and not the young? If the strike had been prior to this, the adult would have been still incubating the unhatched egg. Could the strike have killed the adult but not have affected the live embryo within the intact egg?

Because we could not (1) determine the cause of death for the adult eagle, (2) determine exactly how long the adult had been dead, and (3) determine exactly when the lightning had struck, we will never know all the facts. However, it is known that the adult died at approximately the time the egg would have hatched (either just before or just after), a critical time in the eagle's breeding cycle. Thus, it appears that the remaining member of the pair was able to quickly recruit a new mate, obviously without leaving the nest for very long, and successfully raise the single young to an advanced stage of development.

But where did this "new" recruited adult come from? Could it have been part of a former breeding pair that had suffered a similar fate (the death of one member of the pair)? Might it have come from a nearby breeding pair whose breeding attempt had failed and it merely stepped in to help out for the remainder of the season? One other possibility is that it was a "free-floating" unmated adult; every healthy eagle population has "free floating" unmated adults, and this condition must be met if the eagle population is to survive.

We gratefully acknowledge the use of the FWS plane and their financial assistance during the aerial observations, and the moneys raised through the considerable efforts of Helen Cummings and administered by the Northeast Wisconsin Audubon Society that were used to defray expenses during our ground check.

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Great Gray Owl Study - 1979

By Don G. Follen, Sr.

The objectives of this five year study are to determine the distribution and range of the Great Gray Owl (**Strix nebulosa**) in Wisconsin and to determine whether it is a permanent resident or an occasional straggler into the state. A five hundred dollar grant from Consolidated Papers, Inc. of Wisconsin Rapids, Wisconsin greatly facilitated the in-progress work.

The main methods of study have been the placing of posters with a description of the owl around the state, and the request for reports of sightings through the news media, ornithological bulletins, corporation newsletters, and the Department of Natural Resources, particularly through personnel at northern field stations.

Following are seventeen of the twenty-plus reports received to date and which I considered to be the most authentic and reliable.

January 20-26, 1979	Douglas Co. Tn. 46N R 14W Dr. Scott Neilson
March 28, 1979	Oneida Co. Tn 36N R 7E Ron Yungerman
April 2, 1979	Washburn Co. 3 miles S. of Minong, Hwy. 53. Minong High School science instructor
April 8, 1979	Juneau Co. Tn 17N R 4E Daryl Hardy, Wisconsin DNR
May 21, 1979	Sawyer Co. Tn 41N R 9W Warren Loveland
August 6, 1979 (2)	Sawyer Co. Tn 35N R 5w Hilding Bergstrom
August, 1979	Forest Co. Tn 37N R 12E Elva Hamerstrom Paulsen (for Bill Cochrane)
August 19, 1979	Washburn Co. Tn 42N R 10W Greg Peterson, Wisconsin DNR
September, 1979	Burnett Co. Tn 40N R 14W Ed Zilly
September, 1979 (2)	Forest Co. Tn 37N R 13E Ray Gryczkowski
October 25, 1979	Marinette Co. Tn 34N R 18E Gerald Schwaller
November 8, 1979	Douglas Co. TN 44N R 12W Fred Hennessy
November, 1979	Washburn Co. Tn 42N R 10W Ray Vallem, Wisconsin DNR
November, 1979	Douglas Co. near Brule Bernard Klugow
December 2, 1979	Sawyer Co. 4 miles N. of Chippewa Flowage, Clarence Cvengros

December 19, 1979	Juneau Co. N.W. of Necedah Connie Franson, Wisconsin DNR
December 21, 1979	Oneida Co. Tn 37N R 5E Michael Soucy

Following are details on some sightings:

Dr. Scott Nielson of Superior, a dentist and taxidermist, saw a Great Gray Owl in his yard from January 20 until January 26.

On August 6, Hilding Bergstrom called to describe two Great Grays sitting in his apple trees and diving into the grass (Sawyer County). By the time we arrived, they had moved into a bog along the lake.

August 19 seems to be a "lucky" date. On that date in 1978 we found the first breeding evidence of the species in Douglas County (Passenger Pigeon, Vol. 41, No. 2, Summer, 1979). On August 19, 1979, a bird was captured, released and then photographed in flight (Washburn County). On that same day, Bill Cochrane of Hiles (Forest County) photographed a Great Gray he had been seeing since March, and which we later discovered had been photographed by Diane Sampone in May. These people apparently had not realized the significance of their sightings. Had we known of them earlier, we might have discovered more breeding evidence, as the bird had repeatedly been seen carrying mice into a wooded area. Cochrane twice saw and heard two owls. We tried unsuccessfully to capture this bird (or birds) on six of the weekends we observed it. The September observation by Ray Gryczkowski seems likely to be of these same birds or of part of a family group, as he saw them just to the east of the Cochrane farm.

The December 19 sighting in Juneau County is significant because a Great Gray was photographed here in 1969, and we have had several additonal reports from the area, some by DNR personnel. This report was the most substantial of them.

Dr. Robert Nero of Winnipeg, Manitoba, a Great Gray Owl expert, feels we may have made a significant discovery about the food habits of these birds: they will, at times, dive into the grass and take grasshoppers. We observed this and had similar behavior described to us, and since then, Dr. Nero has found grasshopper remains in the pellets of Manitoba Great Grays.

We hope to continue the study of these remarkable birds, and hope to find additional funding to help defray the tremendous costs of travel and field work.

ACKNOWLEDGEMENTS:

I would like to thank Consolidated Papers of Wisconsin Rapids for the five hundred dollar grant, and the W.S.O. for administering it; Dr. Robert Nero for the use of his considerable knowledge about Great Gray Owls; Wisconsin DNR personnel for reports; and Jacob P. Elmer for his private assistance.

A special note: An occasional observer is reluctant to have me know about or band the birds. It should be pointed out again that banding and marking, which is not known to harm or hamper the birds in any way, yields invaluable information to the researcher, whose understanding of birds' numbers, ranges, and habits is ultimately in the birds' own best interests. Nevertheless, I will continue to respect the wishes of individuals in hopes of continuing to be entrusted with reports of sightings.

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BOOMERS

Reprinted by permission from STRICTLY FOR THE CHICKENS by Frances Hamerstrom, (c) 1980, Ames, Iowa, State University Press. (Without the help of 7,000 volunteers -- many from W.S.O. -- Wisconsin's Prairie Chickens might never have been saved. "Boomers" were briefed each evening in the Hamerstroms' ancient farmhouse. Fran admits that sometimes things got a bit thick. This is a chapter from her forthcoming book. The proceeds and profits will all go to research on raptors.)

Grand Central West

Once the word was out that prairie chicken watching was both adventurous and useful, we soon had to turn away up to 140 applicants each year.

Evening after evening as new groups arrived we hoped they would be on time. Some students had been coached in an almost military manner: they formed a line with their sleeping bags over their shoulders and waited, almost at attention, to be shown their sleeping quarters. Our house was built by an English gentleman named Walker, the first judge of Waushara County. It has high ceilings, transoms over the doors, and although we have lived in it since 1949, I still don't know how many rooms it has. Most of the boomers slept in the ballroom — an upstairs ballroom that runs the full length of the house. It holds five double-decker cots and sometimes three single cots as well. These take up much of the floor space; the walls are lined with dress forms, costume trunks, deer antlers, two antiquated sewing machines, books, tennis racquets and more. . . Cobwebs form interesting patterns on the unplastered walls, bats squeak in the rafters, and squirrels scuttle in the walls.

Our ballroom appears untidy, but it is full of items we might have use for some day. We kept the guest rooms tidy and reserved them for couples. We have four guest rooms with double beds and an extra nook for a double bed in one of the upstairs halls. All in all, we could sleep twenty-three people without dislodging a member of the family. Twenty-three was far too many to help with the chickens at one time, and we tried to hold the numbers of boomers down to about half the capacity of the house.

Our children grew up with the booming season as a natural part of spring. Sometimes they mingled with the boomers, and sometimes they didn't even look up from their books or toys (Most American adults don't notice children anyway.) Each evening they watched a dozen or so ornithologists, hunters, students, Europeans, New Zealanders, South Americans, grouse experts, etc., come through the kitchen and go upstairs lugging their duffle.

One late afternoon our car got stuck on the marsh and we finally got home about nine-thirty — two hours after the boomers had arrived. Elva—about eleven at the time—met us at the door. "I showed them their beds, and I briefed them because you didn't come."

Frederick and I were exhausted. He said, "Good evening," to the mass of assembled men standing in our living room. He took a deep breath and started firing questions at one and then another:

"How do you distinquish between a cock and a hen?"

"The cocks have three-inch neck tufts. Hens have one-inch tufts. If it booms, it's a cock."

"When are you to map the territories?"

"When there are no hens on the booming ground."

"How do you know if a copulation is successful?"

"The hen ruffles her feathers all up, the cock chases another cock, and the hen leaves the grounds inside of five to ten minutes."

