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THE *PASSENGER PIGEON*
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Send all manuscripts and related correspondence to the Editors. Information for "Seasonal Field Notes" should be sent to the Bird Reports Coordinator (see inside back cover). Art work and questions about the art should be sent to the Associate Editor for art (see left column). Manuscripts that deal with Wisconsin birds, ornithological topics of interest to WSO members, and WSO activities are considered for publication. For detailed submission guidelines, see pages 3–5 of the Spring 2000 issue (Vol. 62, No. 1) or contact the Editors. As a general guide to style, use issues after Vol. 60, No. 1, 1998.

Front Cover: Snowy Owl by Gary Krogman.

WSO's Annual Convention

Over the years, I have enjoyed every one of the WSO's annual conventions and I look forward to this year's in Sheboygan. Each one has been, for the most part, very well attended and organized. My hat goes off to those local clubs/organizations or those enthusiastic groups of individuals that have taken on the task of hosting one or more of these conventions. I've been involved with a couple of them, so I know that it is a major undertaking for a local club to pull it off.

Back a couple of issues ago, in my first President's Statement, I wrote that I was interested in creating a committee to coordinate the planning of WSO's annual conventions. The reason I felt that WSO would benefit from such a committee is not so much that past conventions have not been run well; on the contrary they have been organized very well by those involved. We've had conventions in locations all over the state, but it seems that we have not broadened our scope enough to include some of those out-of-the-way locations. The reason for this is obvious, because WSO relies on local organizations to host its convention and only those places that have strong "organized" groups typically volunteer to host our annual convention.

Therein lies the point of my proposal for having a standing WSO Annual Convention Committee. This committee would take on the task of organizing our annual convention with the assistance of the host site clubs, organizations or individuals. At a recent WSO board meeting, the idea of having an annual convention committee was discussed and we felt that it would be a worthy addition to our organization. It also was agreed that it is imperative for individuals or groups in these local host areas to be directly involved as well.

Organizing our annual convention is quite a task and one that is undertaken by "new' individuals nearly every year. Fortunately, some of the seasoned organizers from past conventions have given assistance to the new hosts. But the idea of a permanent annual convention committee, staffed by the same individuals for an extended period of time, will alleviate the burden of having to "learn that process" every year.

The annual convention committee would consist of 4–5 individuals who would have to commit to a 2–4 year term. Initially, we'd be looking for people that may already know the logistics of planning a WSO convention, but would accept those willing to master one of the positions. The committee would include at least the following positions; *chair person, publicity chair, treasurer, registrar, program coordinator, physical facilities coordinator, field trips coordinator* and *pre-convention field trip coordinator.* Members could assume 1–2 positions depending upon the necessary tasks of the position and the amount of time the individual could devote. Within their term these individuals may rotate to another position

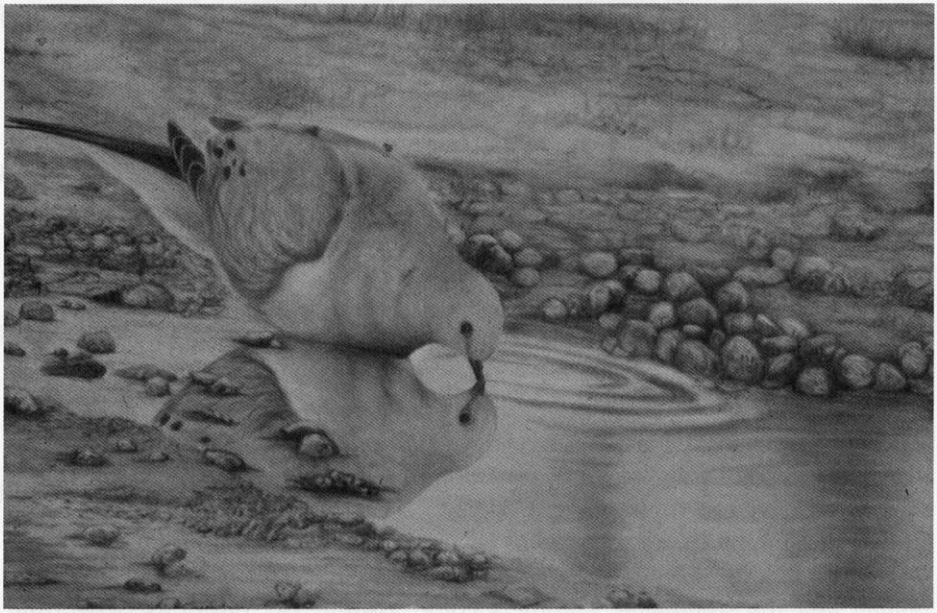
or even off the committee after some specified term. Keep in mind we're looking for consistency.

Ideally, we hope that these individuals become the "experts" at their position and would then mentor the local host volunteers in finalizing the convention onsite. Again, it is imperative that people from the local host site be involved in the whole process, to give local flavor and help with the logistics of the region.

So, I invite you to become directly involved in one of WSO's premiere annual activities by volunteering for a position on its Annual Convention Committee. If you feel that you could make a positive contribution in how our convention is planned please contact one of the board members for consideration. We're anxious to hear from you.

Jeffrey L. Baughman

President



"Mourning Reflection" *by Betsy Popp*

More "Thanks"

The previous issue of *The Passenger Pigeon* (66:3) contained about half of the articles we received from our May plea for material for the journal. This issue contains the remaining articles. We think you will enjoy reading of the successful recovery of Sandhill Cranes in Wisconsin, learning where they are, and how they are doing. For those of you fascinated by the sounds birds make, be sure to read Phil Whitford's account of his research on vocalizations of Canada Geese. Another article focuses on one county, Milwaukee, providing an in-depth view of the birds found there from the mid-1800 to the present, including a list of the species and current management activities for wildlife. After reading this article, if any of you wish to produce a similar treatment for your home county, we'd love to see it. And finally, WSO members will see how their Scholarships and Grants Fund was used as you read about Wisconsin's fossil birds, predation on loon nests, and a "new" hawk-watching hotspot in three articles from scholarship recipients.

With this issue, the "hatching year" for these two editors comes to a close—it's been twelve months and six issues since Neil and I took on the task of producing this journal. And I must say, that after the first few months when we were playing catch-up to get the journal back on schedule, it's been more fun than work. But in case any of you are under the impression that Neil and I do all this by ourselves, we want to take this opportunity to say a huge THANK YOU to everyone who plays some part in providing you with this publication.

If you read the inside front cover, you will find the names of six individuals who have major roles in creating *The Pigeon*. Wayne Rohde and the four field note compilers, Karl David (Spring), Thomas Soulen (Summer), Mark Peterson (Fall), and Kenneth Lange (Winter) are the ones responsible for what you read each time in the seasonal reports and "By the Wayside"—a large portion of every issue. And a special thanks goes to Karl David for cheerfully agreeing to cover the Summer season this time around while Tom Soulen recovers his good health.

You also will find David Kuecherer, Art Editor, listed on the inside front cover. Dave takes a major task off the editors by actively seeking original art and fantastic photographs of birds to make the journal a much more enjoyable publication. And thank you to all the generous artists and photographers who share their work so freely with WSO. A special thanks goes to Jack Bartholmai and Dennis Malueg who always respond so quickly to last-minute requests for additional slides.

Another thanks goes to Jim Frank, WSO Records Committee Chair. He not only gets the Records Committee Report written and to us on time for each issue, but he writes the May Count, and Migration Count articles each year. Wayne Rohde writes the Big Day Report each year, and Bob Domagalski puts together that huge Christmas Bird Count article annually—another thanks to them.

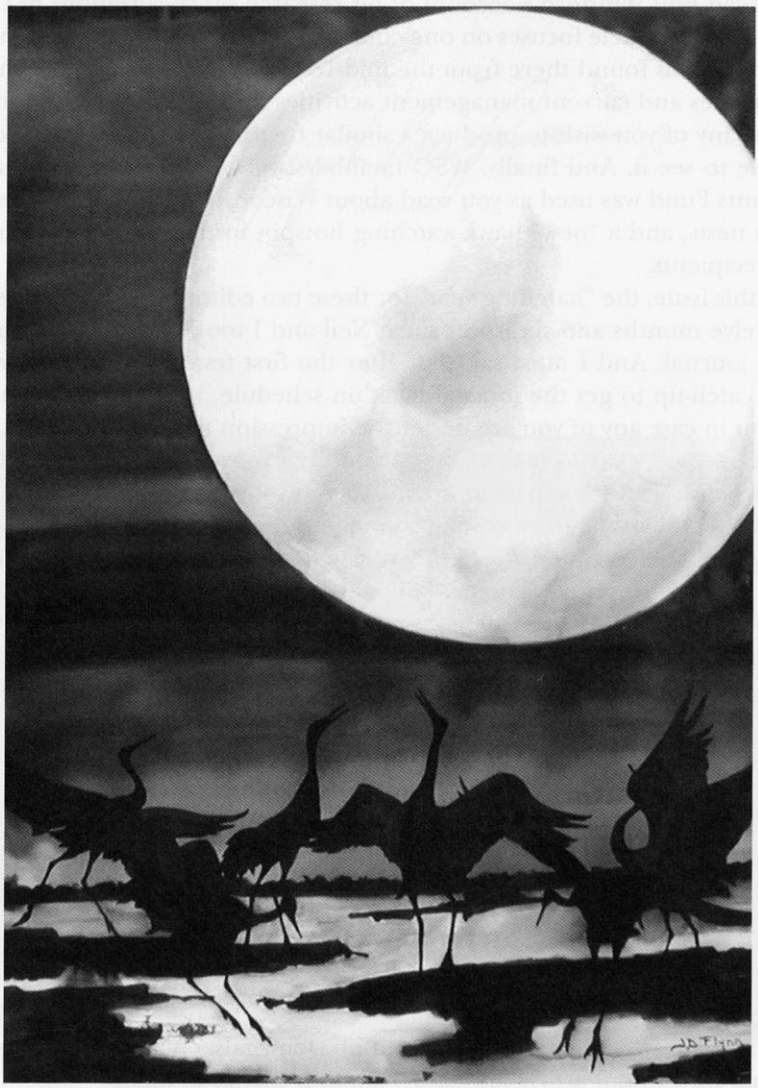
There are two people you do not see credited with helping get this journal to

you: Jesse Peterson, WSO Membership Chair, who maintains the mailing list and sends the most up-to-date listing to Allen Press before each printing; and Christine Reel, WSO Treasurer, who pays all the bills resulting from this effort in a timely fashion, also deserve a huge thanks.

And finally, to all the persons who submit manuscripts, art, and reports of bird observations—the contents come from you, without which there would be no journal.

These most grateful editors thank you one and all.

Bettie and Neil Harriman, Editors



Crane Moon *by Janet Flynn*

Changes in Population and Distribution for Greater Sandhill Cranes in Wisconsin

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ABSTRACT

We used spatial statistics to analyze 22 years of Wisconsin Crane Count data, illustrating the changes in distribution and the process of expansion of Sandhill Cranes during their population recovery in Wisconsin. In the early 1980s, the cranes were highly concentrated in central Wisconsin. While numbers of cranes gradually expanded in south-central and west-central parts of the state, eight central counties now still support over 60% of the population.

INTRODUCTION

The eastern population of Greater Sandhill Cranes (*Grus canadensis tabida*) has varied greatly in Wisconsin over the past 150 years (Henika 1936; Hunt and Gluesing 1976; Harris and Knoop 1987; Dietzman and Swengel 1994). Understanding distribution, population dynamics, and habitat use patterns for these cranes is important for management of Wisconsin's present large flock, and particularly for avoidance of conflicts between people and cranes.

In the Midwest, Sandhill Cranes were abundant at the time of European settlement, especially in regions where wetlands and upland grasslands intermixed extensively (Hunt and Gluesing 1976). This population experienced great declines due mostly to hunting. The species was uncommon by the 1880s and by the 1930s, Henika (1936) estimated that only 25 pairs remained in the state. Of these, 20 pairs lived in large wetlands in the central counties (Henika 1936, Walkinshaw 1949).

Conservation efforts—hunting prohibition and wetland protection—helped Sandhill Cranes to recover. Development of large waterfowl management areas in the 1940s and 1950s, as well as the maintenance of existing shallow emergent wetlands greatly benefited cranes. By 1967, cranes were reported reproducing in 16 counties, mostly on public wildlife areas. Since then, the crane popula-

tion has steadily grown (Harris and Knoop 1987; Windsor 1990; Dietzman and Swengel 1994).

Complaints about crane damage to crops in Wisconsin have increased since the 1990s as crane numbers have grown (Sauer et al. 2004). Wildlife managers have been challenged to reduce or eliminate conflicts between the growing crane population and farmers. Some state lawmakers are advocating a public hunting season on cranes, a suggestion that has caused heated public debate (Barrett 1997; Behm 1996). Assessment of human-crane conflicts requires a better understanding of changes in crane distribution.

In this paper we use two decades of state-wide data, collected through the Annual Wisconsin Crane Count, to describe population changes at broad spatial and temporal scales.

Methods

Annual Wisconsin Crane Count

This count has been organized by the International Crane Foundation (ICF) since 1980. Each April, volunteers search wetlands across the state during one morning to count Sandhill Cranes and estimate the number of breeding pairs. In the past 22 years (1982–2003), data were collected by a systematic method and covered most of the state.

A survey site is usually about a square mile in size, in or near a wetland. Observers record total number of cranes at their sites and the number of breeding birds indicated by observation of isolated pairs or of pairs seen or heard unison calling (Archibald 1975, 1976). In the present study, data were analyzed on a countywide basis.

Because the Crane Count is a volunteer activity, where over 2,000 people assist with collecting data each year on the mid- to late-April morning of the count, some sampling biases exist in these data. Survey sites were not evenly distributed across the state (volunteers tended to count much more often in locations known to have cranes), not all sites were surveyed every year, observer skills varied greatly, and diverse weather conditions influenced detection of cranes. For example, in years where rain, high winds, or fog were widespread, volunteers found fewer cranes. These biases in our data, however, were small in comparison to the measurements we used to detect changes at the broad geographic (statewide) and temporal (22 years) scales of this study.

Spatial Statistical Analysis

We used *Splus—spatial module* to perform visualizing analysis (Kaluzny et al. 1996). County level crane data were treated as *lattice* data. Using latitude and longitude for county seats as *x*- and *y*-coordinates, we used the *interp* function to generate contour maps (at intervals of 100 cranes) of the Wisconsin crane distribution for the period 1982–2003 to explore spatial trends in the crane population. The *interp* function interpolates crane values on an equally spaced grid of Wisconsin (according to *x*- and *y*-coordinates of the county seats).

Results

Over 22 years of the count, more than 89% of Wisconsin's counties were surveyed on average. In the last eleven

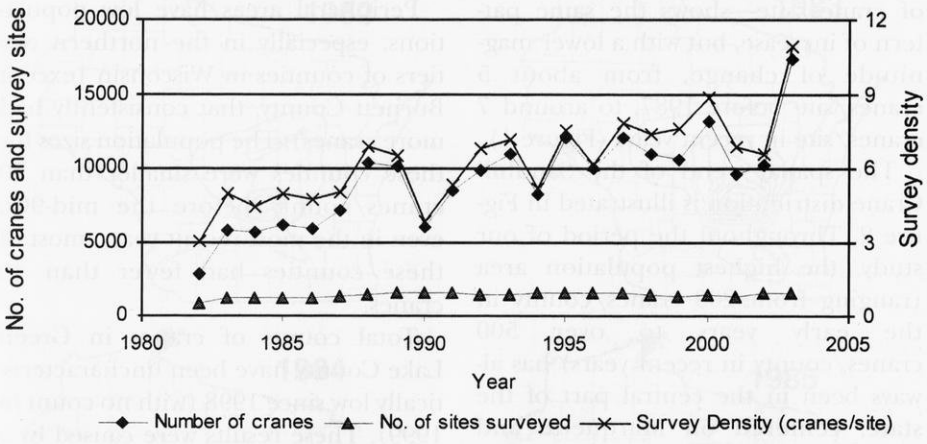


Figure 1. Changes in population and density of Sandhill Cranes in Wisconsin 1982–2003

years, the average number of counties covered exceeded 96% (Table 1).

Though some aberrant years occur (e.g., 1990 and 2003) the population growth was steady throughout the study period. In total, the population of Greater Sandhill Cranes has more than tripled even though the Count has had a relatively constant number of survey sites during the same period (Figure 1 and Table 1). The statewide average survey site density—number

Table 1.

Year	Number of Counties Counted	Number of Sites Surveyed	Total Number of Cranes	Total Number of Pairs	Survey Density (Cranes / sites)
1982	45	915	2,798	843	3.06
1983	55	1,178	5,818	1,686	4.94
1984	59	1,284	5,740	1,791	4.47
1985	64	1,250	6,223	1,768	4.98
1986	63	1,254	5,964	1,237	4.76
1987	65	1,418	7,188	2,122	5.07
1988	60	1,503	10,382	2,574	6.91
1989	56	1,547	10,113	2,588	6.54
1990	60	1,557	6,033	2,106	3.87
1991	60	1,602	8,485	2,193	5.30
1992	61	1,463	9,197	2,477	6.78
1993	70	1,535	11,036	2,641	7.19
1994	64	1,577	8,216	1,513	5.21
1995	69	1,607	12,120	2,883	7.54
1996	70	1,633	10,020	2,202	6.14
1997	70	1,550	12,128	2,931	7.82
1998	72	1,486	10,956	2,317	7.37
1999	69	1,390	10,618	2,206	7.64
2000	71	1,478	13,187	2,130	8.92
2001	72	1,409	9,669	2,139	6.86
2002	71	1,562	10,269	3,088	6.57
2003	69	1,588	17,449	2,736	10.99

of cranes/site—shows the same pattern of increase, but with a lower magnitude of change, from about 5 cranes/site before 1987, to around 7 cranes/site in recent years (Figure 1).