One after another the answers came back, prompt and correct.

Frederick got out the jug of red wine. "The briefing is over. Now I'll assign you to blinds."

I started cooking breakfast for sixteen. Whoever didn't give the briefing got breakfast started. Count out 16 plates; put 32 eggs in a bowl, fry 16 slices of bacon til almost done; make a big pot of coffee. Elva joined me in the kitchen. "Perhaps you could let Hammy know that the man with the Badger T-shirt is color blind: he can't go alone"

I slipped Frederick the message and congratulated our small daughter for having done a fine job.

It never seemed quite polite to write total strangers and say, "Come at 7:30 p.m., but don't come before." As a result a good many groups of boomers arrived before. They arrived before we had finished eating our supper or even earlier. This was fine if they were old friends, but it was awkward to cook, eat, plan the work, and entertain new arrivals simultaneously. Frederick just moaned when carloads arrived early; we needed one reasonably quiet meal. He prefers a rather hermit-like existence anyway; he likes to plan ahead, and when Alan suddenly named our ancient farmhouse *Grand Central West* at supper one evening, Frederick sputtered, "That's just what it is!" I had just ladled the stew into bowls, when car doors slammed in the driveway. "Damn it," he continued, "I haven't even read day before yesterday's mail and here come the smiling faces."

I rushed outside to intercept the group and returned in a moment or two. "They'll be back at exactly 7:30."

"Who were they?"

"I haven't any idea. They're boomers. Darling, I **did** read day before yesterday's mail: The state wants us to band woodcock, and those people are out there right now pinpointing the peenting grounds for us. I told them how to listen for male woodcock making the peenting noise. They find the peenting grounds; we trap the woodcock."

We had our supper in peace.

Soon the woodcock project became so fascinating that we began to welcome early boomers. The minute I detected their arrival, I intercepted them, handed them some pieces of paper towel, and asked them to mark each peenting ground as exactly as possible. The next evening we set our vertical, almost invisible mist nets by the markers and made our catch. This fine symbiotic relationship didn't always go smoothly. A group of wildlife students from Minnesota marked more peenting grounds than any other group. Rain kept us from setting up the nets but didn't keep me from sending the next bunch of

early birds out to listen for woodcock. . . just to listen. . . that's all I asked them to do.

At 7:30 the group reappeared. The leader, a young man, radiated a noble glow and his group stood behind him beaming. "We found a lot of litter and picked it up." He and the members of his party held out pieces of paper towel as though they had just accomplished some fantastic ceremony.

"Put them back," I roared. "Those are markers. Do you know how to put them back?"

"No," he gasped.

He took the markers from each member of his party and headed for the wastepaper basket.

"Don't throw them away. They'll all go out again tomorrow night if we're lucky enough to have a good crew."

I took the towel scraps from him and put them in a paper bag. "You couldn't help it," I said kindly. Apparently not a single member of that group noticed that each piece of toweling had been fastened to the ground with a stick and that by some astounding coincidence peenting woodcock had led them unerringly to their precious "litter".

Frederick asked me, "Would you like to give the briefing tonight?"

My answer was short, "Not at all."

I went out and netted a couple of woodcock. This put me in a better frame of mind, but we had lost our big catch that spring.

Bald Eagle-Osprey Survey Report U.S. Forest Service, Eastern Region 1979

This report summarizes the 1979 Bald Eagle and Osprey nesting surveys on National Forests in the Lake States of Michigan, Wisconsin, and Minnesota. Surveys are accomplished with airplanes and consist of four separate flying missions. Eagle nests are observed in early April to determine nest occupancy and again in late June to early July to observe nesting success. Osprey nests are checked in May and late July.

This year, 269 eagle territories were surveyed. Adult eagles were present at 188 (70%) of these at the time of the first airplane flight. Successful nests and young birds raised to fledging stage are 132 and 222 respectively. These statistics are little changed overall from those of the past few years.

One hundred and ninety-four Osprey territories were occupied out of 304 observed. Nesting success and number of young were greater than the previous season but did not retain 1977 levels. Special effort to improve the inventory on the Chippewa National Forest resulted in considerably more active nests found. Productivity rates for Osprey remain disturbingly low.

BALD EAGLE NESTING STATUS

U.S. FOREST SERVICE, EASTERN REGION YEAR 1979

FOREST AND STATE	VERIFIED NESTS 1978	VERIFIED NESTS 1979	TERRITORIES OBSERVED	OCCUPIED NESTS	SUCCESSFUL NESTS	YOUNG PRODUCED
Ottawa	76	71	43	30	23	37
Hiawatha	14	19	14	2	0	0
Huron-Manistee	17	13	12	9	4	6
MICHIGAN	107	103	69	41	27	43
Chequamegon	19	23	19	16	13	21
Nicolet	39	37	24	17	16	23
WISCONSIN	58	60	43	33	29	44
Superior	70	68	51	36	23	40
Chippewa	200	201	106	78	53	95
MINNESOTA	270	269	157	114	76	135
REGION NINE TOTALS:	435	432	269	188	132	222

OSPREY NESTING TRENDS

U.S. FOREST SERVICE, EASTERN REGION

YEAR	VERIFIED NESTS	TERRITORIES OBSERVED	OCCUPIED NESTS		SUCCESSFUL NESTS		YOUNG		
			No.	%	No.	%	No.	Per Nest	Per Active Nest
1968	152		73		21	29	27	1.3	.37
1969	183		72		28	39	55	2.0	.76
1970	157	93	84	90	42	50	74	1.8	.88
1971	140		66		34	52	55	1.6	.83
1972	205	130	111	85	59	53	97	1.6	.87
1973	226	154	127	82	21	38*	36	1.7	.65*
1974	252	140	140	100	73	52	118	1.6	.84
1975	238	157	115	73	59	51	102	1.7	.97
1976	249	154	117	76	70	60	120	1.7	1.03
1977	254	197	159	81	89	56	147	1.7	.92
1978	316	193	144	75	63	44	84	1.3	.58
1979	303	304	194	64	104	54	176	1.7	.91

*Chippewa NF incomplete data excluded from calculations.

BALD EAGLE NESTING TRENDS

U.S. FOREST SERVICE, EASTERN REGION

YEAR	VERIFIED NESTS	TERRITORIES OBSERVED	OCCUPIED NESTS		SUCCESSFUL NESTS		YOUNG		
			No.	%	No.	%	No.	Per Nest	Per Active Nest
1968	323		119		66	55	98	1.9	.82
1969	344	166	129	78	72	56	109	1.5	.85
1970	294	189	124	66	64	52	107	1.7	.86
1971	327	188	126	68	77	56	115	1.5	.83
1972	356	238	167	70	97	58	155	1.6	.93
1973	382	264	171	65	99	58	163	1.6	.95
1974	381	257	170	66	89	52	119	1.3	.70
1975	398	285	176	62	117	67	192	1.6	1.09
1976	414	260	178	68	126	71	187	1.5	1.05
1977	421	265	197	75	138	70	212	1.5	1.08
1978	435	264	192	73	127	66	202	1.6	1.05
1979	432	269	188	70	132	70	222	1.7	1.18

OSPREY NESTING STATUS
U.S. FOREST SERVICE, EASTERN REGION

YEAR 1979

FOREST AND STATE	VERIFIED NESTS 1978	VERIFIED NESTS 1979	TERRITORIES OBSERVED	OCCUPIED NESTS	SUCCESSFUL NESTS	YOUNG PRODUCED
Ottawa	16	13	14	9	6	9
Hiawatha	20	23	21	16	10	21
Huron-Manistee	NONE	-	-	-	-	-
MICHIGAN	36	36	35	25	16	30
Chequamegon	2	4	4	2	2	4
Nicolet	29	24	30	20	11	21
WISCONSIN	31	28	34	22	13	25
Superior	35	38	34	25	16	24
Chippewa	214	201	201	122	59	97
MINNESOTA	249	239	235	147	75	121
REGION NINE TOTALS:	316	303	304	194	104	176

FIELD NOTES

By Nancy and Hal Roberts

The Summer Season **June 1 to July 31, 1979**

The summer season started out cool and wet continuing the trend that had prevailed during the late spring. Temperatures did not reach normal levels until the week of July 15 and then promptly dropped again. Precipitation remained at normal or above with the exception of areas in southwest and south central which had slightly below normal rainfall amounts.

The season produced a good number of interesting observations but not many spectacular rarities. Possibly of greatest interest was the identification of the Arctic Tern which is described in **By the Wayside.** Waterfowl nesting was reported to be satisfactory because of adequate water levels. Shorebirds were a little late leaving the area in some instances because of the late spring and cool beginning of summer. Both cuckoos were seen in numbers by many observers and it was speculated that their apparent increase might be correlated with the tent caterpillar infestation which was rather severe this summer. In vireos and warblers, the number of observations of southern species was significantly higher, with sightings of White-eyed Vireos, Kentucky Warblers, Yellow-breasted Chats as examples. There were also some instances of species extending their summer range southward.

The number of observers was down to 56 from a high of 65 last summer. However, coverage of the state was good with all but twelve counties being covered. Forty were visited by two or more observers. Jackson County had the densest population of observers with a total of eight. Don Follen, Sr. was the lucky one to find a Kirtland's Warbler there; see **By the Wayside.**

Perhaps shortages and inflated prices of gasoline may have kept watchers closer to home territory. If so, this may be seen more in the season coming up. The more intensive study could prove to be of much value in determining more closely summer breeding ranges.

Following are the highlights of the season:

Common Loon: Unusually far south were the pair with a half-grown, flightless young in Monroe County on July 3 (Eric Epstein); the one in Jefferson County on June 24 (Karen Etter Hale); the five in Milwaukee on June 27 (Winnie Woodmansee).

Red-necked Grebe: Birds were present in Burnett, Fond du Lac and Winnebago Counties as expected. Two were observed at Grassy Lake Wildlife Area, Columbia County, from June 10 until July 7. No nesting activity was observed (Randy Hoffman).

Western Grebe: One was noted in Burnett County from June 3 to 11 (Jim Evrard). See **By the Wayside.**

White Pelican: On June 11, two were found at Wisconsin Point, Superior, with no evidence of nesting (Robbye Johnson).

Double-crested Cormorant: Reported present in only eight of the seventeen counties where they have been found in previous summers. A new colony of about 30 nests produced an estimated 50 young in Horicon National Wildlife Refuge (Robert Drieslein).

Little Blue Heron: A late summer visitor in "calico" plumage was noted at the north end of Horicon Marsh on July 21 (Daryl Tessen).

Cattle Egret: The population in Horicon area was noted to be above normal (Drieslein). Numbers were seen there by Tessen also. Five Brown County birds were observed by Edwin Cleary and Brother Columban on June 12 and Tessen found twelve there on July 29.

Great Egret: Ten birds were observed in Burnett County on July 25 (Evrard). Noted also in St. Croix County on July 2 (Sam Robbins), LaCrosse County on June 28 (Tessen), Green Lake County on June 4 (Thomas Ziebell), fewer than normal in Vernon County (Viratine Weber) and noted in Dodge County (Tessen, Judy Haseleu, Drieslein).

Snowy Egret: One found on July 29 in Brown County was flying from an island to the shore (Tessen).

Yellow-crowned Night Heron: On June 9, one was located sitting on a nest at Mud Lake Wildlife Area, Columbia County (Tessen). The only other observations were in Outagamie County on June 14 (Tessen) and five in Racine County on June 24 (John and Lisa Idzikowski). None were noted at Mosquito Hill Nature Center, Outagamie County, where they have been found in recent years (J. Anderson and L. Prickette).

Least Bittern: Found in Monroe County on June 4 (Epstein) and June 28 (Tessen). Also reported in Brown, Manitowoc, Jackson, Marathon, Waupaca, Fond du Lac, Winnebago, Dodge and Waukesha Counties.

Mute Swan: Two were present in Pike's Bay, Bayfield County, until July 14, but neither nest nor young were located (Johnson). Found in Douglas, Bayfield and Ashland Counties (Albert Roy), one in Dodge County on June 30 (Dennis Gustafson) and July 21 (Tessen). One at Goose Pond, Columbia County, on July 28 may have been an escaped bird (Steve Thiessen).

Whistling Swan: One at Pershing Wildlife Area, Taylor County, on June 4 was reported to be able to fly (Robbins).

Canada Goose: Of a group of 13 in Douglas County on June 4, three were banded (Roy). The largest reported concentration was 700 in Brown County at the end of the period (Cleary and Columban). Horicon Refuge numbers were reported above normal (Drieslein).

Gadwall: Summering birds were noted in Burnett, Marinette, Brown, Manitowoc, Green Lake, Winnebago, Columbia, Dodge and Milwaukee Counties.

Pintail: Two were in Burnett County on July 26 (Evrard), in Marinette County (Harold Lindberg), in Columbia County on June 10 (Hoffman) and nesting at Horicon (Drieslein, Tessen).

Green-winged Teal: Eleven were counted in Burnett County on June 3 (Evrard). Birds were also found in Marinette County (Lindberg), Door County (Steve Kringes), Jackson County (Epstein), Brown County (Melvin Wierzbicki), Manitowoc (Charles Sontag, Tessen and Robbins), Waupaca (Tessen), Green Lake (Ziebell), Dodge (Drieslein), Dane (Thiessen) and Jefferson Counties (Hale).

American Wigeon: Two were recorded in Douglas County on June 26, one in Burnett County on June 5 (Evrard), in Dodge County (Drieslein), two in Dane County on July 6 (Thiessen) and two in Milwaukee on June 27 (Dennis Gustafson).

Northern Shoveler: Reported in two new areas; in Sawyer County on June 4 (Robbins) and in Calumet County (Carol Rudy).

Redhead: Broods were noted in Green Lake County on June 21 (Ziebell), Winnebago and Dodge counties on July 21 (Tessen). Birds were also located in Brown, Monroe, Columbia, Dane and Milwaukee Counties.

Ring-necked Duck: One at Green Lake on June 1 may have been a migrant (Ziebell). 97 summer residents were in Crex Meadows on July 20 (Evrard); noted in Douglas County throughout the period (Roy); Oneida County on June 28 (Phil Vanderschaegen); a female and three young were observed in Monroe County from June 21 to July 17 (Epstein); found in Columbia County on June 17 (Hoffman).

Canvasback: The only report was of one found in Fond du Lac County on June 9 (Tessen).

Greater Scaup: One was observed in Manitowoc on June 12 (Robbins and Tessen).

Lesser Scaup: Most observations were of single birds with no evidence of nesting. A male was noted in Burnett County on July 25 (Evrard), two in Brown County on June 14 (Robbins, Tessen) and June 30 (Cleary and Columban), one in Monroe County on June 4 (Epstein),

two in Green Lake County until June 25 (Ziebell), one in Calumet County on June 11 (Rudy), one in Manitowoc on June 12 (Tessen and Robbins) and in Manitowoc from June 5 to July 12 (Sontag), in Columbia County on June 10 (Hoffman) and June 13 (Steve Lang) and on July 4 in Milwaukee (Thiessen).

Common Goldeneye: A female was noted in Manitowoc from July 1 to 9 (Sontag).

Ruddy Duck: Broods were found in Winnebago County on July 21 (Tessen) and ten were counted there on July 23 (Ziebell). One was in Burnett County on June 3 (Evrard), found in Manitowoc County on June 12 (Robbins), Columbia County on June 9 (Tessen) and June 13 (Lang) and in Dodge County (Drieslein).

Hooded Merganser: An adult and four young were found in LaCrosse on June 28 (Fred Z. Lesher) and June 29 (Tessen). Observed into July at Mosquito Hill Nature Center, Outagamie County (Anderson and Prickette). Also found in Vilas, Oneida and Price Counties.

Common Merganser: Observed in Iron County (Mary E. Butterbrodt), Vilas County (Linda Thomas) and Green Lake (Ziebell).

Red-breasted Merganser: Two were present in July 24 in Oneida County (Paul and Louise Engberg) and noted in Door County (Krings, Thiessen).

Turkey Vulture: Forty recorded in Waukesha County on June 7 (John Bielefeldt).

Sharp-shinned Hawk: Located in Price County on July 14 (Maybelle Hardy), Barron County (Janelle Humphrey), Langlade County on July 26 (Tessen), Door County on June 28 (Krings), Monroe County on July 9 (Epstein) and Dodge County on June 9 (Tessen).

Cooper's Hawk: Only five observations were reported; one in Burnett County on June 3 (Evrard), in Menomonee County on July 26 (Tessen), Jackson County on July 7 (Lesher), Monroe County on June 3 (Epstein) and Waupaca County on June 26 (Tessen).

Krider's Red-tailed Hawk: Carol Rudy reports having observed a white-tailed hawk in company with Red-tails on June 3 in Calumet County.

Broad-winged Hawk: In addition to northern locations, the bird was found in Waukesha County on June 16 (Gustafson) and to July 12 (Bielefeldt).

Bald Eagle: Sightings were recorded in three new areas: Door County on June 2 (Thiessen), Waupaca County on June 15 (Tessen) and three in Vernon County on June 7 (Weber). About the usual number of reports from the usual locations otherwise.

Osprey: Reports came from northern areas plus Outagamie County on July 19 (Tessen), two until June 26 in Green Lake County (Ziebell) and in Dodge County on June 1 (Drieslein).

Spruce Grouse: One was noted in Douglas County on June 12 (Idzikowskis).

Sharp-tailed Grouse: At least twenty were found in Vilas County on June 11 (Idzikowskis), Oneida County on June 28 (Vanderschaegen), five on July 20 in Burnett County (Evrard) and in Jackson County on June 21 (Epstein).