The spatial trend of the Sandhill Crane distribution is illustrated in Figure 2. Throughout the period of our study, the highest population area (ranging from>200 cranes/county in the early years to over 500 cranes/county in recent years) has always been in the central part of the state, centered on Marquette and Green Lake Counties. After the first decade, this core area expanded slightly to the north and to the south, to include Marquette, Green Lake, Waushara, Columbia, Jefferson, Winnebago, Dane, and Dodge Counties. Little change in the core area has occurred since then, but the size of the population has still grown dramatically. In the early 1980s, there were only two counties with populations larger than 500 cranes. But by the mid 1990s, four counties had more than 800 cranes, and by the early 2000s, four counties had more than 1,000 cranes. Collectively, over 60% of Wisconsin's crane population still occurs in eight core area counties. At the same time, the number of counties with more than 200 cranes has mostly fluctuated between 10 and 15 (Figure 3).

Changes in the mid-sized population zone (>100 cranes/county) have had two phases. Before 1995, there was very little change, with slow expansion in the south-central counties of Dane, Jefferson, Rock, and Walworth. Since 1995, the zone has had a relatively large expansion to the west including Taylor, Chippewa, Eau Claire, and Trempealeau Counties.

Peripheral areas have low populations, especially in the northern two tiers of counties in Wisconsin (except Burnett County, that consistently had more cranes). The population sizes for these counties were smaller than 20 cranes/county before the mid-90s; even in the most recent years, most of these counties had fewer than 40 cranes.

Total counts of cranes in Green Lake County have been uncharacteristically low since 1998 (with no count in 1999). These results were caused by a decline in survey effort. Until 1998, over 50 sites were surveyed every year. The Green Lake County Coordinator resigned in 1999, and new coordinators have only organized surveys for 18, 19, 23 and 29 sites in 2000–2003. Considering the history of the Sandhill Crane population and the availability of habitat in Green Lake County, the population size for Green Lake is likely similar to each of its neighboring counties: Waushara, Winnebago, Marquette, and Columbia Counties. We did not use estimated numbers to generate distribution maps; therefore, these low count results skewed the shape of the core area of crane distribution in our maps.

Discussion

Even though the overall trend in population growth is clear, annual variability of count results is largely due to survey biases. Years with exceptionally low populations, in contrast to previous or subsequent years (e.g.,1990), reflect inclement weather on crane count day. In 1990 for example, fog blanketed much of the state and non-vocalizing cranes were

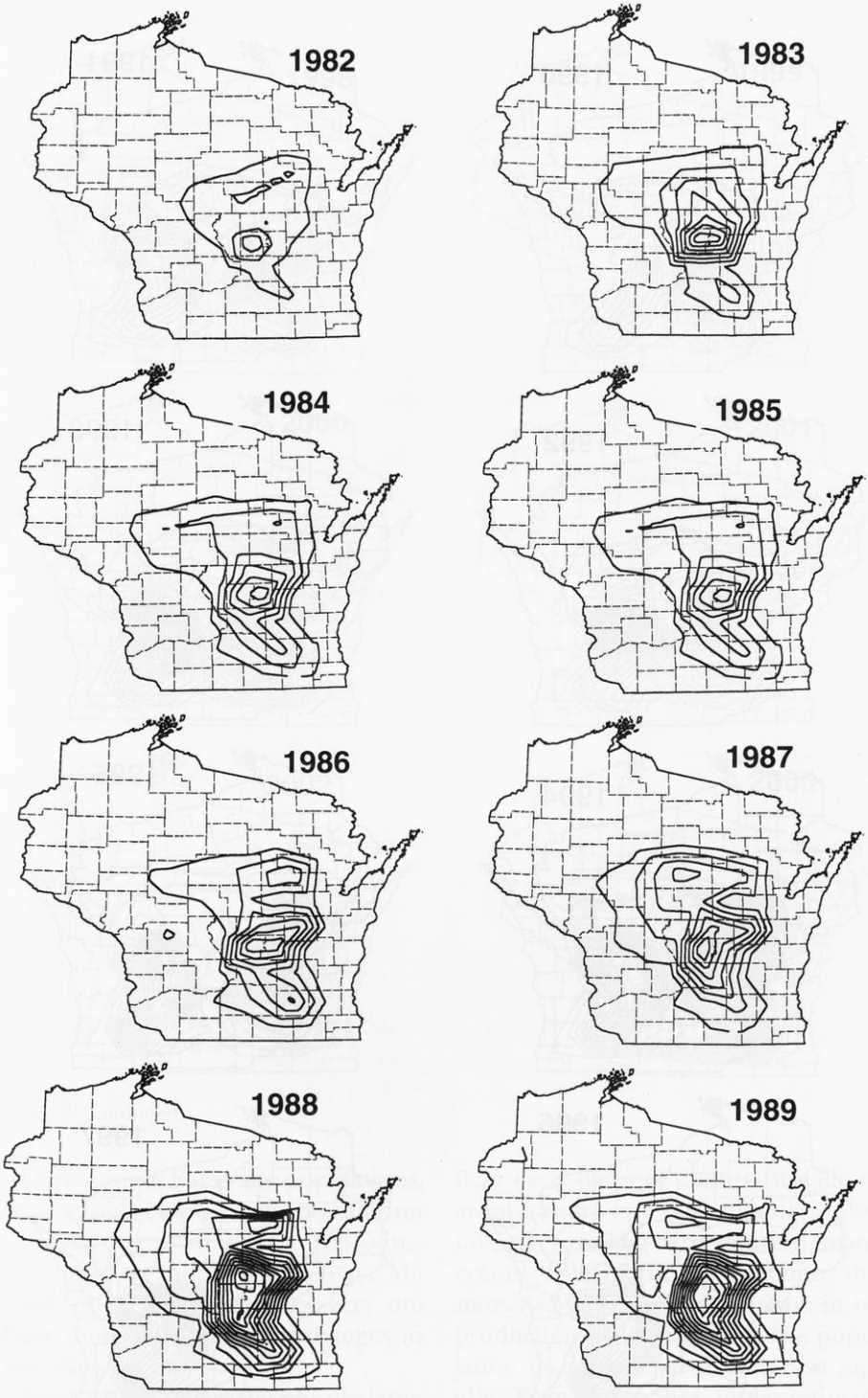
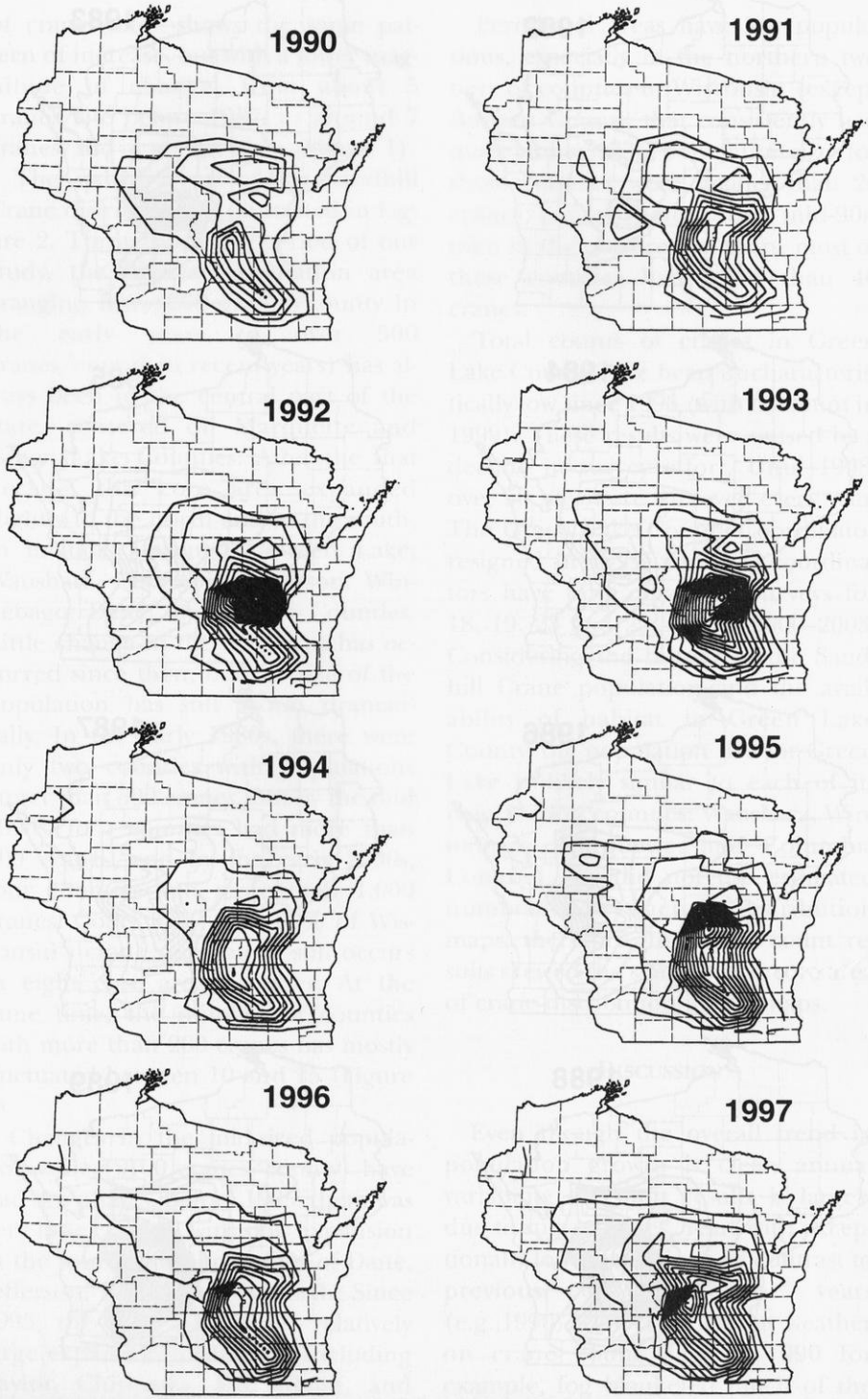


Figure 2. Annual spatial distribution maps of Sandhill Cranes in Wisconsin. Solid contour lines indicate numbers of cranes at 100-bird intervals (beginning from the outmost ring, crane numbers are 100, 200, etc.).



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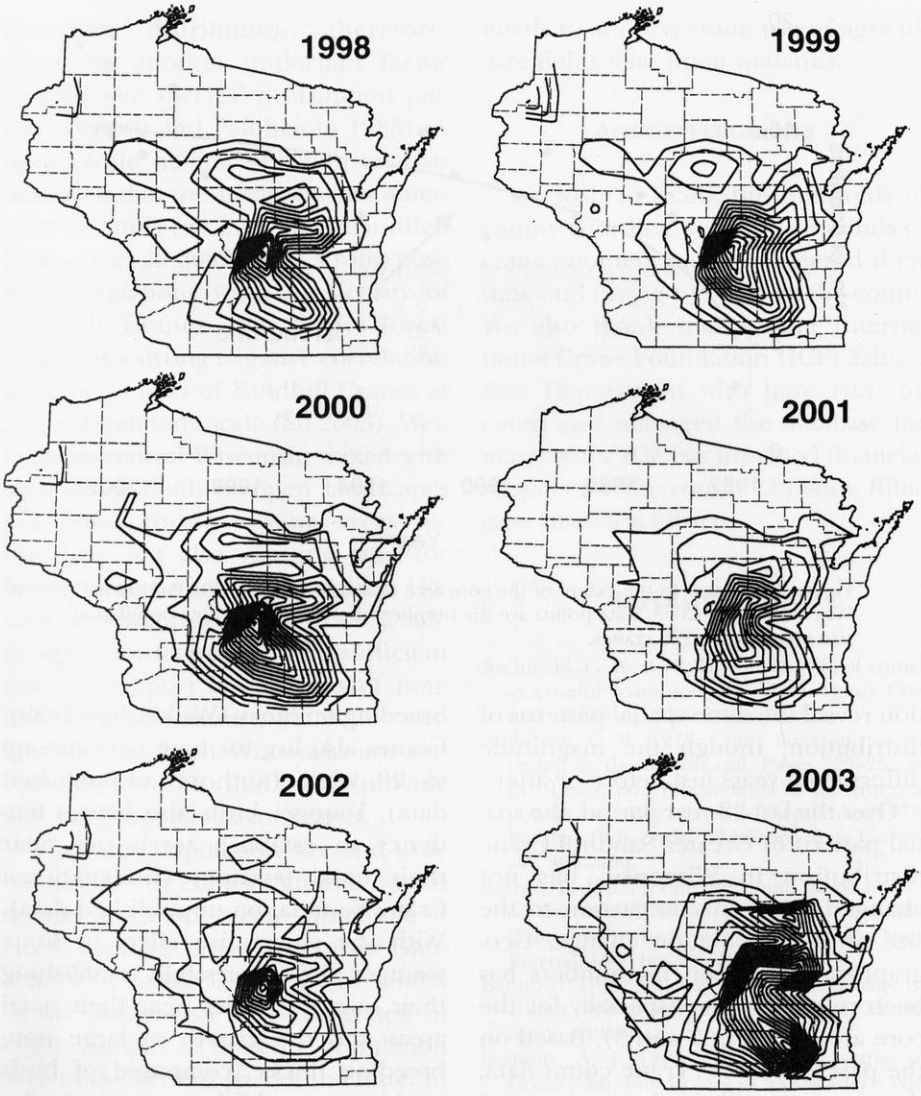

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undercounted. For crane populations, such rapid changes in population numbers due to changes in reproduction rates are not possible (e.g., Miranda et al. 1991) and are very unlikely to be due to abrupt changes in mortality.

Years with uncharacteristically large crane numbers (e.g., 2003) likely reflect early dates of counts (usually to avoid Easter) or a late migration phenology, resulting in counting many cranes still migrating through the state. As above, annual variation in reproduction could not cause the population to increase or decrease so rapidly. Even years that under-estimate and over-estimate the crane popula-

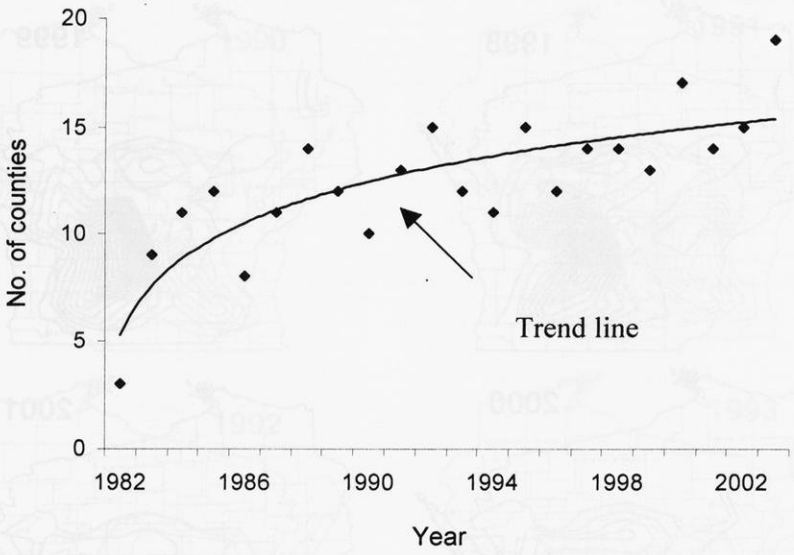

Figure 3. Changes in the extent of the core area of Sandhill Crane distribution in Wisconsin 1982–2003. Data points are the numbers of counties having a population size greater than 200 cranes.

tion reveal the same spatial patterns of distribution, though the magnitude differs from years just before or after.

Over the last 22-year period, the spatial pattern of Greater Sandhill Crane distribution in Wisconsin has not changed much in comparison to the size of the population change. Geographical expansion in numbers has been relatively slow, especially for the core area (Figures 2 and 3). Based on the past 20 years of crane count data, the core area will continue to expand very slowly in the future and probably will bounce around 15 counties for the next 10 years (trend line in Figure 3).

The highly centralized distribution of Greater Sandhill Cranes in Wisconsin could be caused by biological characteristics of cranes or by habitat features in the state, and is likely a function of both. Adult Sandhill Cranes have strong site fidelity, usually returning to their previous year's breeding territory (Walkinshaw 1989). Cranes also live for long periods—up to 20 years (authors' unpublished data). Younger birds also have a tendency to establish territories near their natal territory (International Crane Foundation unpublished data). With the cumulative effect of some younger birds successfully establishing their own territories near their natal areas and the growth of large nonbreeding flocks (composed of birds unable to establish territories), the population size has increased steadily in those areas where crane populations persisted in the mid 1900s (Gluesing 1974, Howard 1977, Bennett 1978).

Some marked crane chicks, however, disperse from natal areas before establishing territories (International Crane Foundation unpublished data) and may be seeking breeding opportunities in available habitat elsewhere.

Resource distribution, therefore, could be another important factor shaping the species' distribution pattern (Fahrig and Paloheimo 1988). A broad scale habitat selection analysis indicated that wet meadows and emergent wetlands (defined and quantified by Reese et al. 2002) have strong positive correlations with the density of Sandhill Cranes (Su 2003); forest cover has a strong negative correlation with the density of Sandhill Cranes at a broad statewide scale (Su 2003). Wetlands in central Wisconsin mixed with agriculture fields in open landscapes not only provide nesting areas for breeders, but also roosting sites for breeders and non-breeders alike. Upland agriculture fields provide a safe foraging environment with sufficient food to support large flocks of non-breeders. In contrast, abundant wetlands in northern Wisconsin are surrounded by forests that do not provide safe foraging habitat for cranes.

The large population size and wide distribution of cranes statewide would appear likely to create human and crane conflicts across Wisconsin (Barrett 1997; Behm 1996). Yet over 60% of the population is concentrated in eight counties of the core population area in the central part of the state. In these areas there are both high crane densities (this study) and extensive agricultural lands (Reese et al. 2002), creating a high probability of crop damage by cranes. The majority of counties in the state still have low numbers of cranes. Crane management strategies need to focus on the counties in the core area, based on knowledge of habitat use preferences of the cranes at different spatial scales (Su 2003). In particular, management needs to address crane use of agriculture fields near open wetlands.

Acknowledgments

We wish to thank the hundreds of county coordinators and thousands of crane counters who volunteered their time and caring to conduct the count. We also thank staff of the International Crane Foundation (ICF) Education Department who have run the count and managed the database for many years. ICF has provided financial support for the count. Christine Ribic gave statistical advice.

Literature Cited

Archibald, G. W. 1975. The unison call of cranes as a useful taxonomic tool. Ph.D. Thesis, Cornell University. Ithaca, New York.

Archibald, G. W. 1976. Crane taxonomy as revealed by the unison call. Pages 225–252 *in* J.C. Lewis, ed., Proceedings of the International Crane Workshop, 3–6 September 1973, Baraboo, Wisconsin. Oklahoma State University. Stillwater.

Barrett, R. 1997. If only the crane stayed mainly on the plain. When they stray into cornfields, farmers suffer heavy damage. Wisconsin State Journal, 15 February 1997, page 8.

Behm, D. 1996. State might pay for damage by cranes. Milwaukee Journal Sentinel, 15 December 1996.

Bennett, A. J. 1978. Ecology and status of Greater Sandhill Cranes in southeastern Wisconsin. M.S. Thesis, University of Wisconsin-Stevens Point. 110 pp.

Dietzman, G., and S. Swengel. 1994. 20 years of counting cranes: what have we learned? ICF Bugle 20(1): 2–3.

Fahrig, L., and J. Paloheimo. 1988. Effect of spatial arrangement of habitat patches on local population size. Ecology 69(2): 468–475.

Gluesing, E. A. 1974. Distribution and status of the greater sandhill crane in Wisconsin. M.S. Thesis, University of Wisconsin-Stevens Point. 84 pp.

Harris, J., and J. Knoop. 1987. The Wisconsin Sandhill Crane count: a public participation project. Pages 17–26 *in* J.C. Lewis, ed., Proceedings 1985 Crane Workshop. Platte River

Whooping Crane Habitat Maintenance Trust. Grand Island, Nebraska.

Henika, F. S. 1936. Sandhill Cranes in Wisconsin and other lake states. Proceedings North American Wildlife Conference 1: 644–646.

Howard, T. J. 1977. Ecology of the Greater Sandhill Crane in central Wisconsin. Pages 39–43 *in* R. D. Feldt, compiler, Eastern Greater Sandhill Crane symposium. Wildlife Society (Indiana Chapter), Indiana Conservation Council, and Division of Fish and Wildlife, State of Indiana.

Hunt, R. R., and E. A. Gluesing. 1976. The Sandhill Crane in Wisconsin. Pages 19–34 *in* J. C. Lewis, ed., Proceedings International Crane Workshop. Oklahoma State University. Stillwater.

Kaluzny, S. P., S. C. Vega, T. P. Cardoso, and A. A. Shelly. 1996. S+Spatialstats user's manual, version 1.0. MathSoft. Seattle.

Mirande, C., R. C. Lacy, and U. Seal. 1991. Whooping Crane (*Grus americana*) conservation viability assessment workshop. IUCN/SSC Captive Breeding Specialist Group. Apple Valley, Minnesota.

Reese H. M., T. M. Lillesand, D. E. Nagel, J. S. Stewart, R. A. Goldmann, T. E. Simmons, J. W. Chipman, and P. A. Tessar. 2002. Statewide land cover derived from multiseasonal Landsat TM data—A retrospective of the WISCLAND project. Remote Sensing of Environment 82 (2–3): 224-237.

Sauer, J. R., J. E. Hines, and J. Fallon. 2004. The North American Breeding Bird Survey, results and analysis 1966–2003. Version 2004.1. USGS Patuxent Wildlife Research Center. Laurel, Maryland.

Su, L. 2003. Habitat selection by Sandhill Cranes, *Grus canadensis tabida*, at multiple geographic scales in Wisconsin. Ph.D. Thesis, University of Wisconsin-Madison. 141pp.

Walkinshaw, L. H. 1949. The Sandhill Cranes. Cranbrook Institute of Science Bulletin 29. Bloomfield Hills, Michigan. 202 pp.

Walkinshaw, L. H. 1989. The Greater Sandhill Crane in Michigan: An update of nest data with observations on site fidelity. The Jack-Pine Warbler 67(1): 3–17.

Windsor, W. V. 1990. Status of the Sandhill Crane in Wisconsin: results of annual crane counts, 1983–1990. The Passenger Pigeon 52(4): 300–305.

Su Liying grew up in northeastern China, and studied cranes for seven years while on the staff of Zhalong Nature Reserve, China. She studied Sandhill Cranes in Wisconsin for her Ph.D. dissertation at the University of Wisconsin-Madison.

Jim Harris is president of the International Crane Foundation (ICF), where he has worked since 1984. Previously, he did freelance writing and research, often about wildlife and wild places in Wisconsin.

Jeb Barzen is Director of Field Ecology at the International Crane Foundation (ICF). He has guided ICF's Sandhill Crane research for the past 15 years.

Early Development and Function of Juvenile Calls in Giant Canada Geese (*Branta canadensis maxima*)

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Abstract

An in-depth examination of vocal ontogeny of giant Canada Goose goslings opportunistically imprinted on the author provided the first major insight into the rate of frequency decrease in calls used, and syllabic form and number of various call forms used by any subspecies of Canada Goose from hatch until 26 days of age. Calls were compared with sonograms and descriptions from extensive detailed work on Anser *species goslings conducted in the 1960s in Germany. The number of calls observed, form of the calls, and nature of use was found to be extremely consistent and conservative between the genera. Changes in frequency and duration of calls with age appeared to follow the same patterns of increasing body and trachea size/air volume capacity as that of* Anser *species, such that maximum frequencies declined as duration increased as a product of increasing body size and age.*

The juvenile calls and behavior of goslings have received moderate study. Würdinger (1970) explored mechanisms of call production and vocal ontogeny from hatch to 100 days in four species of goslings: Bar-headed Goose (*Anser indicus*); White-fronted Goose (*A. albifrons*); Snow Goose (*A. caerulescens*); and Canada Goose of the Atlantic subspecies, *Branta canadensis*. Goslings of the Greylag Goose (*A. anser*), were studied in depth for ontogeny of vocalizations and behavior (Fischer 1965). These studies effectively elevated goose vocalization research from phonetic description to quantitative sonographic analysis.

From her work, Würdinger (1970) concluded that gosling calls were conservative among related species, yet, syllable and interval duration were characteristic for each species studied. Form, number of syllables and frequency modulation of calls differed between species. Canada geese were incidental to Würdinger's study of *Anser* species. She sporadically classified calls of a single gosling of the Atlantic subspecies of Canada Goose (*B. c. canadensis*), and found the frequency (pitch) of each call decreased

with maturation and increase of body size. She reported only average frequency ranges of calls over 100 days for Canada Goose goslings based on that data. Specific rate of frequency decrease and change in form of call of Canada Goose goslings were not addressed. To date, no studies or sonograms exist in the literature for gosling calls of *B. c. maxima*, though they have been done for adult calls (Whitford 1987, 1998). This study provides quantitative data detailing call form, duration, and frequency changes of gosling calls of this subspecies. Together with associated behavioral information, it details changes in call use during the first four weeks of life.

Methods

Adults proved too defensive to permit recording of gosling calls under natural family conditions. Therefore, I obtained the last pipping eggs from a wild-caught study flock of giant Canada geese used for my adult vocalization research (Whitford 1987). The goslings, once hatched, were imprinted on my late wife and me. They directed their calls to us and followed us everywhere, never confined or out of sight, for four weeks. Prior studies found that the manner of raising goslings altered the number and type of calls observed (Würdinger 1970; Lamprecht 1977b), but not call form. Würdinger (1970) found no qualitative differences between calls of hand-raised isolates and those of family-raised goslings. Thus, calls observed in this study should represent the form, duration, and interval typical for the subspecies.

Calls were recorded at a distance of <1 m from the goslings with a Uher Report 4200 stereo tape recorder (tape speed 9.6 cm/ sec) equipped with an Electrovoice model 644 directional microphone. Analysis used a Kay 6061B sonograph (150 Hz filter, 80-8000 Hz setting). Sonograms were sorted visually and grouped by shape and duration (Beer 1970). These sonograms were then compared to those of *B. c. canadensis* (Würdinger 1970) and various *Anser* species published by Fischer (1965) and Würdinger (1970) to identify similar calls. Call characteristics were measured using a grid overlay, consisting of a thermofax transparency of a gridded Kay Elemetrics sonograph paper (type B/85). Superimposed on sonograms, this system permitted estimation of syllable and/or call duration to .01 sec and frequency to +/- 10 hz.

Parameters recorded for all calls included: 1) syllables per call, 2) overall duration, 3) duration of each syllable, 4) interval between syllables and/or calls, and 5) frequency. I follow Würdinger's (1970) call terminology and refer to modulations within trilled calls as syllables, unlike terminology used in song analysis. I recorded initial peak frequencies and maximum frequency for trilled calls to provide information about frequency rise and fall within call series.

Call change with age was assessed by comparing frequencies, syllables, intervals and durations of calls at each age of recording. Maximum frequencies of calls varied within bouts and were recorded as frequency ranges. Change in range over time permitted assessment of frequency decrease with maturation.

Results

I recorded and sonographed 360 calls of giant Canada Goose goslings. Six calls; the Trill, Contact, Greeting, Lamentation Call, Whistle of Desertion and a Sleep Call, as defined by Fischer (1965) and Würdinger (1970), were identified for *B. c. maxima.* Calls were identifiable via similar syllable form and number within Canada Goose subspecies, and, with greater difficulty, between genera. Syllable number/call at each age and information about syllable and interval duration are presented in Table 1.

Trills (Fig. 1A–C) were 3–10 syllables of successively rising frequency, each 0.07 sec in duration, without intervals between them. Syllable number increased as age increased. Observed ranges increased from 3–6 to 5–10 syllables/call for days 1 and 16, respectively. This resulted in longer Trill duration with increased age. Trills were last recorded on day 16. Base and peak frequencies rose 200-300 Hz with each successive syllable on day 1, but only 25–50 Hz on day 16. Maximum frequency declined from 3.8 kHz on day 1 to 2.4 kHz by day 16.

Trills were the final call in 18% of exchanges recorded on day one, 44% on day 10, and 60% on day 16. They were followed by Contact or Greeting calls when not last in a series. Trills were given while standing, with the neck held vertically if the gosling was stationary, but held nearly horizontal if approaching another gosling. The Trill calls' circumstances of use and probable meaning appear to be very similar to that of the Greeting Calls which develop about day 10. Like postures are used for both calls and both are used principally at the end of call series.

I recorded the Sleep Call (Fig. 1D) only on the day of hatching. Like the Trill, its syllables were each 0.07 sec in duration. Successive syllables rose rapidly (from 1.8–5.0 kHz in 0.4 sec) and produced a much steeper slope than that of Trills.

Greeting and Triumph Call terms are used synonymously for goslings, though not for adults. Greeting Calls (Triumph Calls, Fischer 1965; Radesater 1974) were comprised of a rising series of 4–7, chevron-shaped syllables separated by intervals 0.03–0.07 sec in duration (Figs. 2D–E). Maximum frequency of the first 4–5 successive syllables rose 100–200 Hz each above the previous syllable. Phonetically, I described it as "whee- whee- whee- whee-whee," usually given by two or more individuals simultaneously. It was also described as "wheeoo-wheeoo" (Collias and Jahn 1959) and "wee-wee-wee-ung" (Klopman 1961).

Greeting Calls were first observed on day 10. The call exhibited a variable (0.10–0.12 sec) syllable duration. Form and frequency differed between male and female goslings. At day 10 the female's Greeting Call began 300-500 Hz above, and ended as much as 1.0 kHz higher than, the male's calls. Frequency ranges of the Greeting were 2.0–2.6, 1.5–2.5, and 1.3–2.1 kHz for the male and 2.3–3.6, 1.8–3.1, and 1.6–2.5 kHz for the female for days 10, 16, and 24, respectively. The female's syllables were more pointed, higher, and narrower than the male's. Each Greeting syllable ended 1–2 kHz below its initial frequency. Initial frequencies remained largely unchanged as successive syllables rose in maximum frequency.

Table 1. Characteristics of the various calls of giant Canada goslings at 1, 10, 16, and 24 days of age. Calls are defined in terms of number of syllables per call, syllable duration, and interval between syllables. Maximum frequency range is included for each call, age, and first syllables where applicable. STD = standard deviation; that is, the average variation from the mean of the sample.

Kind of vocalization	Age in Days	N	Syllables / Call	Syllable Duration in seconds			Interval Duration in seconds			Frequency Range in Kilohertz	
				Range	$\bar{x}$	STD	Range	$\bar{x}$	STD	Max	First Syllable
Contact Calls	1	15	1–3	.03–.11	.066	.027	.06–.14	.120	.051	3.1–3.2	1.6–2.0
	10	33	2–4	.08–.13	.106	.012	.04–.08	.057	.010	1.9–2.6	1.2–1.7
	16	19	2–4	.10–.14	.122	.012	.02–.05	.036	.012	1.9–2.2	1.1–1.5
	24	15	3–4	.09–.15	.117	.015	.03–.06	.043	.009	1.4–1.6	1.0–1.4
Trills	1	17	3–6	.07–.08	.073	–	None	–	–	2.6–3.8	2.2–2.9
	10	7	4–9	.07–.07	.07	–	None	–	–	2.5–3.5	1.6–2.5
	16	5	5–10	.07–.07	.07	–	None	–	–	2.2–2.9	1.5–2.0
	24	0	NA	–	–	–	–	–	–	–	–
Greetings	1	0	–	–	–	–	–	–	–	–	–
	10	20	4–7	.10–.11	.107	.01	.06–.07	.066	.019	2.0–3.6	2.0–2.6
	16	10	4–6	.10–.12	.112	.02	.03–.04	.036	.009	1.5–3.1	1.5–2.1
	24	11	4–5	.10–.11	.107	.006	.05–.06	.052	.013	1.3–2.5	1.3–1.8
Lament Calls	1	57	1–2	.12–.18	.149	.015	.30–.50	.401	.054	3.0–4.1	
	10	0	–	–	–	–	–	–	–	–	
	16	2	1–2	.16–.20	.18	.02	–	–	–	–	
	24	7	1–2	.18–.25	.21	.025	.33–.60	.446	.090	2.0–2.1	
Whistle of Desertion	1	16	1–2	.14–.18	.156	.010	.28–.46	.360	.070	3.8–5.5	
	10	20	2	.20–.35	.303	.050	.14–.27	.190	.060	2.6–3.0	
	16	31	2	.24–.30	.287	.030	.14–.30	.237	.077	2.3–2.8	
	24	60	2	.28–.40	.312	.045	.15–.75	.294	.090	1.8–2.2	