Common Bobwhite: Population was noted to be above normal in Winnebago County where five were found on July 26 (Ziebell). One found in Fond du Lac County on July 26 was the first noted there since 1958 (Rockne Knuth).

Wild Turkey: Juneau County birds were seen on June 6 (Epstein) and 16 (Lesher). One in northeastern Monroe County on June 4 may have been a stray from Juneau County (Epstein).

Sandhill Crane: On June 28 in Burnett County, 28 were present (Evrard). Unusual was the one found in Ozaukee County on June 3 (Noel Cutright).

King Rail: One was found in LaCrosse County on June 28 (Tessen) and on June 10 in Columbia County (Hoffman).

Yellow Rail: Two were heard in Powell Marsh, Vilas County on June 11 (Idzikowskis).

Semipalmated Plover: Five lingered in Calumet County until June 2 (Rudy). Early fall migrants arrived in Dodge County on July 21 (Tessen).

Black-bellied Plover: Fall birds were in Fond du Lac County on July 18 (Tessen) and 17 were in Dodge County on July 31 (Tessen).

Ruddy Turnstone: Thirty-five spring birds were present until June 1 in Milwaukee (Gustafson) and forty were present in Manitowoc until June 6 (Sontag). Early fall migrants reached Manitowoc on July 27 (Sontag).

Whimbrel: One was observed in Ashland County on July 28 and 29 (Roger Everhart). See **By the Wayside.**

Solitary Sandpiper: No spring birds were present during the period. Earliest fall migrants were those in Chippewa County on July 7 (Robbins).

Willet: A bird in spring plumage was observed in Manitowoc from July 26 to 30 (Sontag).

Greater Yellowlegs: One in Dodge County on June 30 was the earliest fall arrival (Gustafson) followed by Brown County sightings on July 2 (Cleary and Columban).

Lesser Yellowlegs: Late spring birds were in Brown County on June 14 (Robbins and Tessen). Fifteen early fall birds were in Dodge County on June 30 (Gustafson).

Pectoral Sandpiper: Earliest fall returnees were noted in Dane County on July 13 (Thiessen).

White-rumped Sandpiper: Three were found in Dodge County on June 20 (Tessen).

Baird's Sandpiper: In Dodge County, one was observed on June 20 and three on July 31 (Tessen). One was found in Milwaukee on July 24 (Gustafson). These were the only sightings.

Least Sandpiper: Two early fall birds were noted in Dodge County on June 30 (Gustafson).

Dunlin: Two were in Manitowoc on June 20 (Sontag). Two in summer plumage were present in Milwaukee on July 4 (Thiessen).

Short-billed Dowitcher: Earliest fall arrival was in Manitowoc on July 3 (Sontag).

Stilt Sandpiper: Twelve fall migrants were noted in Outagamie County on July 19 (Tessen). Other observations were fifty in Dodge County on July 21 (Tessen), two in Dane County on July 25 (Thiessen) and one in Dodge County on July 28 (Gustafson).

Semipalmated Sandpiper: Latest June birds were seen on the 21st in Manitowoc (Sontag). Early fall birds were seen in Jackson County on July 17 (Epstein).

Western Sandpiper: A spring migrant was found with Dunlins and Semipalmated Sandpipers in Calumet County on June 2 (Rudy) and a fall bird was noted in Outagamie County on July 29 (Tessen).

Sanderling: Two spring birds lingered in Milwaukee until June 1 (Gustafson). An early fall migrant reached Milwaukee on July 21 (Thiessen).

American Avocet: Four birds were observed in Lakeside Park, Fond du Lac County, on July 24 (Knuth).

Wilson's Phalarope: A Marathon County nest was destroyed by heavy rain on June 15. Two birds were present (Ken and Jan Luepke). Other birds were noted in Burnett, Outagamie, Winnebago, Calumet, Manitowoc, Columbia, Dodge and Dane Counties.

Northern Phalarope: The only report was of one in Dodge County on July 31 (Tessen).

Glaucous Gull: On June 28, 29 and July 20, a first year bird was noted in Manitowoc with Herring and Ring-billed Gulls. Not all field marks were noted so the observer, Charles Sontag, recommends this be called a "definite maybe".

Ring-billed Gull: Many observations; an estimated 200 were noted in Milwaukee on June 25 (Woodmansee).

Laughing Gull: On June 6, one in immature plumage was noted in Manitowoc. It was reported to be two inches longer than nearby Bonaparte's Gulls (Sontag).

Franklin's Gull: Noted in Manitowoc on June 3 and July 27 (Sontag), six on June 12 (Tessen and Robbins), and in Milwaukee (Gustafson) where there were three on July 4 (Thiessen).

Bonaparte's Gull: One was seen in Douglas County on June 24 (Johnson). Others were seen along Lake Michigan including more than 200 in Manitowoc on June 3 (Sontag).

Little Gull: Found in two locations; in Manitowoc on June 12 (Tessen and Robbins) and on June 22 and 27 (Sontag), and one in Milwaukee on July 24 and two from July 26 to 31 (Idzikowskis).

Forster's Tern: In addition to a number of observations along Lake Michigan, two were found in Monroe County on June 8 (Epstein), four in Green Lake on June 5 (Ziebell), Columbia County on June 9 and Waupaca County on June 15 (Tessen) and four in Jefferson County on June 24 (Hald).

Common Tern: Found in north and east counties and in Waupaca County on June 15 (Tessen).

Caspian Tern: In addition to north and east locations, found in Monroe County on June 1 (Epstein) and June 10 (Lesher) and five in LaCrosse on July 21 (Lesher).

Black Tern: Largest concentrations were reported in Burnett County (Evrard) and Calumet County (Rudy). Reported present in 25 counties.

Arctic Tern: One in Manitowoc County was seen by Robbins and Tessen on June 12 and by Sontag on June 20 and a documentation was approved by WSO Records Committee. See **By the Wayside.**

Yellow-billed and Black-billed Cuckoo: Many observers reported seeing more than usual this summer.

Screech Owl: Found in Brown County (Cleary and Columban), Winnebago (Ziebell), Dodge County (Drieslein) and Waupaca County (Vern Aune, Bielefeldt).

Great Gray Owl: An observation was made in Forest County on July 18 (Bill Cochrane, fide Don Follen, Sr.) See **Passenger Pigeon** (Vol. 42, No. 1, Spring, 1980, P. 25.) Documentation was approved by WSO Records Committee.

Short-eared Owl: On June 10, one was located in Marathon County (Luepkes).

Saw-whet Owl: One was found in Douglas County on June 13 (Idzikowskis).

Western Kingbird: One was observed two miles north of Grassy Lake Wildlife Area, Columbia County, on July 7 (Hoffman).

Yellow-bellied Flycatcher: Three singing males were present in Taylor County on June 26 and make Sam Robbins suspect that the southern limit of breeding area is somewhat farther south than he had realized.

Acadian Flycatcher: Six were located in Grant County on June 3 (Tessen), present throughout the period in Ozaukee County (Idzikowskis) and nineteen males were located in Waukesha County (Bielefeldt).

Alder Flycatcher: Present in north and central counties. Somewhat surprising was the report of five birds seen at Cedarburg bog, Ozaukee County on June 20 (Idzikowskis).

Willow Flycatcher: Most northerly was the observation in Manitowoc County on June 12. (Robbins and Tessen).

Olive-sided Flycatcher: Birds were observed in Milwaukee on June 1 (Gustafson), to June 10 and one on July 29 (Idzikowskis). Other reports were from Douglas, Ashland, Vilas, Forest and Door Counties.

Gray Jay: Observed in Douglas, Oneida, Forest and Price Counties.

Northern Raven: Noted in eastern Jackson County which is favored by a number of northern species (Epstein).

Boreal Chickadee: The only report was of two in Oneida County on July 26 (Tessen).

Tufted Titmouse: Only four observations were reported; Vernon County (Weber), three in Grant County on June 3 and same date in Lafayette County (Tessen) and one in Milwaukee on June 1 (Idzikowskis).

Brown Creeper: Many observations including two singing in Sauk County on June 6 (William Hilsenhoff) and eight north of Wisconsin Dells on June 8 (Kenneth I. Lange).

Winter Wren: Northern locations and one in Waupaca County on June 26 (Tessen) and one singing at Durward's Glen, Columbia County, on June 23 (Hoffman).

Carolina Wren: One was discovered singing in Grant County at Bagley Bottoms on June 3 (Tessen).

Northern Mockingbird: One was noted in Kenosha County on June 30 (Homer C. Bishop) and one in Brown County on July 10 (Cleary and Columban).

Hermit Thrush: Singing birds were found in June in two locations in Sauk County (Lange).

Swainson's Thrush: Three reports; one in Forest County on July 26 (Tessen), Oconto County on June 25 (Tessen) and Manitowoc County on July 24 (Sontag).