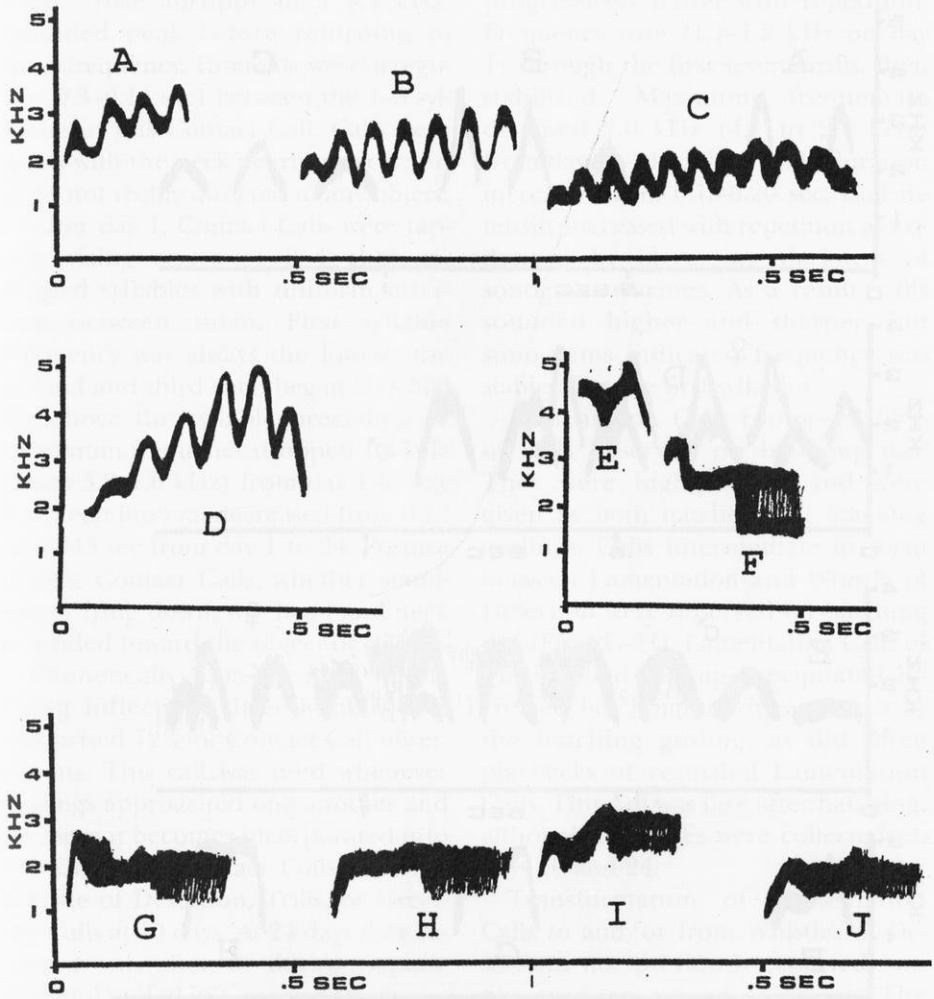

Figure 1. Trills, Sleep Call, and Whistle of Desertion of giant Canada Goose goslings. Trills at 1 (A), 10 (B), and 16 (C) days of age. The "Sleep Call" on day 1 (D). Whistle of Desertion Calls, male during hatching (E), at 10 (F), 16 (G), and 24 (H) days; female at 10 (I) and 24 (J) days. Note the increase in overall duration and decrease in frequency of both calls, and the increasing emphasis on the broad-spectrum second syllable of the Whistle of Desertion as age increases.

With increased age, number and variety of calls following Greetings decreased. By day 24, no calls were observed after Greetings, a pattern typical of adults. Greetings occurred after a disturbance, visual separation or sleeping. Posture was consistent. Birds faced one another with necks stretched nearly horizontal and heads weaving.

Contact Calls (Fig.2A–C) evidenced two forms. That observed on hatching day was of short (0.05 sec) syllable duration. Each syllable, phonetically

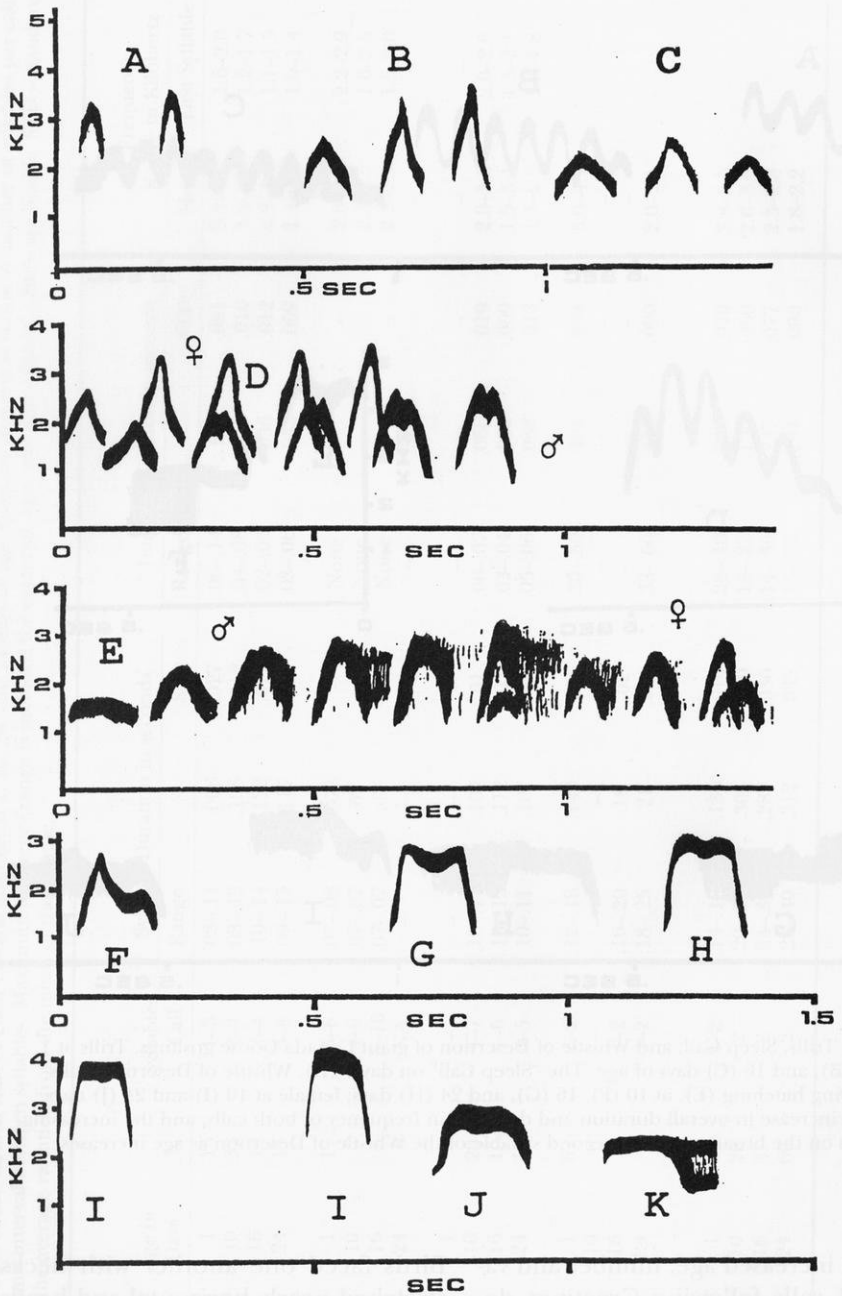

Figure 2. Contact, Greeting and Lamentation Calls of giant Canada Goose goslings. Contact Calls at 1 (A) , 10 (B),and 16 (C) days. Greeting Calls at 11 days (D) (female initiated calling and male responded), and 16 days (E) (male initiated and the female responded, her first call overlapping the male's last). Calls F-H represent a real-time series on day 1, with calls (F), (G), and (H) intermediate in form between Lamentation and Whistle of Desertion Calls. Typical Lamentation Call form is indicated for 1 (I), 16 (J), and 24 (K) days.

"eep," rose abruptly to a 3.2 kHz, rounded peak before returning to base frequency. Intervals were irregular (0.3–0.14 sec) between the 1–3 syllables in this Contact Call. Calls were given with the neck nearly vertical and were not visibly directed to any object.

After day 1, Contact Calls were rapidly rising series of 2–4 chevron-shaped syllables with uniform intervals between them. First syllable frequency was always the lowest; the second and third each began 200–300 Hz above the syllable preceding it. Maximum frequency dropped 1.6 kHz (from 3.2–1.6 kHz) from day 1 to day 24. Mean interval decreased from 0.12 to 0.043 sec from day 1 to 24. Posture during Contact Calls, whether standing or lying down, was head and neck extended toward the object of call.

Phonetically "qua-que-que" with a rising inflection, three-syllable calls comprised 72% of Contact Call observations. This call was used whenever goslings approached one another and I believe it becomes incorporated into the Greeting. Contact Calls followed Whistle of Desertion, Trills, or Greeting Calls at 10 days. At 24 days they occurred only after, or during, separation and ended in Greeting Displays.

Lamentation Calls (in German, *Jammern*) Lorenz 1935; Würdinger 1970) were a long series of 1–2 syllable calls, phonetically prolonged "peeps" (Fig. 2I–K). Calls resembled an inverted letter "U." If the midsection was flat it was considered one syllable, or, when strongly modulated, two syllables, following Würdinger's (1970) terminology. Auditory distinction between the two was not possible. Both forms existed within recorded series, typically the beginning calls were strongly bimodal and became progressively flatter with repetition. Frequency rose (1.1–1.2 kHz on day 1) through the first several calls, then stabilized. Maximum frequencies dropped 2.0 kHz (4.1 to 2.1 kHz) from days 1–14 while syllable duration increased from 0.15-0.20 sec. Call intensity increased with repetition as evidenced by increasing darkness of sonogram tracings. As a result, calls sounded higher and sharper, but sonograms indicated frequency was stable after the first syllables.

Lamentation Calls comprised 65% of calls observed on hatching day. They were highly serial and were given by both hatched and hatching goslings. Calls intermediate in form between Lamentation and Whistle of Desertion were observed on hatching day (Fig. 2G–H). Lamentation Calls of the hatched gosling precipitated increased hatching activity and calls by the hatching gosling, as did three playbacks of recorded Lamentation Calls. This call was rare after hatching, although examples were collected on days 16 and 24.

Transformation of Lamentation Calls to and/or from Whistles of Desertion, not previously reported, was observed on several occasions. The transformation to the Whistle of Desertion was made by elongating call duration (extending the initial syllable or adding a second, broad-spectrum, syllable) and reducing intervals from nearly 0.5 sec to 0.25 sec. Although frequency of the two calls overlaps extensively, duration and interval do not, even in transformation. The two calls remain distinct.

The Whistle of Desertion (Fig 1E–J) (in German, *Pfeifen des verlassensein*, Lorenz 1935) is short and high-pitched. Lorenz's (1935) phonetic de-

scription of this call in *Anser* goslings as "peip" is applicable to *Branta* species. It is the most intense of all gosling calls (Würdinger 1970). Maximum frequency I observed was 5.5 kHz on hatching day and declined over 0.2 kHz/day in the first week, reaching 2.2 kHz by day 24. Mean syllable duration increased from 0.156 (N=16, STD=0.010) sec on day 1 to 0.31 sec (N=60, STD=0.045) at 24 days. Interval duration increased from 0.19 to 0.29 sec from day 10 to 24. The call is a bimodal, modulated single syllable during the first week. With increasing age, a broad-spectrum second syllable was added after the second frequency peak (Fig. 6A-6F). After hatching day, goslings employed this call only when the surrogate parent was distant or not visible. The call was given with the neck extended vertically and the bird either standing or running.

Discussion

Trills have also been described phonetically as "wheeoo, wheeoo" and functionally as a "Contentment Call" (Collias and Jahn 1959). Würdinger (1970) reported the following for Trills: 1) they are produced by weak oscillation of clavicular air sacs while raising and lowering the mandible; 2) they require the largest breath of any call; 3) overall call duration is a linear function of syllable number; and 4) they do not differ in form at either the species or genus level in geese. Trills varied from 3–12 syllables in Würdinger's study, 3–10 in mine. This may be related to gosling age, since I observed a trend toward increased number of syllables with age and I ended my study at 26 days versus her 100 day observations. Syllable duration was the same (0.07 sec) for my geese and all others reported (Fischer 1965; Würdinger 1970). Frequency dropped to 0.9 kHz by 60 days for *B. c. canadensis* (Würdinger 1970), much lower than my observed 3.8–2.4 Hz range from hatch to day 16. Her lower reported frequency probably reflects continuing frequency decline with increasing age.

My observation of Trills from eggs is consistent with Würdinger (1970) and Fischer (1965). They probably represent the majority of calls reported to be heard from Canada Goose eggs prior to hatch, (Balham 1954; Collias and Jahn 1959; Cowan 1973).

Würdinger (1970) reported Trill use only within 1 meter of the parent, and when beginning a change in behavior, movement, feeding or defecation. She classified Trills as "distance-related." Trills given while approaching or pushing at the goose caused experienced geese to rise slightly and raise their wings, allowing goslings under for brooding (Würdinger 1970). She reports both behavior pattern and call cease when contour feathers develop. I believe Trills also serve as a greeting before Greeting Calls arise.

Sleep Call sonograms of other genera of Anatidae published by Fischer (1965) and Kear (1968) correspond to mine in form. All differed from Trills in frequency pattern and syllable number. Lamprecht (1977a) observed 3.5 Sleep Calls/minute within Canada Goose families when parents were present, fewer if they were absent.

Phonetically the sleep call is well described for Canada geese as "wheeoo,"

though Collias and Jahn (1959) termed it a Contentment Call. Like Trills, this call induces brooding (Fischer 1965). Having only one observation, I suspect the call is lost rapidly without parental reinforcement. No adult calls reportedly are derived from this call or the closely related Trill (Würdinger 1970).

Form and frequency of the first three syllables of Greeting and three-note Contact Calls are similar. The calls remain distinct, however, since Greetings usually exceed three syllables, they are used in differing contexts, and frequency rises in successive syllables in Greetings.

Greeting Call series varied in length from 2–14 syllables (average 4-6 syllable for B. c. canadensis) depending on motivation level (Würdinger 1970). All my examples (4–7 syllables) corresponded well to this range. Frequency decreased 1.0 kHz as age increased in both subspecies. *B. c. maxima* goslings at 24 days exhibited frequencies from 1.3–2.5 kHz, the lowest reported for this call by any study.

Sexual/individual differences in Greeting Call frequency have not been reported previously; my examples differed between male and female goslings by as much as 1.0 kHz at the same age. My first syllable frequencies (1.3– 2.3 kHz) and those reported for *B. c. canadensis* (1.0–2.3 kHz) overlapped, and Greeting syllable duration was virtually identical (0.11 and 0.12 sec, respectively) (Würdinger 1970). Greetings followed temporal or spacial separation from family members, both as I observed it and as described by Fischer (1965). Gosling body posture and orientation does not vary between species or genus. *Branta* species adults use direct-facing postures, theoretically retaining an aggressive/dominance connotation (Radesater 1974), whereas *Anser* species reorient the display to an oblique or parallel body angle by 2–4 weeks of age (Lorenz 1966; Fischer 1965). Greeting Calls of goslings reportedly convert directly into the Greeting (Triumph) display of adults (Fischer 1965; Würdinger 1970).

The first contact call I observed is probably the "Wilaut ohne Halvorstrechen," Contact Call *without* the neck out (Fischer 1965; Würdinger 1970) and reportedly follows hatching, as I observed it. Both authors reported the irregular call intervals, which are not observed in any other calls, and indicate this call is retained for several weeks. I did not observe it after day 1.

Würdinger (1970) reported that three-note Contact Calls first arose at four weeks in her Canada geese, and that two-, three-, and four-syllable series were roughly equal in occurrence. I first observed the call at two days. This call was described for *Anser* species by Fischer (1965) as "Wilaut mit Halsvorstrecken," Contact Call with outstretched neck. Three-syllable forms constituted 72% of my sample. Mean syllable duration increased from 0.106 to 0.117 sec over 24 days for my geese. Würdinger (1970) noted a similar trend ending with 0.14 sec at 100 days. She reported an average interval of 0.095 sec, with no mention of change over time. I observed a major decrease in interval from 0.12 on day 1 to 0.043 by day 24.

I observed most Contact Calls following separation, as reported for *A. anser* goslings by Fischer (1965). She reported additional use in "Triumph Calls" with parents and when follow-

ing the parents. Würdinger (1970) related Contact Call use to distance from parents (i.e., used at 1 m at 30 days; 2 m at 60 days; 12 m at 80 days) in her study geese.

Fischer (1965) postulated calls derived from Contact Calls to include Cackling of Adult Greeting (Triumph) displays and the Fortgelaut "Going Away Call," (Heinroth and Heinroth 1924)—comparable to the leading and/or preflight call (Whitford 1987) used when leaving the flock. The latter is alternately considered an intermediate between the Lamentation and Contact Call that is retained into adult life (Würdinger 1970).

Goslings utter Lamentation Calls when entering unfamiliar territory, defecating, following adults, and when approached by dominants (Würdinger 1970). She reported they were one syllable in all *Anser* species, and 1 to 3 syllables in *B. c. canadensis.* I found 1 to 2 syllables in *B. c. maxima,* indicating multiple syllables may be a characteristic of this genus. A Lamentation Call frequency range of 1.6–2.2 kHz, with greatest intensity (35–45 dB) at 1.97 kHz, a 0.18 sec mean syllable duration, and mean interval of 0.47 sec was reported for *B. c. canadensis* (Würdinger 1970). *B. c. maxima* syllables were 0.20 sec, and intervals 0.44 sec for my sample. Call and interval duration did not differ significantly between subspecies.

Based on my limited playback tests, I feel Lamentation Calls increased hatching activities of pipping eggs and may affect hatching synchrony. After hatching, Lamentation Calls are used at 2 meters or less from parents until 40 days, to synchronize family behavior (Würdinger 1970). No adult call is reported to derive from this call.

Whistles of Desertion were one syllable in *Anser* goslings, two in *B. c. canadensis* (Würdinger 1970), and two in my *B. c. maxima* sample. My data support Würdinger's (1970) report of call duration increase over time being a function of increase in second syllable duration. Air capacity of clavicular air sacs increases with growth and permits increased call duration (Würdinger 1970). Duration increased with increasing species body size, with *B. c. canadensis* exhibiting the longest duration in her study. Observed duration for my *B. c. maxima* sample at 10 days exceeded hers for *B. c. canadensis* at 80 days. *B. c. maxima* goslings should evidence greater duration for this call at all comparable ages since they are approximately 20% larger than *B. c. canadensis.*

Whistle of Desertion interval duration was reported as 0.23 sec for *B. c. canadensis* (Würdinger 1970). My observed intervals on day 24 (0.29 sec) exceeded her maximum records.

Würdinger (1970) reported frequency declines of 1.2–2.7 kHz over 100 days. I recorded a decrease from 5.5 to 2.2 kHz in 24 days. In *B. c. canadensis,* age/distance relationships for this call were 1 m from the parent on days 1–30; 2 m after 30 days; 6 m at 50 days, and 20 m at 60 days (Würdinger 1970). The frequency decrease should reduce attenuation (Morton 1975), and therefore I concluded it insures greater call audibility as gosling-parent distance increased with age.

My observations support prior observations that Whistles of Desertion are used when goslings lose visual contact with parents or group, and always

are used with vertical neck posture (Fischer 1965; Würdinger 1970). Lamprecht (1977a) found that parental removal significantly increased distress call rates, whereas sibling removal did not. These call rates also were modified by experience (Lamprecht 1977b). He combined Whistle of Desertion and Lamentation calls together as "distress calls."

Whistles of Desertion bring parents back to warm or defend the goslings (Fischer 1965). Würdinger (1970) reported that parents recognize the Whistle of Desertion of their own offspring and respond with searching behavior. The *Distanzruf*, or Long-Distance Contact Call, is believed to derive from the Whistle of Desertion, arising at about 40 days of age (Würdinger 1970).

Both Würdinger (1970) and Fischer (1965) attempted to classify call function using Heinroth's (1911) distinction of bond-strengthening (bond-drive related) calls and those that synchronize family actions ("distance-related," Würdinger 1970). Supposedly a "bond-drive related call" was a response to the need for contact and interaction with a family member as a result of a bond-reinforcing motivation, "Bindungstreib" (Fischer 1965).

Würdinger (1970) believed that Contact Calls only synchronized family behavior, whereas Greeting or Triumph Display "bonded" family members together. Fischer (1965) believed they both had "bonding" functions. Contact Calls are integrated into Greetings in *Branta* species, therefore having intra-family bond functions, although they also synchronize family functions. Arbitrary classification of calls as synchrony related vs those serving family-bonding functions may be an over-simplification. Whistles of Desertion and Lamentation Calls maintain contact with the family, the goslings' source of protection. As far as I am concerned, they have no altruistic functions, no survival value to the family as a whole as Fischer (1965) and Würdinger (1970) implied. These calls are given only by lost goslings, not by goslings still with the family. Thus they do not indicate absence of a sibling, but a completely self-serving, "help me, I'm here," message. The Trill, classified (Würdinger 1970) as family synchrony-related, induces brooding, also a purely functional role with survival value for the caller. It is my opinion that all these calls should be considered "selfish in origin" (Dawkins 1976), important chiefly to the caller. Previous classifications should be altered accordingly to reflect call function from the caller's perspective rather than "family-function" level.

Conclusions

I found calls of the two *Branta canadensis* subspecies to be similar in shape, syllable number, and frequency-modulation pattern. Supplemented by other studies, this finding supports the theory that gosling calls are conservative at the genus level. Within *Anser*, like calls differed in interval, duration, and frequency among species (Würdinger 1970). Call syllable and interval duration varied little at each age within my sample. Comparing Würdinger's (1970) results and mine, call form variation between subspecies of Canada geese was considerably less than between *Anser* species. Variation between her

B. c. canadensis and my *B. c. maxima* samples was so slight that interval and syllable duration of Trill, Greeting, Contact, Lamentation, and Sleep Calls all agreed. *B. c. maxima* exhibited slightly longer Greeting intervals and syllable duration for Whistles of Desertion. Less variation at the intraspecific than interspecific level should be expected, and the degree of variation should reflect relatively shorter time spans since separation of *Branta canadensis* subspecies than that since *Anser* and *Branta* lines separated (Johnsgard 1965).

All calls I recorded exhibited higher peak frequencies, greater overall frequency decrease, and a greater rate of decrease than previously reported. This was principally because my data set for very young goslings was larger. Whistles of Desertion dropped 0.2 kHz/day for the first week of life, an effect not evident when averaging call frequency over 100 days. Decrease in frequency of calls with maturation reduces attenuation and compensates for the increasing distance from the parents at which calls are used.

I observed differences in form and frequency of Lamentation and Greeting Calls of like-aged male and female goslings, a phenomenon not previously reported. Sample size was small, and these differences could represent either sexual or individual differences. The topic merits further study.

B. c. maxima gosling calls were distinct from one another. Greatest confusion potential for recipients occurs between Contact and Greeting Calls that differ only in syllable number. Trills and Sleep Calls, identical in syllable duration, are distinguishable by their differing frequency patterns.

Literature Cited

Balham, R. W. 1954. The behavior of the Canada goose (*Branta canadensis*) in Manitoba. Dissertation, University of Missouri, Columbia, Missouri

Beer, C. G. 1970. Individual recognition of voice in the social behavior of birds. *In* Advances in the Study of Behavior, vol. 3. pp. 27–74.

Collias, N. E., and L. J. Jahn. 1959. Social behavior and breeding success in Canada geese (*Branta canadensis*) confined in semi-natural conditions. Auk 76(4): 478–509.

Cowan, P. J. 1973. Parental calls and approach behavior of young Canada geese: a laboratory study. Canadian Journal of Zoology 51(6): 647–650.

Dawkins, R. 1976. The Selfish Gene. Oxford University Press, NY.

Fischer, H. 1965. Das Triumphgeschrei des Graugans, (*Anser anser*). Zeitschrift für Tierpsychologie 22: 247–304.

Heinroth, O. 1911. Beitrage zur Biologie, namentlich Ethologie und Psychologie der Anatiden. Verbreitung V International Ornithologische Kongress Berlin. pp. 589–702.

Heinroth, O. and M. Heinroth. 1924–33. Die Vogel Mitteleuropas. Bermuhler, Berlin. 4 vols.

Johnsgard, P. A. 1965. Handbook of Waterfowl Behavior. Cornell University Press, Ithaca, NY.

Kear, J. 1968. The calls of very young Anatidae. *In* Verhalten und Lautausserungen. Beihefte zur Vogelwelt 1: 93–114.

Klopman, R. B. 1961. The greeting ceremony of the Canada goose. Magazine for Ducks and Geese 12: 6–9.

Lamprecht, J. 1977a. A comparison of the attachment to parents and siblings in juvenile geese (*Branta canadensis* and *Anser indicus*). Zeitschrift für Tierpsychologie 43(4): 422–424.

Lamprecht, J. 1977b. Environment-dependent attachment behavior of goslings (Anser indicus) due to environment-specific separation experience. Zeitschrift für Tierpsychologie 43(4): 415–421.

Lorenz, K. 1935. Der Kumpan in der Umwelt des Vögels. Journal für Ornithologie 83(2): 137–215; 83(3): 289–413.

Lorenz, K. 1966. On aggression. Harcourt, Brace and World Inc., NY.

Morton, E. S. 1975. Ecological sources of selection on avian sounds. American Naturalist 109: 17–34.

Radesater, T. 1974. On the ontogeny of orienting movements in the triumph ceremony in two species of geese (*Anser anser* and *Branta canadensis*). Behaviour 50(1/2): 1–15.

Whitford, P. C. 1987. Vocal and visual communication and other social behavior of the giant Canada goose, *Branta canadensis maxima.* Dissertation, University of Wisconsin-Milwaukee. 43pp.

Whitford, P C. 1998. Vocal and visual communication of giant Canada geese. Pages 375–386 *in* D. H. Rusch, M. D. Samuel, D. D. Humburg, and B. D. Sullivan, eds. Biology and Management of Canada geese. Proceedings of the International Canada Goose Symposium, Milwaukee, Wisconsin

Würdinger, I. 1970. Erzeugung, Ontogenie and Funktion der Lautausserungen bei vier Gansearten (*Anser indicus, A. caerulescens, A. albifrons* und *Branta canadensis*). Zeitschrift für Tierpsychologie 27: 257–302.

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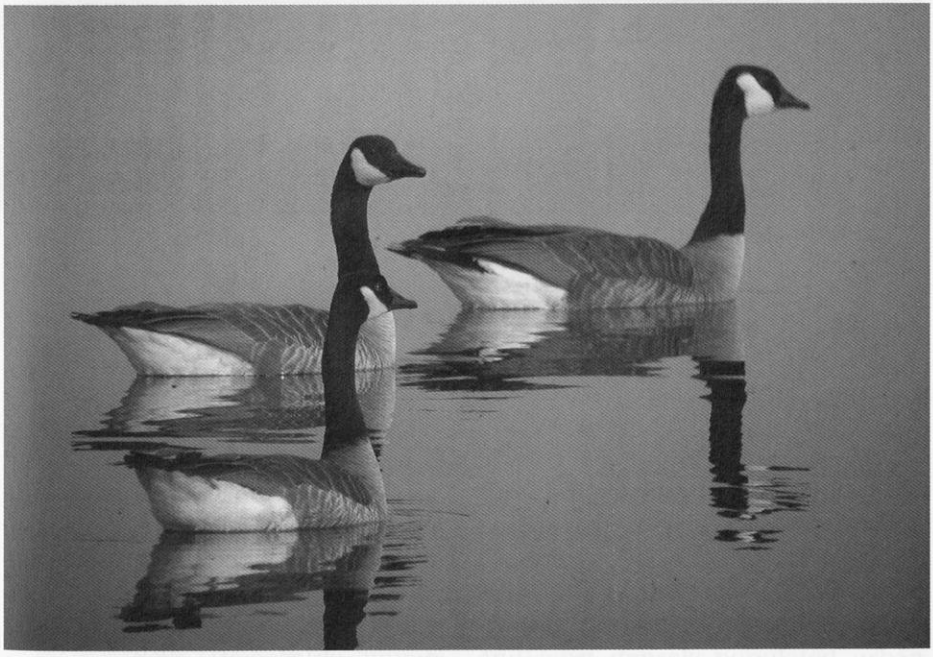

Canada Geese *by Gary Krogman*

Cedar Waxwing *by David Kuecherer*

Birds of Milwaukee County, Wisconsin—1840s to the Present: Historical and Present-day Ornithology and Management

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Abstract

Observers in Milwaukee County, Wisconsin have recorded 360 species of birds since the 1840s. This paper describes a brief history of bird records and present-day bird use of the county, and the current state of wildlife management in the county. An annotated checklist of all species seen is included.

Birds in Milwaukee County—An Overview

Although it is mostly urban in character, Milwaukee County, Wisconsin, has abundant birdlife, especially during migratory periods. Three hundred and sixty species of birds have been found in Milwaukee County since the 1840s (Domagalski, unpublished manuscript 2003; *The Passenger Pigeon* "Seasonal Field Notes" through Fall 2003; Robbins 1991). This number of species is approximately 85% of the state total, and more than that for any of the 71 other counties in the state. The checklist included at the end of this paper lists these species, with status designations and brief annotation. Four species on the list have not been seen since the beginning of the twentieth century. These include Magnificent Frigatebird and Thick-billed Murre, plus the extinct Passenger Pigeon and Carolina Parakeet. Several more were extirpated during the early twentieth century (Sharp-tailed Grouse and Greater Prairie-Chicken).

In spite of the fact that Milwaukee County contains Wisconsin's largest and most densely populated urban and suburban area, concentrations of

migrant birds occur here in part due to Milwaukee's location on the western shoreline of Lake Michigan, which comprises an important migratory pathway or flyway for birds. The shoreline is a natural north-south leading line, used by migrant birds during both spring and fall migrations. The western shore of the Lake is also a barricade to the eastward movements of western vagrants during the well-documented vagrant period of August through December, when mostly juvenile birds wander off course from traditional routes. This natural obstacle has produced records of Varied Thrush, Black-throated Sparrow, Ash-throated Flycatcher and Phainopepla, among others in Milwaukee and along the western shore of the lake. The Milwaukee Embayment has long been recognized as an area used by thousands of migratory waterfowl, loons, grebes, gulls, terns, shorebirds and other avian species groups, and is an important factor in attracting birds and providing them with temporary habitat.

The Embayment, the lakeshore, and modern-day harbor have historically been used and are presently used by birds for resting and feeding during both spring and fall migration, as well as during winter for some avian species. The Harbor and its breakwaters provide a resting and loafing area for thousands of non-breeding, subadult gulls, mostly Herring and Ring-billed, during the entire year. These are joined during spring and fall migration by wintering arctic gulls including (in decreasing order of abundance): Thayer's, Glaucous, and Iceland. During peak migration the Harbor is host to conservatively 75-100,000 migrant and resident gulls. The numbers that spend the winter depend on the severity of winter reflected in the degree of freezing of the inner Harbor, although the main food source for many of these birds is urban landfills. The recent warmer winters have resulted in a fall migration season for these larids that extends to approximately January 15th, when winter patterns of occurrences and feeding as well as final departure of migrants are seen. All of the species of gulls and terns recorded in the state (with the exceptions of Ross's and Black-tailed gulls) have been recorded in Milwaukee, and the single state record of Slaty-backed Gull (pending acceptance by the Records Committee) was from the inner Harbor.

Historically the Milwaukee estuary, (now the city's Downtown district and old industrial valley) extending west to present-day Miller Park, was a continuation of marsh, tamarack bog, and swamp, and was known to American Indians as a haven for waterfowl. This area lies at the confluence of the Milwaukee, Menominee, and Kinnikinnic rivers on its eastern extent. Well over 95% of this wetland has been eliminated with industrialization of the Menominee Valley.

Milwaukee County also has a well-kept park system, including some areas set aside as nature sanctuaries. Ninety-nine species of breeding birds have been recently found within the county boundaries, as confirmed by the Wisconsin Breeding Bird Atlas for Milwaukee County during 1995-2000 (see the webpage for the Wisconsin Breeding Bird Atlas <http://www.uwgb.edu/birds/wbba/>; Wisconsin Breeding Bird Atlas 2003). Numbers of breeding species are far fewer than

those of migrants with 261 non-breeding species recorded in the County and only 99 breeders (Idzikowski 1989, Idzikowski et al. 1989, Korducki and Bontly 2000).

Historically, Milwaukee County was blessed with abundant populations of game birds such as waterfowl, Sharp-tailed Grouse, Greater Prairie-Chicken, and Northern Bobwhite. These species were found within walking distance of the city, supplying hunters as late as the 1870s (Gregory 1931, Schorger 1943). Since the early twentieth century, some game species (Northern Bobwhite, Greater Prairie-Chicken, Sharp-tailed Grouse, Ruffed Grouse, Gray Partridge) have ceased to inhabit the county due to the expanding human population and accompanying alteration of the landscape for human uses. The introduced Gray Partridge was a special case, with individuals released by hunters until sometime in the middle of the twentieth century. Although some game bird species have thus been lost or their populations have declined, many other species still are found within the county boundaries during one or more seasons. Birds are often used as primary examples of indicators of environmental health (Gill 1990), and preserving birds and their habitat are worthwhile goals. These goals should be supported and promoted as part of urban environmental policy.

Wildlife Management in Present-day Milwaukee County

The development of urban areas fragments the original natural landscape, and development both removes and creates areas of habitat for wildlife (Adams 1994). Parks are set aside, and features of the "built environment" (architectural features on buildings and bridges) are used as nesting sites by some avian species. Over 90% of the native vegetation in Milwaukee County has been lost, including over 99% of native prairie, 100% of oak-savannah, 96% of upland woods and 70% of wetlands. In a similar analysis, the breeding bird population in the County before 1850 was analyzed using old records, as well as by assuming historical presence based on regional occurrences; it showed a loss of 57 species, or 36% to today; 26% of forest (15) and prairie-oak savanna (10) species have been extirpated as breeders. Wetlands have lost 43% of breeders (23 species). Milwaukee probably had 9 species characteristic of more northern forests and bogs; many of these are still found in the relict bogs of Ozaukee and Washington counties; all 9 of these are gone from the County as nesting birds (Leitner et al., in press).

Habitat fragmentation has created a host of problems for birds and other wildlife, including increased predation and cowbird parasitism (Askins 2000, Robinson et al. 1993). Although birds are still found seasonally in Milwaukee County in great numbers, until the present time relatively few wildlife management practices have been used to enhance habitat for birds or other wildlife species (R. Lien, Urban Wildlife Specialist, Bureau of Wildlife Management, WDNR, personal communication; D. Spuhler, former Land Manager, Milwaukee County Department of Parks, Recreation, and Culture, personal communication). Areas in Milwaukee County that are exceptions to this statement

are the Havenwoods State Forest, Schlitz Audubon Nature Center, and Wehr Nature Center, each of which has ongoing active habitat management activities.