Gray-cheeked Thrush: One lingered in Taylor County until June 4 (Robbins).

Blue-gray Gnatcatcher: Many observations in southern counties. Most northerly was the one in LaCrosse on June 1 (Lesher) and in Manitowoc on June 12 (Robbins and Tessen).

Ruby-crowned Kinglet: Found in Ashland County on June 30 (Robbins), in Iron County (Mary E. Butterbrodt), on June 16 in Iron County (Vanderschaegen), in Vilas County (Linda Thomas) and in Vilas County on June 11 (Idzikowskis).

Loggerhead Shrike: One was observed in Iron County on July 6 (Butterbrodt), noted to be down in numbers in Marinette county (Lindberg), two were present in Door County on July 15 (Carl Schroeder). There were three observations in Sauk County; June 10 (Ed Peartree), June 16 (Thiessen) and two on July 21 (Tessen).

White-eyed Vireo: An unusual number of observations was reported. Ed Peartree banded one at Honey Creek as detailed in **By the Wayside.** Also noted; one in Grant County on June 3 (Tessen), one in Dane County at Owen Park in Madison (Lange), two in June in Washington County (Cutright), in Milwaukee County on June 3 (Woodmansee) and in Walworth County on June 20 (Tessen).

Bell's Vireo: Found in LaCrosse County on June 26 (Lesher) and June 28 (Tessen), in Columbia County on June 17 (Hoffman), two in Dane County on June 17 (Thiessen), one in Grant County on June 3 (Tessen), a total of four in Sauk County (Lange) including a nest with one egg on June 6 (Lange and Michael Mossman).

Solitary Vireo: Four males were noted in Waukesha County from June 15 to July 10 (Bielefeldt). Others were found in Douglas, Ashland and Forest Counties.

Prothonotary Warbler: Four observations; in LaCrosse on June 28 (Tessen), Vernon County on July 15 (Weber), Columbia County on June 17 (Hoffman) and Grant County on June 3 (Tessen).

Worm-eating Warbler: One was discovered in Baxter's Hollow, Sauk County, on June 6 (Hilsenhoff). Lange found it there and also at Hemlock Draw, Sauk County; he reports having found them at both locations at least three successive years. Noted also in Grant County on June 3 (Tessen) and in Waukesha County at Lapham Peak in June (Linda Safir, Mary Donald, Roger Sundell, fide Bielefeldt).

Brewster's Warbler: One was found in Waukesha County on June 5 (Bielefeldt) and one in Washington County on July 12 (Haseleu). See **By the Wayside.**

Tennessee Warbler: Spring birds lingered in Winnebago County until June 11 (Clark Schultz). One in Dane County on July 4 is puzzling (Hilsenhoff). Two fall migrants reached Milwaukee County on July 24 (Idzikowskis).

Nashville Warbler: Many observations throughout the period and scattered throughout the state including such southern counties as Sauk, Columbia, Dane, Waukesha and Grant.

Cape May Warbler: Noted in Douglas County, Ashland, Iron, Vilas, Sawyer and Price counties.

Black-throated Blue Warbler: Recorded in Iron County on June 16 and Forest County on June 19 (Vanderschaegen). Found in Vilas County on July 26 (Tessen).

Black-throated Green Warbler: One in Waukesha County on June 26 (Bielefeldt) was south of the usual summer range.

Cerulean Warbler: Farthest north was the one in Price County on June 27 (Maybelle Hardy).

Blackburnian Warbler: Observed in Sauk County on June 23 (Thiessen) where it has been found in previous summers.

Blackpoll Warbler: Recorded in Vernon County on July 15 (Weber).

Pine Warbler: Five males were noted on June 11 in Waukesha County (Bielefeldt), out of the usual north and central range.

Kirtland's Warbler: One was located on June 7 in Jackson County (Don Follen, Sr.) See **By the Wayside.** The WSO Records Commiteee approved documentation.

Palm Warbler: Observed in Ashland County on June 30 (Robbins), Iron County (Butterbrodt), two in Vilas County on June 11 (Idzikowskis), and one in Oneida County at Three Lakes bog on June 22 (Gustafson) and two on June 12 in Sawyer-Ashland counties (Idzikowskis).

Northern Waterthrush: Found in a number of unusually far south locations; in Waupaca County on June 15 and four there on June 26 (Tessen) and two in Columbia County on June 16 (Lange, Mossman and Hoffman).

Kentucky Warbler: Reports came from three counties. Farthest north was one in Trempealeau County on June 6 (Lesher). Also observed in Waukesha County on June 16 (Gustafson), one on June 18 (Aune) and four males until June 30 (Bielefeldt) and five were seen in Grant County on June 3 (Tessen).

Connecticut Warbler: Late migrants were noted in Sauk County on June 6 (Hilsenhoff) and Juneau County on June 8 (Epstein). Two were spoted in Douglas County on June 12 (Idzikowskis) and there on July 7 (Robbins). Three were in Iron County on July 16 (Butterbrodt) and one in Oneida County on June 13 (Vanderschaegen).

Mourning Warbler: South of the usual summer range were two in Dane County on July 8 (Thiessen), three in Waukesha on June 29 (Aune) and seven males found there until July 17 (Bielefeldt).

Yellow-breasted Chat: One was located in Sauk County on June 6 (Lange) and two observations were recorded in Waukesha County; on June 7 (Bielefeldt) and on June 14 (Aune).

Hooded Warbler: Found in four counties; several places in Sauk County Baraboo Hills (Lange) one in Dane County on July 8 (Thiessen); in Waukesha County where two were seen on June 16 (Gustafson) and seven males were seen until July 17 (Bielefeldt) and in Walworth County on June 20 (Tessen).

Canada Warbler: More south than usual were observations in Sauk County of eight on June 6 (Hilsenhoff) and on June 23 (Thiessen). In Waukesha County on July 7 (Bielefeldt) and Milwaukee County from June 1 to 5 (Woodmansee).

Orchard Oriole: Found in Marinette County (Lindberg), in LaCrosse County on June 28

(Tessen) and July 21 (Lesher), seven singing males from June 10 to July 7 in Columbia County (Hoffman), two pairs in Waukesha County from June 7 to 23 (Bielefeldt), two in Milwaukee on June 22 (Woodmansee) and one male in Lafayette County on June 3 (Tessen).

Dickcissel: The only northern reports were from Sawyer County on June 26 (Craig Faanes) and St. Croix County on July 4 (Robbins). Found in eighteen south and central counties including 103 singing males from June 9 to July 7 in Columbia County (Hoffman).

Evening Grosbeak: Noted in Douglas, Ashland, Iron, Vilas, Sawyer, Price, Oneida and Forest Counties.

Purple Finch: Two were in Waupaca County on June 26 (Tessen).

Pine Siskin: Farther south than expected were reports from Dane County on June 24 (Lange) and Milwaukee on July 27 (Woodmansee).

Red Crossbill: The only report was of seven in Menomonie County on July 26 (Tessen).

Grasshopper Sparrow: Reported in seventeen counties scattered throughout the state from Iron to Waukesha Counties.

LeConte's Sparrow: One was heard east of Exeland, Sawyer County, on June 4 (Robbins). One was noted in Columbia County on June 10 (Hoffman)

Sharp-tailed Sparrow: Two were observed in Winnebago County on July 28 (Ziebell).

Lark Sparrow: Birds were noted in Jackson County on June 9 (Robbins), Adams County on July 14 (Tessen) and three adults in Sauk County on June 16 (Thiessen).

Clay-colored Sparrow: Found in expected north and central counties and in Sauk County on June 23 (Thiessen), Columbia County on July 7 (Hoffman) and Waukesha County where two were seen on June 20 (Tessen) and one on July 7 (Bielefeldt).

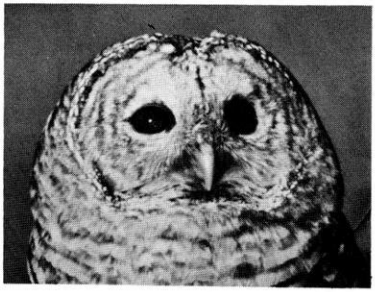
White-throated Sparrow: Farthest south were the four calling males and a few immatures in mid-July in Fond du Lac County (Bill Volkert) and two in Columbia County on June 16 (Lange).

Lincoln's Sparrow: Found in Ashland County on June 30 (Robbins), one in Vilas County on June 11 (Idzikowskis) and one in Forest County on July 26 (Tessen).

1979 Observers

Marjorie Albrecht, J. Anderson and L. Prickette, Vern Aune, Ruth Barnett, John Bielefeldt, Homer C. Bishop, Mary E. Butterbrodt, Edwin D. Cleary and Brother Columban, Noel Cutright, Robert Drieslein, Paul and Louise Engberg, Eric Epstein, Roger Everhart, Jim Evrard, Craig Faanes, Don Follen, Sr., Jim Frank, Bonnie Gilbertson, Dennis Gustafson, Karen Etter Hale, Maybelle Hardy, Dorothy Harmer, Judy Haseleu, William Hilsenhoff, Randy Hoffman, Janelle Humphrey, John and Liza Idzikowski, Robbye Johnson, Rockne Knuth, Steve Krings, Steve Lang, Kenneth I. Lange, Fred Z. Lesher, Harold Lindberg, Ken and Jan Luepke, Mrs. Joseph Mahlum, Ted May, Ed Peartree, Sam Robbins, Albert Roy, Carol Rudy, Carl Schroeder, Clark Schultz, Charles Sontag, Mrs. Charles Spahn, Daryl Tessen, Steven Thiessen, Linda Thomas, P. Vanderschaegen, Bill Volkert, Viratine Weber, Melvin Wierzbicki, Winnie Woodmansee, Thomas Ziebell.

By the Wayside...



A Western Grebe Observation in Burnett County

On June 3, 1979, at 1:00 p.m. I observed a Western Grebe just offshore (25 feet) of the boat landing on Fish Lake on the Fish Lake Wildlife Area in Burnett County. I noted the red eye, black top of head and white undersides of the large grebe with the aid of 7x35 binoculars. The bird was swimming on the water, diving and feeding. On June 11, 1979, at 2:00 p.m., Wildlife Manager Trainee, Ned Norton, and I observed a Western Grebe on Phantom Lake, Crex Meadows.

Jim Evrard
Grantsburg, WI

An Ashland County Whimbrel

While doing shorebird research on Long Island in Lake Superior, I was fortunate enough to observe a single Whimbrel for two consecutive days. On July 28th, at the east end of the island, I saw a large bird standing on a sand flat in vegetation approximately one-half meter tall. As I approached the bird it appeared nervous but I was able to get within 30 meters and got a good look at it. Characteristics that were observed in the field were a long bill with a definite droop, stripe over the eye and on crown, a tall, erect stance and when in flight a solid coloring on the back. No wing or tail markings were noticeable. The Whimbrel flew when I tried to approach it. It's flights were less than 100 meters in duration with wingbeats slow and smooth.

On July 29th, the Whimbrel was found about 200 meters from where it was first spotted, again standing in vegetation approximately one-half meter tall. It was observed for about ten minutes before it flew off. The bird was not seen again and is assumed to have continued its journey south.

Roger Everhart
St. Cloud, MN

Arctic Tern in Manitowoc Harbor

Parking where we had a good view of the Manitowoc Harbor breakwater, I set up my telescope on the car window while Daryl Tessen set his up on a tripod a few feet away. On the breakwater, something over one-eighth mile away and in good sunlight, we noted several hundred Bonaparte's Gulls. With them were six to eight terns, and to these we gave close attention. As I

examined five of these resting close together on the breakwater, satisfying myself they were Common rather than Forster's, I noticed that one had a noticeably squat appearance. It was facing directly toward me at first, then shifted slightly toward the left. Having viewed both positions, I was positive that the squat appearance was due to shorter legs. Next to be examined was the breast and face. My on-the-spot written notes said: "Breast showed definite light gray tint, contrasted with snowy white area on face just below solid black cap. Legs bright red. Bill appeared solid black." While the bill did not appear red like the legs, it did not seem jet black either. I suspect it was in process of changing from one color to another. There was more red on the bills of the nearby Common Terns. Once assured of these field characteristics, I jumped out of the car to call Daryl's attention to the Arctic Tern. I found he was studying the same bird, coming to the same conclusion, and was about to call my attention to it.

I have been "gun-shy" about identifying this species in the field previously. I often recorded it along the Massachusetts coast as a boy, but based identification upon the combination of short legs and blood-red bill. I was unaware of how good a field mark the light gray breast was; and when it became generally known that the bill color was not an infallible field mark, I wondered if at least a few of my previously-identified Arctics might be questionable.

In mid-July, 1979, one month after the Manitowoc sighting, I had the opportunity of watching several white terns along the Maine cost in company with my brother, Chandler. He showed me how easy it was to pick out Arctics in flight at close range, using grayish breast and white face as the main characteristics. Near Rockland, Maine, where we were observing, the Arctics outnumbered the Commons. If I had any doubts about the identification of the Manitowoc bird (which I did not have!) these would have been dispelled by the subsequent experience in Maine.

Sam Robbins
Medford, WI

A White-eyed Vireo Banded at Honey Creek:

The bird was found in the net by my wife, Jeanette, and myself at approximately 13:45. It was greenish with white wing bars and yellow on the sides. When I saw the head and white eye, I knew what we had in hand. The bird was an adult and apparent female by the large brood patch. The wing was 62mm. and weight 12.9 grams. It was well photographed.

Ed Peartree
Oconomowoc, WI

Two Brewster's Warbler Observations

At Pike Lake State Park, Washington County, on July 12 and 13, 1979, a tiny warbler-sized bird was seen from about 15 to 20 feet with 7x35 binoculars. Yellow crown, black eye-stripe with a wide white area between stripe and yellow of crown, bluish gray back, wings and tail, two white wing bars, white on edges of tail when fanned, yellow wash on breast, white chin and belly. It seemed to be waiting for us to leave so it could feed young. It

had a mouthful of green worms. A second bird flew in with a mouthful, went right down into the grass, and came up with an empty mouth. It was similar to the first bird except more dull or uniform in color so I wondered if it might be a female Blue-wing. But it had a white chin, yellow wing bars and more of a yellow-orange crown. The black eye stripe was also very prominent. Peterson's Guide says white underparts identify Brewster's. I have seen several Blue-winged males but have never satisfactorily identified a female. (It seems possible that hybrids would come in both sexes). We don't have real powerful camera equipment, but we did get some pictures in which colors can be seen.

Judy Haseleu
Hartford, WI

A Brewster's Warbler at Kettle Moraine State Forest

South Unit, Waukesha County on June 5, 1979. A bird singing the song of a Golden-winged Warbler was brought into view in the outer branches of a low shrub at path's edge by "squeaking". Only a quick look was possible but as it repeated the song the yellow cap with black eye line, white throat and belly with diffuse yellow breast patch (more pronounced than in many Brewster's), and yellow wing bars on grayish upperparts were noted in this warbler-sized bird.

John Bielefeldt
Waukesha, WI

Kirtland's Warbler

On July 7, 1979, my wife Mary and I were over in Jackson County looking for Chuck Sindelar's cabin. Apparently we had gone past and around it for some time. Since I had been told that it was about a quarter mile off the road, I found myself driving down a pulping lane. I parked by a pile of cord wood pulp and walked down a trail a quarter of a mile. When I returned to the car where Mary and Ira (my son) were sitting, I immediately said to Mary, "Do you hear the Kirtland's Warbler?" She said she could hear a bird singing but didn't know what it was. I then played a tape recording of a Kirtland's and she agreed to it. I saw the bird for nearly a half hour as it was sitting in the top of a 25-foot Jack Pine. From a distance of approximately 100 feet, I scoped the bird with my Balscope zoom 60 and with constant tail wagging, the bird sang incessantly. Size - House Sparrow length. Black streaking or spots on the sides, blue-gray back with very visible black stripes. Underparts mostly white or light yellow. A week later I was in contact with Mr. Paul Quaker of the DNR team, the fellow who had found the Kirtland's last year with Nancy Tilghman, and he told me that this was a half mile from the spot where the adult six-year-old female was trapped in 1978. Chuck Sindelar had told me of a sighting he had this year and Mr. Quaker said that this was about a half mile from where the adult male had been observed singing in 1978. This location is about three miles from my observation.

Don Follen, Sr.
Arpin, WI

Pileated Woodpecker in Bayfield County

On April 5, 1980, a Pileated Woodpecker, the only one I have seen here in twenty years, visited my yard on Eagle Lake, Town of Delta, Bayfield County. I first noticed the bird standing on the hood of a blue Chrysler which had been sitting in the yard over winter. It kept climbing the windshield and pecking at it. It seem most interested in its image, which it very likely saw in the glass. I watched it for quite a while as it continued this behavior.

After it had apparently tired of this action with the front windshield, it flew to the left side of the car and landed on the window frame adjacent to the outside mirror. Here it hung for a long time, pecking at its image in the mirror. It would fly up from time to time and inspect the opposite side of the mirror. Not finding anything there, it would again alight at a position where it could view its image in the mirror and peck at it.

The bird spent all of a half hour in this activity. It was a male with a bright red crest. I suspect it thought it saw another male and was spoiling for a fight.

Two days later the bird again appeared, and it went directly to the left side mirror and repeated what it had done before. It has not returned since.

Eugene F. Dietz

A Possibly Paired Female Albino Grackle

The occurrence of albino birds is not particularly rare in itself, but the fact that the color of the albino female in the following sighting apparently had not prevented her successful pairing may be of interest.