Milwaukee County is currently gathering information on non-consumptive uses of wildlife such as observation by wildlife and bird enthusiasts, in hopes of developing areas, birding trails, and other facilities for birding tourists. The cities of Toronto, ON (Hough 1995), Arcata, CA, and numerous other communities in the states of Alaska, Arizona, Arkansas, California, Colorado, Illinois, Iowa, Maryland, Michigan, Minnesota, Nebraska, New Hampshire, New Jersey, New Mexico, Ohio, Oregon, Texas, Virginia, and Washington have developed tourist facilities, festivals, and other activities and accommodations attractive to wildlife enthusiasts and birders, which generate considerable economic benefits for those communities. The potential certainly exists for activities of this type in Milwaukee County. With county funding for management and development of wildlife habitat, Milwaukee County stands to realize significant economic benefit from birding and other wildlife viewing opportunities. There is abundant proof that these types of developments have worked in communities around the United States. A Milwaukee County Parks "Oak Leaf Birding Trail" map has been developed for the county.

Problem Species

In recent years, some species in urban areas have become abundant enough to cause problems for humans, including the Canada Goose (Whitford 2002), Ring-billed and Herring gulls, the Rock Pigeon, and the European Starling. Emphasis has been placed on dealing with these overabundant species by both county and state governments, and programs exist for control of these wildlife species. A report, the "Wisconsin Urban Waterfowl Task Force Final Report and Recommendations," was issued in 1998. The task force included representatives from municipal government agencies, real estate managers, animal rights groups, county parks departments, golf courses, the Wisconsin Humane Society, the Wisconsin Lakes Association, the Wisconsin Audubon Council, the Wisconsin Conservation Congress, the Wisconsin Farm Bureau, the Wisconsin Society for Ornithology, the Wisconsin Wildlife Federation, hunters' groups, and the Wisconsin Department of Natural Resources. The report makes recommendations for various control and management alternatives for dealing with large concentrations of Canada Geese and other waterfowl in urban areas (Wisconsin Urban Waterfowl Task Force 1998).

A program is in place at the state level to pay abatement costs for wildlife damage in urban areas. The Urban Wildlife Damage Abatement and Control Grant makes funding up to $25,000 available to urban areas to help in dealing with problems caused by populations of Canada Geese and white-tailed deer, with a maximum of $5000 available for an individual applicant. Funds can be used for monitoring populations, removal, transport, and translocation of deer or geese, modification of habitat, processing of and distribution of geese or

deer to food banks or other food programs of charitable agencies or organizations, and other control or management activities as approved by WDNR. Proof of population estimates and damage effects of populations of animals on the communities in question are required as part of the grant process. Communities must propose legal and ethical means of attaining controls on said populations (WDNR 1999).

Management Recommendations, Summary, and Conclusions

Wildlife management as such has heretofore not been a priority in Milwaukee County. This may be changing, as the county has hired individuals to develop plans for natural areas management activities on county lands. Populations of birds continue to use the county, especially during migration. Conflicts will continue to arise between human uses of county park lands, commercial and recreational boat traffic in Milwaukee Bay and the harbor area, and housing or commercial-industrial development on remaining privately-held lands. As human population and development pressures increase, avian wildlife may continue to lose ground. A sound set of policies for enhancing wildlife habitat may be helpful in preventing some losses.

Among other recommendations, there is a definite need to expand breeding, migrant, and wintering bird survey coverage of Milwaukee County lands and new Metropolitan Milwaukee Sewerage District (MMSD) "conservation lands," especially including the remaining wetland areas such as Monastery Lake, Dumpky's Marsh, and other small cattail marshes. These types of surveys have been inconsistent and fragmented in the county in the past. This area's southern location in the state makes it a good survey location to look for increased occurrences of southern species as breeders, with the possible advent of climate warming (such as White-eyed Vireo and Summer Tanager).

Creation of protected areas for wildlife, including backyard habitat initiatives aimed at birds, through the National Wildlife Federation's Backyard Wildlife Habitat Programs (National Wildlife Federation 2004), Audubon At Home (National Audubon Society 2004), efforts initiated by Wild Ones (Wild Ones 2004), can provide the single most important component of a strategy for bird conservation in the county. Although legal protection exists for nesting and migratory birds, local government policies regarding habitat for bird species have yet to be articulated in Milwaukee County. In addition, environmental pollution of land, water, and air threatens wildlife health as it does human health (Hough 1995). Continued monitoring of bird species abundance, wildlife health and contaminants, and some restraints on development in some areas of the county will be necessary to ensure the long-term health of bird populations.

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Birds of Milwaukee County, Wisconsin (1850–Present)

Current status designations: A: abundant; C: common; FC: fairly common; UC: uncommon; R: rare but annual; VR: very rare, not annual; VAG: vagrant, out of normal range, not expected; No20C: no 20th or 21st century records; M: migrant; Irr: irregular; P: permanent resident, most also breed in the county; *: breeds in Milwaukee County (prob*: probably breeds in Milw. Co.); W: winters in Milw. Co; Extirpated: population lost due to urbanization and alteration of habitat; not found recently; (undoc.): documentation not submitted to WSO Records Committee.

1. Black-bellied Whistling-Duck VAG (one record)
2. Greater White-fronted Goose VRM
3. Snow Goose UCM
4. Ross's Goose VRM
5. Cackling Goose UCM
6. Canada Goose AM& C*&CW
7. Brant VRM
8. Mute Swan UCM
9. Trumpeter Swan VRM
10. Tundra Swan UCM
11. Wood Duck CM&UC*
12. Gadwall FCM
13. Eurasian Wigeon VRM
14. American Wigeon CM
15. American Black Duck CM&R*&CW
16. Mallard CM&C*P
17. Blue-winged Teal CM&R*
18. Cinnamon Teal VRM
19. Northern Shoveler CM
20. Northern Pintail UCM
21. Green-winged Teal FCM
22. Canvasback UCM
23. Redhead FCM
24. Ring-necked Duck FCM
25. Greater Scaup CM&FCW
26. Lesser Scaup CM&UCW
27. King Eider VRM&W
28. Harlequin Duck RM&W
29. Surf Scoter UCM
30. White-winged Scoter UCM
31. Black Scoter UCM
32. Long-tailed Duck (Oldsquaw) UCM&W
33. Bufflehead CM&W
34. Common Goldeneye CM&W
35. Barrow's Goldeneye VRM&W
36. Hooded Merganser FCM
37. Common Merganser FCM&W
38. Red-breasted Merganser FCM&W
39. Ruddy Duck FCM
40. Gray Partridge formerly UCP; extirpated; introduced
41. Ring-necked Pheasant UCP; introduced
42. Ruffed Grouse formerly UCP; extirpated
43. Sharp-tailed Grouse CP through mid-1800s; extirpated by early 1900s
44. Greater Prairie-Chicken CP through mid-1800s; extirpated by early 1900s
45. Wild Turkey RP; recent unintentional reintroduction?
46. Northern Bobwhite formerly UCP; extirpated
47. Red-throated Loon RM
48. Pacific Loon VRM
49. Common Loon CM
50. Pied-billed Grebe CM
51. Horned Grebe FCM
52. Red-necked Grebe RM
53. Eared Grebe RM
54. Western Grebe VRM
55. American White Pelican VRM
56. Double-crested Cormorant CM
57. Anhinga VAG
58. Magnificent Frigatebird VAG; No20C
59. American Bittern UCM
60. Least Bittern UCM&R*
61. Great Blue Heron CM&UC*
62. Great Egret UCM
63. Snowy Egret VRM
64. Little Blue Heron VRM
65. Cattle Egret VRM
66. Green Heron CM&UC*
67. Black-crowned Night-Heron CM
68. Yellow-crowned Night-Heron RM&VR*
69. White-faced Ibis VRM
70. Wood Stork VR; No20C
71. Black Vulture VRM
72. Turkey Vulture CM
73. Osprey UCM
74. Swallow-tailed Kite VR; (undocumented sighting in 2001, No20C)
75. Mississippi Kite VRM
76. Bald Eagle UCM
77. Northern Harrier UCM
78. Sharp-shinned Hawk FCM&RW
79. Cooper's Hawk CM*FC*&FCW
80. Northern Goshawk UCM
81. Red-shouldered Hawk UCM
82. Broad-winged Hawk FCM
83. Swainson's Hawk VRM
84. Red-tailed Hawk CM&FC*&FCW
85. Rough-legged Hawk UCM
86. Golden Eagle VRM
87. American Kestrel CM&FC*&FCW
88. Merlin UCM
89. Gyrfalcon VRM
90. Peregrine Falcon UCM&R*&RW
91. Yellow Rail VRM
92. Black Rail VRM
93. King Rail VRM

94. Virginia Rail UCM&R*
95. Sora FCM&R*
96. Purple Gallinule VAG (three records)
97. Common Moorhen RM (R prob*)
98. American Coot CM (R prob*)&UCW
99. Sandhill Crane UCM
100. Black-bellied Plover FCM
101. American Golden Plover UCM
102. Semipalmated Plover FCM
103. Piping Plover RM
104. Killdeer CM&UC*
105. Black-necked Stilt VRM
106. American Avocet VRM
107. Greater Yellowlegs FCM
108. Lesser Yellowlegs FCM
109. Solitary Sandpiper FCM
110. Willet RM
111. Spotted Sandpiper CM&UC*
112. Upland Sandpiper UCM
113. Whimbrel RM
114. Hudsonian Godwit RM
115. Marbled Godwit RM
116. Ruddy Turnstone FCM
117. Red Knot UCM
118. Sanderling FCM
119. Semipalmated Sandpiper FCM
120. Western Sandpiper RM
121. Least Sandpiper FCM
122. White-rumped Sandpiper UCM
123. Baird's Sandpiper UCM
124. Pectoral Sandpiper FCM
125. Purple Sandpiper RM&RW
126. Dunlin FCM
127. Curlew Sandpiper VRM
128. Stilt Sandpiper UCM
129. Buff-breasted Sandpiper VRM
130. Ruff VRM
131. Short-billed Dowitcher FCM
132. Long-billed Dowitcher UCM
133. Wilson's Snipe FCM
134. American Woodcock FCM&R*
135. Wilson's Phalarope RM
136. Red-necked Phalarope VRM
137. Red Phalarope VRM
138. Pomarine Jaeger (Undoc.)VRM
139. Parasitic Jaeger VRM
140. Laughing Gull VRM
141. Franklin's Gull RM
142. Little Gull VRM
143. Black-headed Gull VRM
144. Bonaparte's Gull FCM
145. Mew Gull VRM
146. Ring-billed Gull AM&FC*&CW
147. California Gull VRM
148. Herring Gull AM&FC*&CW
149. Thayer's Gull RM&W
150. Iceland Gull VRW
151. Lesser Black-backed Gull RM&W
152. Glaucous-winged Gull VRM&W
153. Glaucous Gull UCW
154. Great Black-backed Gull RM&W
155. Black-legged Kittiwake RM&W
156. Ivory Gull VRW
157. Caspian Tern FCM
158. Royal Tern VAG
159. Common Tern FCM
160. Arctic Tern VRM
161. Forster's Tern FCM
162. Least Tern VRM
163. Black Tern UCM
164. Thick-billed Murre (one 19th century record)
165. Rock Pigeon AP; introduced
166. Mourning Dove CM&C*&CW
167. White-winged Dove VRM
168. Passenger Pigeon (Extinct CM)
169. Common Ground-Dove VAG
170. Carolina Parakeet (Extinct VR seasonal visitant to SE WI)
171. Black-billed Cuckoo FCM&UC*
172. Yellow-billed Cuckoo FCM&R*
173. Barn Owl VRM&*&W
174. Eastern Screech-Owl FCP
175. Great Horned Owl FCP
176. Snowy Owl UCW
177. Northern Hawk Owl VRM&W (2 records)
178. Burrowing Owl VRM
179. Barred Owl UCM&W
180. Great Gray Owl VRW (one record)
181. Long-eared Owl UCM&W
182. Short-eared Owl UCM&W
183. Boreal Owl VRM&W (only two records)
184. Northern Saw-whet Owl UCM&W
185. Common Nighthawk CM&UC*
186. Whip-poor-will UCM
187. Chimney Swift CM&C*
188. Ruby-throated Hummingbird CM &FC*
189. Rufous Hummingbird VRM
190. Belted Kingfisher CM & UC*
191. Red-headed Woodpecker UCM,UC*,RW
192. Red-bellied Woodpecker CP
193. Yellow-bellied Sapsucker FCM
194. Downy Woodpecker CP
195. Hairy Woodpecker UCP
196. Black-backed Woodpecker VRM
197. Northern Flicker CM&FC*
198. Pileated Woodpecker VRM
199. Olive-sided Flycatcher FCM
200. Eastern Wood-Pewee CM&FC*
201. Yellow-bellied Flycatcher FCM
202. Acadian Flycatcher UCM
203. Alder Flycatcher FCM
204. Willow Flycatcher FCM&UC*
205. Least Flycatcher CM
206. Eastern Phoebe CM&UC*
207. Great Crested Flycatcher CM&UC*
208. Western Kingbird RM
209. Eastern Kingbird CM&FC*
210. Loggerhead Shrike RM
211. Northern Shrike UCM&W

(Continued)

Birds of Milwaukee County, Wisconsin (1850–Present) (Continued)

212. White-eyed Vireo RM
213. Bell's Vireo RM
214. Yellow-throated Vireo FCM
215. Blue-headed Vireo FCM
216. Warbling Vireo CM&FC*
217. Philadelphia Vireo FCM
218. Red-eyed Vireo CM&FC*
219. Blue Jay CP&CM
220. Clark's Nutcracker VAG; one record
221. Black-billed Magpie VRM
222. American Crow CP&CM
223. Common Raven RM
224. Horned Lark FCM&R*
225. Purple Martin UCM*&UC*
226. Tree Swallow CM&UC*
227. Northern Rough-winged Swallow CM&UC*
228. Bank Swallow CM&C*
229. Cliff Swallow CM&UC*
230. Barn Swallow CM&C*
231. Black-capped Chickadee CP
232. Boreal Chickadee VRW
233. Tufted Titmouse RM&R*&RW
234. Red-breasted Nuthatch FCM
235. White-breasted Nuthatch CP
236. Brown-headed Nuthatch VRW
237. Brown Creeper CM&UCW
238. Carolina Wren RM, R*, RW
239. Bewick's Wren RM
240. House Wren CM&C*
241. Winter Wren CM&RW
242. Sedge Wren UCM
243. Marsh Wren UCM&R*
244. Golden-crowned Kinglet CM&FCW
245. Ruby-crowned Kinglet CM&RW
246. Blue-Gray Gnatcatcher CM&UC*
247. Eastern Bluebird FCM&UC*
248. Mountain Bluebird VRM
249. Townsend's Solitaire VRM
250. Veery CM&R*
251. Gray-cheeked Thrush CM
252. Swainson's Thrush CM
253. Hermit Thrush CM&RW
254. Wood Thrush CM&UC*
255. American Robin AM, A*&UCW
256. Varied Thrush VRM&W
257. Gray Catbird CM&C*
258. Northern Mockingbird RM
259. Brown Thrasher CM&FC*
260. European Starling AP; introduced
261. American Pipit UCM
262. Bohemian Waxwing RM&W
263. Cedar Waxwing CM,FC*&UCW
264. Phainopepla VAG; one record
265. Blue-winged Warbler FCM
266. Golden-winged Warbler UCM
267. Tennessee Warbler CM
268. Orange-crowned Warbler UCM
269. Nashville Warbler CM
270. Northern Parula FCM
271. Yellow Warbler CM&UC*
272. Chestnut-sided Warbler CM
273. Magnolia Warbler CM
274. Cape May Warbler FCM
275. Black-throated Blue Warbler UCM
276. Yellow-rumped Warbler AM
277. Black-throated Green Warbler CM
278. Blackburnian Warbler FCM
279. Yellow-throated Warbler RM
280. Pine Warbler UCM
281. Prairie Warbler RM
282. Palm Warbler CM
283. Bay-breasted Warbler FCM
284. Blackpoll Warbler CM
285. Cerulean Warbler RM
286. Black-and-white Warbler CM
287. American Redstart CM&R*
288. Prothonotary Warbler RM
289. Worm-eating Warbler RM
290. Ovenbird CM
291. Northern Waterthrush FCM
292. Louisiana Waterthrush UCM
293. Kentucky Warbler RM
294. Connecticut Warbler UCM
295. Mourning Warbler FCM
296. Common Yellowthroat CM&FC*
297. Hooded Warbler RM
298. Wilson's Warbler FCM
299. Canada Warbler FCM
300. Yellow-breasted Chat RM
301. Summer Tanager RM
302. Scarlet Tanager FCM&UC*
303. Western Tanager RM
304. Green-tailed Towhee VAG
305. Spotted Towhee RM
306. Eastern Towhee FCM&UC*
307. American Tree Sparrow CM&W
308. Chipping Sparrow CM&C*
309. Clay-colored Sparrow UCM&R*
310. Field Sparrow CM&UC*
311. Vesper Sparrow UCM
312. Lark Sparrow RM
313. Black-throated Sparrow VAG
314. Lark Bunting RM
315. Savannah Sparrow CM&FC*
316. Grasshopper Sparrow UCM
317. Henslow's Sparrow UCM
318. LeConte's Sparrow RM
319. Nelson's Sharp-tailed Sparrow RM
320. Fox Sparrow CM&UCW
321. Song Sparrow CM, C*&UCW
322. Lincoln's Sparrow UCM

323. Swamp Sparrow CM
324. White-throated Sparrow CM&UCW
325. White-crowned Sparrow CM&RW
326. Harris's Sparrow RM
327. Dark-eyed Junco CM&CW
328. Lapland Longspur UCM
329. Smith's Longspur VRM
330. Snow Bunting FCM&W
331. Northern Cardinal CP
332. Rose-breasted Grosbeak CM&UC*
333. Blue Grosbeak VRM
334. Painted Bunting VRM
335. Indigo Bunting CM&FC*
336. Dickcissel UCM&R*
337. Bobolink FCM&UC*
338. Red-winged Blackbird AM, C*&RW
339. Eastern Meadowlark FCM&UC*
340. Western Meadowlark UCM; (now much less common)
341. Yellow-headed Blackbird UCM
342. Rusty Blackbird FCM
343. Brewer's Blackbird FCM
344. Common Grackle AM, C*&RW
345. Brown-headed Cowbird CM, C*&RW
346. Orchard Oriole UCM&R*
347. Bullock's Oriole VRM
348. Baltimore Oriole CM&FC*
349. Brambling VAG (very rare vagrant -one record)
350. Pine Grosbeak UCM&W
351. Purple Finch FCM&UCW
352. House Finch CM, C*&CW
353. Red Crossbill IrrUCM&W
354. White-winged Crossbill IrrUCM&W
355. Common Redpoll FCM&W
356. Hoary Redpoll RW
357. Pine Siskin FCM&W
358. American Goldfinch CM,C*&FCW
359. Evening Grosbeak IrrUCM&W
360. House Sparrow AP; introduced

acknowledge the contributions of several generations of avid birders and ornithologists who have lived in or visited Milwaukee County. Without them, the list of bird species found in the county would be incomplete.

Literature Cited

Adams, L. W. 1994. Urban wildlife habitats: a landscape perspective. University of Minnesota Press, Minneapolis, MN.

Askins, R. A. 2000. Restoring North America's birds: lessons from landscape ecology. Yale Univ. Press, New Haven, CN.

Domagalski, R. 2003. Unpublished manuscript. Wisconsin Rare Bird Records.

Gill, F. 1990. Ornithology. W. H. Freeman and Company, New York.

Gregory, J. G. 1931. History of Milwaukee, Wisconsin. Volume II. S. J. Clarke Publ. Co., Chicago-Milwaukee.

Hough, M. 1995. Cities and natural process. Routledge, New York.

Idzikowski, J. H. 1989. "Milwaukee County Lakeshore", *in* Wisconsin's favorite bird haunts, Third edition. D. D. Tessen, ed. Wisconsin Society for Ornithology, Inc. DePere, WI.

Idzikowski, J. H., W. Cowart, and M. Donald. 1989. "Milwaukee County Inland", *in* Wisconsin's favorite bird haunts. Third edition. D. D. Tessen, ed. Wisconsin Society for Ornithology, Inc. DePere, WI.

Korducki, M., and M. Bontly. 2000. "Milwaukee County", *in* Wisconsin's favorite bird haunts. Fourth Edition. D. D. Tessen, ed. Wisconsin Society for Ornithology, Inc. DePere, WI.

Leitner, L. A., G. Casper, and J. H. Idzikowski. In press. Quantifying historical loss of species diversity in Milwaukee County, Wisconsin. *In* The vanishing present: ecological change in Wisconsin. University of Wisconsin Press, Madison, WI.

National Audubon Society. 2004. Audubon At Home program homepage. Online at <http://www.audubon.org/bird/at_home/> (accessed 12 August 2004).

National Wildlife Federation. 2004. Backyard Wildlife Habitat Program homepage. Online at <http://www.nwf.org/backyardwildlife habitat/> (accessed 12 August 2004).

Robbins, S. D., Jr. 1991. Wisconsin birdlife: population & distribution, past & present. Univ. of Wisconsin Press, Madison , WI.

Robinson, S. K., J. A. Grzybowski, S. I. Rothstein, M. C. Brittingham, L. J. Petit, and F. R. Thompson. 1993. Management implications of cowbird parasitism on Neotropical migrant songbirds. Pp.93–102. *In* Status and Management of Neotropical Migratory Birds. USDA Forest Service General Technical Report RM-229. Fort Collins, CO.

Schorger, A. W. 1943. The Prairie-Chicken and Sharp-tailed Grouse in early Wisconsin. Transactions of the Wisconsin Academy of Sciences, Arts and Letters. 35: 1–59.

Wild Ones. 2004. Native Plants, Natural Land-

scapes homepage. Online at <http://www.for-wild.org/> (accessed 12 August 2004).
Whitford, P. C. 2002. Shoreline characteristics of urban lakes as a factor in nuisance Canada Goose problems. Passenger Pigeon 64(4): 271–280.
Wisconsin Breeding Bird Atlas Web Site, Data Summaries, May 2003. Online at <http://www.uwgb.edu/birds/wbba/> (accessed 12 August 2004).
Wisconsin Department of Natural Resources. 1999. Urban Wildlife Damage Abatement and Control Grant Application.
Wisconsin Urban Waterfowl Task Force. 1998. Report and Recommendations.

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Common Loon in winter *by Gary Frogman*

Capturing Common Loon Nest Predators on 35mm Film

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ABSTRACT

Six infra-red-triggered cameras, purchased with a grant from the Wisconsin Society for Ornithology, were used to identify predators of active and artificial Common Loon (Gavia immer) *nests in northern Wisconsin during the 2003 and 2004 nesting seasons. Five raccoons* (Procyon lotor) *and 1 Common Raven* (Corvus corax) *were identified as nest-predators at 11 predated, active Common Loon nests. Eight raccoons were identified as nest-predators at 10 predated artificial nest-sites. The results suggest that raccoons play an important role in Common Loon nest failure in northern Wisconsin.*

INTRODUCTION

Andren (1992) found that raccoons reach their highest densities in fragmented landscapes. In Illinois, raccoon-vulnerable species of songbirds were found to be in decline, which was attributed to increasing populations of raccoons and their high rate of nest predation on low-nesting species (Schmidt 2003). Lindsay et al. (2002) also documented significant declines in the prevalence of ground-nesting birds on developed lakes in northern Wisconsin, but did not quantify raccoon density.

Currently, over 80% of northern

Wisconsin's shoreline frontage is privately owned and development in this region has increased 216% since 1965 (Wisconsin Association of Lakes 2002). It is thought that all of northern Wisconsin's privately owned frontage property will be developed by 2015 (Wisconsin Association of Lakes 2002). The deleterious effects of such development on ground-nesting bird species is of concern. Developed shorelines may lead to elevated raccoon populations and lower Common Loon nesting success in northern Wisconsin.

Our objective was to identify predators of Common Loon nests in northern Wisconsin. We used infra-red cameras, purchased with a grant from the Wisconsin Society of Ornithology, to identify loon nest-predators at active nests and at artificial nests within the study area. This study was conducted in conjunction with an ongoing loon demography study funded by the United States EPA (STAR Co-operative Agreement R82-9085) and conducted by the Wisconsin Department of Natural Resources, which is quantifying loon population size and demographic parameters within a 5000 km area of northern Wisconsin during 2002–2004. The nest failure rate was >50% within the study area during 2002–2004 and nest predation is thought to be the primary factor (M. Meyer, WDNR, pers. comm.).

Study Area

The study area included Vilas, Oneida, Lincoln, and Iron Counties in northern Wisconsin. Annual precipitation is 30–34 inches and annual snowfall is 50–90 inches. Kettle lakes, ponds, and peatlands are common. Lakes cover 15% and wetlands 21% of total area within the region. Land cover type is northern hardwood and coniferous forest, dominated by white pine (*Pinus strobus*), red pine (*Pinus resinosa*), red oak (*Quercus rubra*), paper birch (*Betula papyrifera*) and eastern hemlock (*Tsuga canadensis*).

Methods

Camera placement at active nests—

Infra-red-triggered 35mm cameras (Moultrie Game Cam II) were used to capture predation events of active Common Loon nests from 23 May–26 June 03 and from 14 May–12 July 2004 (Table 1). The infra-red trigger has a range of approximately 20 feet and is triggered by anything that crosses the beam. The operator has the setting option of 6-minute or 15-second intervals between photos. Kodak 800-speed film was used, as recommended for nighttime photography. Date and time were imprinted on each photograph.

Two-foot lengths of 10-inch diameter PVC piping were covered with birch bark. A slit, the width of the camera's factory-issued weatherproof housing, was cut lengthwise into the PVC and the camera was placed inside, exposing only the face of the factory housing. A piece of birch bark was then placed over the face of the unit, masking much of the exposed housing (Figure 1). This was done in order to camouflage the units from incubating loons, predators, and humans. It also allowed for minimal set-up time.

Set-up varied with each nest location. To minimize set-up time, the

Table 1. Camera placements at active Common Loon nests.

County	Lake Name	Territorial Pair ID	Date Placed	Date Collected	Nest Status	Predator
Oneida	Clear	Northeast Points	23-May-03	09-Jun-03	Predated	Unknown
Oneida	Clear	Northeast Points	23-May-03	09-Jun-03	Predated	Unknown
Oneida	Cunard	—	02-Jun-03	16-Jun-03	Predated	Unknown
Vilas	Anvil	—	02-Jun-03	04-Jun-03	Predated	Unknown
Vilas	Wabasso	—	05-Jun-03	16-Jun-03	Predated	Raccoon
Vilas	Trout	North Islands	06-Jun-03	13-Jun-03	Predated	Raven
Oneida	Clear	Northeast Banded	09-Jun-03	12-Jun-03	Did not lay	—
Oneida	Clear	Northeast Banded	09-Jun-03	12-Jun-03	Did not lay	—
Vilas	Patterson	—	12-Jun-03	19-Jun-03	Predated	Unknown
Vilas	Trout	Horseshoe	13-Jun-03	19-Jun-03	Eggs Displaced	—
Iron	Turtle Flambeau Flowage	South Bonies	18-Jun-03	01-Jul-03	Hatched	—
Iron	Turtle Flambeau Flowage	Blair	18-Jun-03	30-Jun-03	Predated	Raccoon
Iron	Turtle Flambeau Flowage	Teal Bay	18-Jun-03	30-Jun-03	Eggs Displaced	—
Oneida	Tomahawk	Dead Island	26-Jun-03	-	Hatched	—
Oneida	Buck	—	14-May-04	01-Jun-04	Hatched	—
Oneida	Blue	—	19-May-04	08-Jun-04	Predated	Raccoon
Lincoln	Squaw	—	22-May-04	21-Jun-04	Hatched	—
Oneida	Bolger	—	28-May-04	21-Jun-04	Predated	Raccoon
Iron	Turtle Flambeau Flowage	Siefert's Slough	06-Jun-04	14-Jun-04	Removed	—
Oneida	West Twin	—	10-Jun-04	17-Jun-04	Hatched	—
Oneida	Bullhead	—	17-Jun-04	21-Jun-04	Predated	Raccoon
Oneida	Minocqua	Stack's Bay	22-Jun-04	-	Eggs Displaced	—
Oneida	Langley	—	29-Jun-04	12-Jul-04	Hatched	—

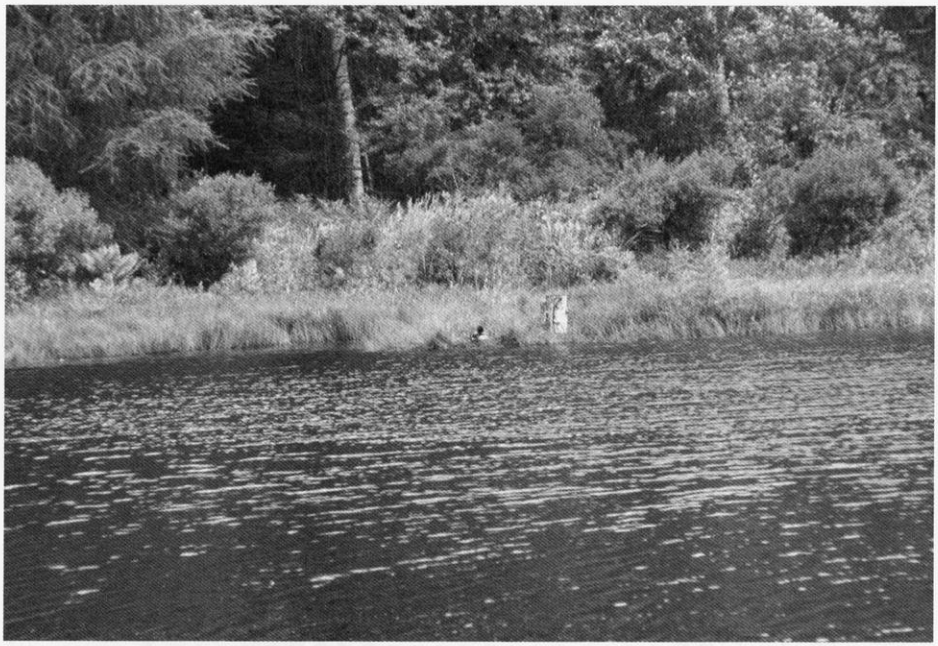

Figure 1. Camera in a PVC housing monitoring an active Common Loon nest. The PVC was designed to resemble a birch log.

cameras were set to the appropriate date and time, loaded with film and set to the proper configurations (15-second delay between photos and high-power mode) prior to approaching the nest. Next, the nest was evaluated from a distance for a place to set the camera, typically within 2–3m of the active nest. Selected nests were thought to be susceptible to predation because of high visibility or because they had been previously depredated. The nest-area was then approached and the incubator typically flushed from the nest. When possible, the investigator landed his boat several meters from the nest in order to allow a gentle flush.

Set-up consisted of finding a surface to place the camera on and clearing of vegetation that might trigger the camera. As the cameras are triggered by motion, focusing the camera directly on the nest was not an option, as the incubating loon would trigger the camera. Instead, the cameras were focused away from the nest and directed towards likely avenues a predator might take to access the nest and/or areas that a predator might use to consume the egg(s), such as game-trails, shorelines, clearings, or bottlenecks close to the nest. Thus, the cameras did not directly photograph the animals predating the nest, but recorded the species very near to the nest the same day/night as the nest was depredated.

Once the camera was placed, it was tested several times and locked closed. The investigator then left the area and waited to observe that the incubating loon had returned to the nest. The elapsed time, from flushing the incu-

bator to leaving the nest-area, was less than 10 minutes.

The nests were monitored weekly or more frequently. When the nest was determined to have failed, the camera was collected and the film was developed.

Camera placement at artificial nests—

Artificial loon nests were constructed on or near the locations where active nests had failed during the nesting season from 15 July–28 August 2003 and from 25 May–30 July 2004 (Table 2). (The cameras and camera housings were the same as described above.) Nest-bowls of previous nesters were used when possible, but often nests were constructed from available materials (vegetation, mud, etc.) in the vicinity of a predated nest (Figure 2).

Once constructed, 2–6 chicken eggs were placed in the nest bowl. In 2004, the eggs were dyed olive-green and marked with a permanent marker in order to mimic Common Loon egg-coloration. In July 2003 a loon decoy was placed within 1-foot of the eggs. The decoy was thought to provide a visual attraction to the nest, similar to an incubating loon. Later in 2003 and in 2004, the loon decoy was not used as it attracted humans to the nest and to the cameras. The camera was focused on the nest, so as to be triggered by any movement at the nest. Thus, the cameras directly photographed the animals predating each artificial nest.

Vegetation that might trigger the camera was then cleared. The camera was then tested several times and locked closed. The nests were monitored weekly and cameras were collected after the nest was depredated.

Results

Cameras were successfully placed at 23 active nests. Of these, 11 were predated and 6 nest-predators were conclusively identified. These included 5 raccoons and 1 Common Raven. In all, predation accounted for 79% (11/14) of nest failures at monitored nests. The remaining 21% (3/14) of failures were attributed to eggs being displaced from the nest-bowl by wave-action or by an incubating loon. One such failure at Trout Lake (Horseshoe Territory) occurred the same night as photographs of a raccoon at the nest. The eggs were not consumed and the nest was not considered predated. In total, 314 photographs were taken at active nests including 46 photographs of raccoons (Figure 3), 15 American Crows (*Corvus brachyrhynchos*), 2 Ravens, 1 Bald Eagle (*Haliaeetus leucocephalus*), 5 black bears (*Ursus americanus*), 1 red fox (*Vulpes vulpes*), 2 ducks (*Anas spp.*) and 15 humans. Most photographs, however, did not provide a direct link between predator and nest-predation, as many were recorded on a different day/night from the predation event or were recorded the same night as other predators. (E.g., in 2003, a camera near a loon nest at Patterson Lake recorded a raccoon, red fox, and black bear all on the same night.) Two rolls of film, one from a failed nest, were exposed and their results were not obtained.