On 29 April 1972 in Menasha, Wisconsin, an albino female grackle **Quiscalus quiscula** flew by us followed by a normally colored male. They landed on a lawn about 100 feet distant where the male followed the female in the course of their subsequent foraging. After awhile the female flew off and the male again followed. Thus, they appeared to be traveling together as a pair.

All of the female's plumage appeared to be white, although the head had a yellowish cast. The underparts did not appear as bright white as above, but this may have been because they were not directly lighted. The bill was yellow.

Unfortunately, we were not able to locate the pair in the vicinity during later searches so do not know if the albino bred successfully.

M.E. Minock
University of Wisconsin Center-Fox Valley
Menasha, Wisconsin
and M.-F.M. Minock
Larsen, Wisconsin

Proceedings of the 1979 Annual Meeting of the Wisconsin Society for Ornithology May 19, 1979

The meeting was called to order in the auditorium of the University of Wisconsin - Green Bay by President Daryl Tessen.

An agenda for the meeting was included in the packet of material each convention registrant received.

Minutes of the 1978 meeting were also included in this packet. It was moved and seconded and motion duly passed that the minutes be accepted as published.

Copies of the treasurer's report for the year 1978 were distributed. In the absence of the treasurer the secretary commented on the report, which showed that our operating expenses -primarily publication of the **Badger Birder** and the **Passenger Pigeon** exceed the operating income (mostly from dues.) so that it may be necessary to raise the dues.

Other income such as gifts, donations and bequests have been large enough to cover the operating loss and maintain the Honey Creek land and nature center, run the society, keep the field notes on computer, provide scholarships, free loan of slides and provide some research grants.

After questions from the floor were answered, the treasurer's report was accepted as submitted.

Vice President, Mary Donald, asked those present to fill out and turn in the questionnaires concerning operation of WSO. These questionnaires are in the convention folders.

Membership Chairman, Alex Kailing, announced that total membership of WSO is 1175 up about 50 from last year.

Publications Chairman, Ruth Hine, told the members that WSO is sponsoring a publication on **Birds of the Apostle Islands** by Stan Temple and Jim Harris both of UW Madison. The National Park service is interested in this booklet, and may help finance it.

Conservation: Via a letter to President Tessen, Convention Chairman, Ray Anderson, reported that:

1. Letters were written to:

   Wisconsin Department of Natural Resources on a petition for the adoption of administrative rules on wetlands.

   Senators Nelson and Proxmire, and Congressmen Obey and Kasten on congressional bills on nongame species.

2. He testified at the following public hearings on behalf of WSO:

   A hearing on the completeness of an Environmental Impact Statement on the withdrawal of public lands from Juneau County Forests for sale to private development of irrigated agriculture. "I supported the impact statement as written and offered a few additions. It was a very complete assessment of the entire situation and, as I stated at the hearing, if anyone really read it critically, they could not support the proposed withdrawal of public lands."

   He also testified at the public hearing for the issue itself. This was a 3-day hearing. The hearing examiner ultimately decided in favor of the opposition (i.e., those opposed to the withdrawal). The decision is being appealed by those favoring the withdrawal. "My testimony, on behalf of WSO, was in opposition to the withdrawal. It is nice to win one now and then."

3. He will be preparing a letter to the Wisconsin Department of Natural Resources in support of the recreation of Chapter NR 27 of the Wisconsin Administrative Code pertaining to endangered species.

Publicity committee report by Chuck Gilmore:

"I have attempted to keep the WSO in the public eye by sending news releases to twenty newspapers around the state concerning our activities. I have also sent these news releases to the Wisconsin Independant News, a service for the independant radio stations in the State. I have also cooperated with Betty Brown in sending information to these same outlets concerning the annual convention."

Education Committee Chairman, Roy Lukes, reported that Steve Lang as taken over custodialship of the WSO slides and the loan of them to schools, organizations, etc., that request them and has done an excellent job in this capacity.

The education committee scheduled three meetings during the past year, their main goal being to produce an 80 slide carousel of bird slides with an accompanying tape cassette narration. This should be ready for the 1980 convention. If successful, the slides and tape will be duplicated and sold as a package unit. $1,000 has been set aside to develop this program.

Field Trips Chairman, Ed Peartree, reported that all field trips have been announced in the **Badger Birder**. Forthcoming trips are the Walk up the Valley at Honey Creek on Sunday, May 27th and the Spring campout at Wildcat Mountain on June 16 & 17th.

Steenbock Committee Chairman, Fran Hamerstrom sent a report saying that there were four applicants for the Steenbock monetary awards. Winners were Robert N. Rosenfield for a study on "Selected Aspects of the Nesting Ecology of the Broad-Winged Hawk in Wisconsin" and Michael John Jaeger for the study of "The Wisconsin Shore of Lake Superior as Critical Migrant Shorebird Habitat". Mr. Jaeger later withdrew his request for these funds because he could not take on his proposed project at this time. The other two who submitted fine proposals were Richard P. Thiel and Craig Thomson.

Supply Department: Harold Kruse announced his and Carla's retirement as head of the WSO Supply Department after 24 years of service. Two long rounds of applause were given by the members to show appreciation for the work of the Kruses. Chuck Gilmore is taking over operation of the supply department.

Passenger Pigeon Editor, Charles Kemper, reported that he is up to date and on schedule for the Pigeon publications and gave thanks to the associate editor, seasonal editors, other contributors and to Linda Safir, assistant editor, for proofreading.

Associate Editor, Daryl Tessen reported that as Associate Editor, he:

1. Coordinated organizations of WSO Records Committee.
2. Sent 1979 supply of seasonal reports forms (single county, multi-county and nesting), Christmas (1978), May Day and Big Day (1979) forms to all reporters/compilers (combined total 140+ −).
3. Received and processed 1978 spring, summer, fall and 1979 winter reports plus 1978 May Day and Christmas Counts.
4. Summarized the Wisconsin seasonal sightings for the Western Great Lakes Region of **American Birds.**
5. Sent reminders to reporters of approaching deadlines for seasonal reports.

As **Bird Haunts** Editor, Daryl Tessen compiled and edited the 1979 supplement to **Wisconsin's Favorite Bird Haunts.** Both publications are available from the supply department.

Badger Birder Editor, Mary Donald, reported that eleven issues of the **Birder** were published last year and made an appeal for more news and sightings from parts of the state other than southeast. Deadline for news is the second Tuesday of the month. The birder hotline 414-352-3857 is also maintained by Mary and can be called 24 hours a day, so our members can take advantage of the low night rates between 11 p.m. and 8 a.m.

Old Business:

Sam Robbins reported that this past year 69 of the 70 Transects of the Breeding Bird Survey in Wisconsin were manned. Many of the birders involved last year are no longer available because of deaths and moves from the state. There is a need for recruits to cover the western (Mississippi River) Counties.

Vince Heig presented the society with a check for $190.00. The bus company handling the pre-convention trips for the 1977 convention at Stevens Point was paid $190.00 for its services. The check was never cashed. After two years the convention decided to close the convention checking account and turn the money over to the society with a request that the money be used to support ornithological research by University of Wisconsin-Stevens Point students.

New Business:

Ed Peartree, acting for the nominating committee consisting of Peartree, Ruth Hine and Fran Hamerstrom presented the following slate of officers in nomination for 1979-80.

President - Mary Donald	Secretary - Carl Hayssen
Vice President and President Elect - Chuck Gilmore	Treasurer - Linda Safir

It was moved and seconded that the nominations be closed and that the secretary cast a unanimous ballot for the slate presented. Motion passed.

It was moved, seconded and passed to accept the invitation from Ashland to host the 1980 convention. Richard L. Verch is to be Convention Chairman.

President Tessen recognized Carla Kruse who had just entered the auditorium and thanked her for her part in running the supply department since 1955.

President Tessen gave thanks to Tom Erdman, the North East (Wisconsin) Audubon Society, the Green Bay Bird Club and the University of Wisconsin - Green Bay for hosting a fine convention.

The meeting was adjourned.

Respectfully submitted,
Carl Hayssen, Jr.
Secretary

Proceedings of the 1980 41st Annual Meeting of the Wisconsin Society for Ornithology

The meeting was called to order by President Mary Donald, at 1:20 p.m. at Northland College, Ashland, Wisconsin. Attendance at the meeting varied between 64 and 91.

It was moved that we dispense with reading of the minutes of the 1979 annual meeting. Motion seconded and passed.

Copies of the treasurer's report were distributed. In the absence of the treasurer, the secretary summarized the report and answered questions from the floor. The report showed income of $12,746 for 1979 and expenses of $14,668, for a deficit of $1,923. The membership income of $7,293 barely covered the cost ($6,260) of printing the **Passenger Pigeon** and the cost of printing the **Pigeon** has gone up since then. A motion was made to accept the Treasurer's report. The motion was seconded and passed.

Committee Reports:

Memberships: Alex Kailing reported that we currently have 1142 memberships compared to 1128 last year. He made an appeal to members to notify him of address changes since it costs 47 cents to get a **Passenger Pigeon** back with notification by the post office of an address change, and the member misses that **Pigeon**.

Education: Stephen Lang reported that the committee now has for sale a group of 80 slides depicting birds of Wisconsin. Cost $20 plus $5 for an accompanying cassette. The sets were developed for use by schools but are available to anyone.

Lands Committee: Ed Peartree said there was a good turnout at the May work week when new fences were installed.

Long Range Planning: This committee has been organized by Howard Young to get convention site commitments more than one year ahead, to begin planning for the 50th year convention in 1989 and to establish goals for the Society.

Research Chairman, Stan Temple, has submitted a list of research projects being undertaken by ornithologists who would like help from amateurs. This list is being published a few at a time in the **Badger Birder**. It was announced that there will be a society project in the fall of 1980 to determine what trees are being used by Orioles now that the elm trees are dying off. Details will be published in the **Birder**.

Steenbock Awards for 1980 of $100.00 each will go to Paul A. Harris of LaCrosse for a study on the "The Use of Night Lighting as a Capture Technique for Marshland Avifauna", and to Michael John Jaeger of the UW Madison for study on "Wetland Songbird Population Changes following Habitat Alterations."

Editor, Charles Kemper, said there were several papers in this morning's session that would be good material for the **Passenger Pigeon**. The **Pigeon** is on schedule. There is enough material for future issues but more illustrations or photographs are needed.

Associate Editor, Daryl Tessen made an appeal for seasonal reports from the northern part of the state. About 40 to 45 winter reports from the whole state are normally received and about 65 to 75 in the summer. Reports are analyzed and published in the **Passenger Pigeon**. They are computerized and stored at UW Stevens Point and are summarized and sent to the national publication **American Birds**. Wisconsin bird sighting records have been kept since 1946.

Badger Birder Editor, Mary Donald apologized that with all volunteer help putting it out and our slow second class mail service, it may take three weeks from the time she is finished writing until it is received by a member.

Birder Hot Line: Mary Donald encouraged members to call the "Hot Line" 414-353-3130, and was surprised to find that half the members raised their hands when she asked how many have called. She said she normally changes the tape Monday or Tuesday because reports come in after the weekend.

Supply Dept: Chuck Gilmore said he took over the supply department after last year's convention. Present wholesale inventory value of merchandise is about $10,300. Members were reminded to include 75 cents for a book ordered and 25 cents for each other book on the same order.

Old Business: Breeding Bird Survey Coordinator, Sam Robbins, reported that there are 70 Transects in Wisconsin but the most covered in any one year is 69. More people are needed to help in this project which is now in its 15th year. Areas in the populated parts of the state are adequately covered but the southwest and north are not.

New Business: As stated in the last **Badger Birder**, the board of directors suggested the following changes in yearly dues

Senior Citizen* to stay at $3
Regular single from $6.00 to $8.00
Family from $8.00 to $10.00
Sustaining from $15.00 to $25.00 or more
Single Life from $100.00 to $200.00
Patron from $500.00 to $750.00
Library** from $5.00 to $6.00
*do not get **Passenger Pigeon**
do not get **Badger Birder

A motion was made from the floor to accept these changes effective for 1981. Motion seconded and passed.

Craig Faanes moved that the life memberships be paid all at once or in four (4) equal consecutive yearly payments of $50.00 each. Alex Kailing seconded the motion which was then passed.

The nominating committee presented the following slate of officers for 1980-81:

President - Chuck Gilmore
Vice President & President Elect - Tom Erdman
Secretary - Carl Hayssen
Treasurer - Linda Safir
Editor - Charles Kemper

A motion from the floor asked that the nominations be closed and the secretary be instructed to cast a unaminous ballot in favor of the nominees. Motion seconded and passed.

Chuck Gilmore announced that the Ned Hollister Bird Club of Beloit has offered to host the 1981 WSO convention either at Beloit College or at Rock College in Janesville. Howard Young, speaking for the LaCrosse Audubon Society and the Biology Dept. of UW LaCrosse invited the society to hold their 1982 convention in LaCrosse. The membership voted to accept both invitations.

Howie Young spoke words of appreciation to Mary Donald for a good job done leading WSO during the past year.

Meeting adjourned at 2:20 p.m.

Respectfully Submitted,
Carl G. Hayssen, Jr.
Secretary

From Other Journals

Birds Fly. Why Can't I?

Daedalus and his son Icarus strapped on wings made from wax and bird feathers and flew out of imprisonment. But in the joy of soaring like a bird, the legend says, Icarus flew too near the sun, the wax melted, and he fell to his death. Everyone knows, of course, that the legend is wrong. At the rarified heights routinely reached by birds, man and other mammals suffer and die. Physiologists have been intrigued for decades by the ability of birds to survive, even to thrive, at altitudes that are harmful to other species. Now, a young investigator at Duke University has found at least part of the way they do it.

At high altitudes, all animals hyperventilate — an involuntary mechanism of fast breathing in which carbon dioxide is expelled in large amounts. This loss of carbon dioxide causes the pH of blood to become alkaline and constricts blood vessels. This, in turn, reduces the flow of blood to the brain and brain cells become starved for oxygen, eventually dying. An alkaline pH in the blood can also produce other fatal effects. But this doesn't appear to occur with birds, says Barbara R. Grubb, a postdoctoral investigator in the laboratory of Knut Schmidt-Nielsen at Duke.

Grubb studied blood flow to the brain in a species of duck **(Anas platyrthyacos domesticus)**, both because ducks are large enough for accurate measurement of blood flow and because they can readily tolerate altitudes of 9000 meters or more. Using a technique called xenon clearance, she injected the radioactive gas into an artery leading to the duck's brain, then monitored the rate at which the xenon moves out of brain tissues. This rate is proportional to blood flow.

During hyperventilation, Grubb observed, blood flow through the duck's brain was close to the rate observed when the animal was breathing normally. Under similar conditions, she says, brain blood flow in mammals would be 50 to 75 percent below normal and they would experience severe pain. It is clear, then, that birds have some mechanism which prevents constriction of blood vessels when carbon dioxide is expelled, and it is this mechanism which permits them, but not man, to survive at high altitudes. The nature of this mechanism is not known yet, but its existence is corroborated by other investigators, who have previously shown that birds can withstand a blood pH of 8. In mammals that pH would be fatal.

Grubb is now studying cardiac output of birds. The hearts of birds are proportionately larger than those of other animals, and physiologists have assumed, but have never proved, that they can pump blood at a higher rate. A faster blood flow would enable more oxygen to reach tissues, even if the concentration in the air inhaled by the bird is low. This might be another part of the mechanisms by which birds survive at high altitudes. Daedalus and Icarus, it is now becoming clear, just didn't have what it takes to be high-flyers.

Thomas H. Maugh II

(Reprinted from: Science, March 23, 1979, Volume 203-1230)

Letters to the Editor

Dear Sir:

Starting about June 5th, 1980 I was losing a sparrow a day by violent death in the area around my birdfeeders. On June 10th, about 7 a.m. and a beautiful day, upon going to routinely fill the feeders, I discovered (nine) 9 dead sparrows scattered around the feeder in the backyard, anywhere from 2 to 30 feet around it, but 6 of the birds were within a 7 ft. radius of the feeder. I cleaned up the debris and wondered how such a thing could have happened - who was responsible, bird i.e. a hawk, a cat or some other animal?

I called Bernie Brouchoud at Woodland Dunes and discussed it with him. We eliminated quite a few possibilities both bird and animal and decided I'd better watch a bit more closely. I'd mentally settled on an early morning prowling cat and got busy with other things. At 11 a.m. a check of feeder areas said all was well. At 1 p.m. I looked out and saw some more dead birds, as I watched, a grackle walked over and proceeded to gut one of the birds. I didn't see the bird(s) killed so I still wasn't sure who or what caused their deaths. I then went out and found there were actually four more dead sparrows, I removed them. Decided now was the time to sit down, wait and watch. At 2:35 p.m. I saw a grackle attack, kill and start to gut another sparrow on the ground. I checked the front yard feeder next (I'd been watching at the back) and found two more dead sparrows.

That meant 16 sparrows had been killed between dawn and 3 p.m. the same day.

The next morning two dead sparrows were found near the front feeder -none at the back feeder - same violent death. Not as many as yesterday, but then the day isn't over, it's only 7 a.m. and I'm running out of sparrows.

We've been calling grackles "yellow eyed devils" because of their messy feeding habits and habit of chasing even the larger birds such as turtle doves away from the feeders, but now I have more reason and feeling that we named them aptly.

When you stop to think if one or more birds could wreck this havoc on a smaller species and possibly eliminate it in time, who will they pick on next -blue birds, purple finches? Looks like small ground feeding birds are in trouble, at least they are in my yard.

Renee Evans (Mrs. David)
1119 N. 12th
Manitowoc, WI 54220

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