Cameras were placed at 21 artificial nests. Ten nests were predated, yielding direct photographic evidence of 8

Table 2. Camera placements, nest status, and identified predators of artificial Common Loon nests in northern Wisconsin.

County	Lake Name	Territorial Pair ID	Date Placed	Date Collected	Nest Status	Predator
Oneida	Clear	Northeast Points	15-Jul-03	28-Jul-03	Removed	—
Oneida	Clear	Southwest Access	15-Jul-03	28-Jul-03	Predated	Raccoon
Oneida	Anvil	—	15-Jul-03	22-Jul-03	Predated	Raccoon
Oneida	Butternut	North	15-Jul-03	22-Jul-03	Removed	—
Vilas	Allequash	North	17-Jul-03	06-Aug-03	Predated	Unknown
Oneida	Butternut	South	22-Jul-03	07-Aug-03	Removed	—
Iron	Turtle Flambeau Flowage	Teal Bay	25-Jul-03	11-Aug-03	Predated	Raccoon
Iron	Turtle Flambeau Flowage	Grassy Island	25-Jul-03	11-Aug-03	Removed	—
Vilas	Trout	Haunted Islands	29-Jul-03	06-Aug-03	Predated	Raccoon
Vilas	Trout*	North Islands	29-Jul-03	06-Aug-03	Predated	Raccoon
Oneida	Clear*	Stingray	08-Aug-03	28-Aug-03	Removed	—
Oneida	Cunard*	—	15-Aug-03	28-Aug-03	Removed	—
Oneida	Carrol*	—	15-Aug-03	28-Aug-03	Removed, Eggs displaced	—
Vilas	Allequash*	North	15-Aug-03	28-Aug-03	Removed	—
Oneida	Minocqua*	Stack's Bay	25-May-04	28-May-04	Removed	—
Oneida	West Twin*	—	03-Jun-04	08-Jun-04	Predated	Raccoon
Oneida	Hildebrand*	—	24-Jun-04	26-Jul-04	Predated	Unknown
Oneida	Burrows*	—	24-Jun-04	07-Jul-04	Predated	Raccoon
Iron	Turtle Flambeau Flowage*	Swimmer's Island	01-Jul-04	14-Jul-04	Predated	Raccoon
Oneida	Bellmore*	—	08-Jul-04	26-Jul-04	Removed	—
Vilas	Trilby*	—	15-Jul-04	30-Jul-04	Removed	—

* Common Loon decoys were not placed at these artificial nests.

Figure 2. Camera monitoring an artificial Common Loon nest. The camera is inside a housing camouflaged with birch bark.

raccoon predations. Photographs of a mink (*Mustela vision*) and a raccoon at Carrol Lake are not considered predations, as the eggs were not eaten, only displaced. In total, 288 photographs were taken. This included 54 photographs of raccoons, 3 American Crows, 13 humans, 2 mink, 2 Canada Geese (*Branta canadensis*), 1 white-tailed deer (*Odocoileus virginianus*) (Figure 4), and 2 dogs (*Canis familiaris*). One roll of film from a failed nest was exposed and its results were not obtained.

In all, raccoons (Figure 5) represented 93% (13/14) and Common Ravens represented 7% (1/14) of the predators conclusively identified at predated active and artificial nests. For both years combined, raccoons predated a minimum of 62% (13/21) of all monitored active and artificial sites that were predated including a minimum of 46% (5/11) of monitored active nests that were predated and a minimum of 80% (8/10) of artificial nests that were predated. Common Ravens predated a minimum of 5% (1/21) of all monitored nests that were predated and predators were not identified at 33% (7/21) of all monitored nests that were predated.

Discussion

The PVC housings were beneficial in minimizing set-up time and disturbance to the incubating loons. In addition, initial photos of predators and humans indicate that they were unaware of the camera's presence, confirming the benefits of camouflage.

Negative aspects of the housing design center on size. On two occasions,

Figure 3. Raccoon at an active Common Loon nest.

Figure 4. White-tailed deer at active Common Loon nest.

Figure 5. Raccoon consuming a chicken egg at an artificial Common Loon nest.

incubating loons did not return to their nest after a camera was deployed, apparently disturbed by the camera. The camera was then removed or placed >8m from the nest. It is thus necessary to monitor all nests after camera placement to ensure adult loons return to incubate or to place the cameras before nesting when predictable nest sites are used. Large size of the housing also precluded placement at several locations due to a lack of substrate to place the camera upon (i.e., nests placed on hummocks or floating bog mat). In each case a smaller camera housing or a situation-specific design would be beneficial.

Camera-use yielded conclusive photographs of nest predators at 67% (14 of 21) of all predated active and artificial monitored nests and were most effective at artificial nests. The camera's inability to be focused directly on active nests and the requirement that vegetation be cleared from the infrared beam's path were significant drawbacks. Units able to focus on the nest, without being triggered by the incubating loon, would be desirable (e.g., video cameras). However, such units incur a higher cost and thus limit the number of units that can be deployed. Identifying nests that will be predated, and predicting when a nest will be predated, have proven difficult. Thus, deploying numerous units will likely lead to more photographs of nest-predators. However, when funds are available, we recommend use of video cameras focused on the nest to pro-

vide the best documentation of causes of loon nest failure.

We ceased use of loon decoys early in the study because they attracted humans to nest-sites and to cameras. One camera was removed due to tampering by humans. Additionally, photographic evidence indicates that raccoons may avoid decoys. Three nests with decoys were approached by raccoons but not predated, or were not predated immediately. Decoys may also deter other, more wary, species from predating nests such as red foxes and Bald Eagles.

Nest failure rates were high within the study area during 2002–2004 (>50%) (M. Meyer, WDNR, pers. comm.). It has been previously shown that use of floating artificial nest platforms can significantly increase loon nest success within this study area (Piper et al. 2002). This result implied that probable causes of nest failure could be water fluctuations, mammalian predation, or human disturbance. Our study suggests that mammalian predation may account for much of Common Loon nest-failure in northern Wisconsin. Specifically, it supports the hypothesis that raccoons are an important predator of Common Loon nests in the study-area. Predation by Common Raven was also recorded and anecdotal observations of nest predations by Bald Eagles and fishers (*Mustela pennanti*) have been documented during ongoing studies within our study area. These findings suggest that additional studies be conducted to consider management options that increase Common Loon nest success and investigate the impact of shoreline development on Common Loon nesting success in the region.

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Literature Cited

Andren, H. 1992. Corvid density and nest predation in relation to forest fragmentation: a landscape perspective. Ecology 73: 794–804.

Lindsay, A., S. Gillum, and M. Meyer. 2002. Influence of lakeshore development on breeding bird communities in a mixed northern forest. Biological Conservation 107: 1–11.

Piper, W. H., M. W. Meyer, M. Klich, K. B. Tischler, A. Dolsen. 2002. Floating platforms increase reproductive success of common loons. Biological Conservation 104: 199–203.

Schmidt, K. 2003. Nest Predation and Population Declines in Illinois Songbirds: a Case for Mesopredator Effects. Conservation Biology 17(4): 1141–1150.

Wisconsin Association of Lakes. 2002. Protecting Our Lakes and Shorelines, Talking Points. Wisconsin Association of Lakes, Inc.

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Lapland Longspur *by Gary Krogman*

American Robin at lunch *by David Kuecherer*

Wisconsin's Fossil Birds: Where Are They?

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In 1980, Robert West and John Dallman published an account of fossil vertebrate fauna in Wisconsin. Not a single bird species appeared in the publication. West and Dallman (1980) noted that many of the collecting techniques used by early investigators in Wisconsin "did not promote the discovery of remains of smaller vertebrates." Bones belonging to larger vertebrates such as mastodon and mammoth are much more noticeable than bird bones, both visually and in the functioning of machinery that hits them.

Recent paleontological techniques do promote the discovery of small mammal remains. These techniques include water screening through fine (1/16″) mesh in the field, and rewashing, separating and examining under magnification in the laboratory (see Rhodes 1984). The small mammal bones that are recovered are then identified, almost entirely by the teeth and jaws. Post-cranial bones are not used to identify the specimens or to determine the minimum number of individuals (MNI) present (Rhodes 1984). This reliance on teeth stems from the extreme similarity of the post-cranial bones within small mammal taxa. Teeth allow identification to the species level more accurately than the post-cranial bones.

Fossil avifaunas are reported from several states (Lundelius et al. 1983; Parmalee 1992). Despite recovery techniques which allow small and fragile bones to be removed and identified, and the presence of bird bones at paleontological sites in other states, Wisconsin still lacks a fossil avifauna.

In Wisconsin, geological deposits from the Mississippian to the Tertiary Periods, from roughly 360 to 1.8 million years ago, have been removed by erosion (Dott and Attig 2004). The first appearance of birds in the fossil record is during this time span in other parts of the world.

The late Pliocene epoch, about 2.5 to 2 million years ago, marks the appearance of most living taxa of birds (Emslie 1992). Many of today's bird species can be identified in the fossil record beginning in the late Pliocene but "often differed in size and relative limb proportions from Recent populations of the same species" (Emslie 1992).

The only fossil birds found in Wis-

consin, then, would have to date to the Pleistocene, or Ice Age, the period from 1.8 million to about 10,000 years ago (Dott and Attig 2004). During the Pleistocene, ice sheets advanced and retreated across Wisconsin several times, with the most recent advance named for the state and referred to in the literature as the Wisconsinan. The Wisconsinan stage began about 100,000 years ago (Dott and Attig 2004). The greatest effect on the state of Wisconsin occurred during a series of glacial advances and retreats about 25,000 to about 9,500 years ago (Clayton et al. 1992). By the late Pleistocene, most of the bird remains recovered "are osteologically indistinguishable from those of living taxa" (Parmalee 1992). There was also an episode of extinction of some bird species at the end of Pleistocene that is probably related to the extinction of large mammals such as mastodonts and mammoths at the same time (see Steadman and Martin 1984).

In glaciated parts of Wisconsin, deposits from the Pleistocene before the Wisconsinan advance have been entirely or partially removed by the action of the ice sheets that periodically covered parts of Wisconsin (Dott and Attig 2004). Occasionally large mammal bones and teeth have been recovered showing signs of abrasion from glacial materials (West and Dallman 1980), but no bird bones have been reported.

The oldest birds identified in Wisconsin so far come from the Raddatz Rockshelter in Sauk County, an important archeological site excavated by Warren L. Wittry. These bird bones were identified by Paul W. Parmalee, then of the Illinois State Museum (Parmalee 1959), and re-analyzed by Charles Cleland of Michigan State University (Cleland 1966). Cleland provides a breakdown of the animal species by level excavated. Based on Cleland's information, the oldest bird bones are found in level 15 at the site, which has a radiocarbon date of 9650 B.C. (Cleland 1966). Wittry believed that levels 13 and 14 dated from about 9000 B.C., but Cleland believed that the animal species present were "not indicative of the conifer forest which must have grown in this part of Wisconsin at 9000 B. C." and suggested a date of 5–6000 B.C. (Ibid.). However, the combinations of plant and animal species which existed in the Pleistocene have no modern counterparts (Graham and Lundelius 1984; Pielou 1991) and animals which today do not live in a coniferous forest habitat may well have done so during the late glacial or early post-glacial period (see discussion of the Hiscock site below).

Bird species found below level 15 at the Raddatz Rockshelter include Passenger Pigeon (*Ectopistes migratorius*) and Flicker (*Colaptes* sp.). Bird species represented in Level 15 include Passenger Pigeon, Ruffed Grouse (*Bonasa umbellus*), and two unidentified passerines. Bird species in Level 14 are Passenger Pigeon and Ruffed Grouse. The same two species are the only birds identified from level 13 (Cleland 1966).

Fossil bird bones are rare in states bordering Wisconsin. A distal end of a right ulna belonging to a Canada Goose (*Branta canadensis*) was found in a water trench dug in a peat deposit in St. Paul, Minnesota. Bones from the extinct bison, *Bison occidentalis,* and the modern bison, *Bison bison,* were also found in the trench from which the goose bone was taken. Based on

the associations and the condition of the bone, it is believed that the bone is Pleistocene in date (Wetmore 1958). There is also a femur in the collections of the Bell Museum of Natural History at the University of Minnesota that is assigned to the Giant Canada Goose (*Branta canadensis maxima*) based on the size of the femur (Hanson 1965). The provenience of the specimen is St. Paul and it is dark brown in color as is the ulna, which was noted by Wetmore (1958) as typical of specimens found in peat. Hanson (1965) believed that the femur came from the same skeleton as the ulna reported by Wetmore.

In Michigan, well-digging near Casnovia in Muskegon County led to the discovery of fossil wood, pollen and a fossil ulna from a Lesser Scaup (*Aythya affinis*). The ulna is complete except for the proximal end, which was probably broken when the material was pumped from the well. The wood and pollen are from coniferous trees, and the wood is radiocarbon-dated to 25,050 ± 700 BP. Since the fossil ulna came from the same level as the wood, it is believed to be the same age. This date marks an interstadial during the Wisconsinan glaciation (Holman 1976; Kapp 1978).

Bird eggshell fragments have been recovered from deposits dating between 16,710 ± 270 and 18,090 ± 190 BP in the Conklin Quarry in Johnson County, Iowa (Baker et al. 1986), and unidentified bird bones have been recovered from sites in Iowa dating to the Wisconsinan glaciation (Julie Golden, personal communication 1990).

Two records of Pleistocene bird bones from northern Illinois need to be checked to reconfirm their Pleistocene status, a Trumpeter Swan (*Cygnus buccinator*) from Aurora and a Common Merganser (*Mergus merganser*) from the North Shore Channel of Chicago (Holman 2001).

The history of fossil bird bones in the neighboring states would seem to indicate that serendipity is as good a way as any to discover fossil bird bones. Certain environments, though, are more likely to preserve bones (see West and Dallman 1980). These would include limestone caves, in which there is a basic environment and lower temperature and moisture fluctuations (Guthrie 1990). The fluctuation of water tables in limestone environments may also result in the formation of karst topography with caves and sinkholes which can be traps for unwary fauna. (Dott and Attig 2004; Guthrie 1990). While the environment of a limestone cave may be excellent for preserving bones, bird bones dating to the Pleistocene have not yet been discovered in any of the limestone caves or fissures studied in Wisconsin. Even in caves, bones must be covered by sediment for preservation to occur (Holman 2001).

Clay is also a good bone preservative, with numerous mammal specimens and some molluscs found in these environments (see Dallman 1968; West and Dallman 1980). Waterborn or waterlaid sediments will also bury a carcass quickly, increasing the chances of preservation. Several studies on the taphonomy of bird carcasses have demonstrated that unless the carcasses are quickly buried or protected in some way, they will be removed quickly by scavengers, even in shallow water environments (Lyman 1994). John Dallman (personal communication 1990) has expressed sur-

prise that no bones of aquatic birds have been recovered from some of the fossil-producing bogs in Wisconsin.

The southwestern part of Wisconsin, or Driftless Area, has never been glaciated (see Dott and Attig 2004 for an excellent summary). Deposits dating to the stages in the Pleistocene before the last, or Wisconsinan, glaciation, are preserved here. The Driftless Area also has fissures and caves in limestone in which many small mammals have been trapped—some of these deposits are quite old, as at Moscow Fissure in Iowa County, which has a radiocarbon date of 17,050 ± 1500 years BP (West and Dallman 1980). No bird bones have been found among the bones from Moscow Fissure, however (Richard Slaughter, personal communication).

The unique combinations of plant and animal species that mark Pleistocene communities are evident at Moscow Fissure. At this site in Iowa County, an accumulation of small mammal, reptile and amphibian bones is interpreted as the result of garter and fox snake predation during warm weather around a winter hibernaculum (Foley 1984). The species found at Moscow Fissure exist today, but nowhere do they all exist in the same region (Ibid.).

The Driftless Area has often been seen as a refuge in which plants and animals survived the Ice Age. Zimmerman (1991) has suggested that some of the "birds of the southern contingent" favor the southwestern part of the state, in part because of "the continuation of preglacial traditions." Recent work on chipmunk DNA has led researchers to suggest that "some chipmunks rode out the last ice age in a hospitable zone in Wisconsin and then moved south" (Perkins 2004).

During the Wisconsinian glaciation, the unglaciated parts of the state would have had a tundra vegetation with some stunted wood, and there would have been permafrost and proglacial lakes (Clayton et al. 1992; Péwé 1983; Knox 1982). As severe as this landscape might seem compared with modern conditions, it is hard to imagine that birds would be totally absent from it. After all, reptiles and amphibians lived here during the Wisconsinan (Foley 1984).

One often-cited explanation for the absence of bird bones is the fragility of bird bones. Noted ornithologists dispute that point. Pierce Brodkorb of the University of Florida believed that the collecting techniques of some paleontologists, aimed largely at teeth and jaws, biased the record against discovery of bird bones and could point to the abundant bird fossils from sites in Florida to prove his point (Campbell 1992). Storrs Olson (1985) also has pointed out that much of what we know about fossil mammals is based on the study of their teeth, and that fewer workers have studied fossil birds.

It is unlikely that Wisconsin was devoid of birds in the late Pleistocene. We just have not found them yet. When we do find them, there may be some interesting combinations of birds and vegetation.

To give an idea of how the Pleistocene avifauna of Wisconsin may have differed from today's birds, I like to consider the Pleistocene bird remains from the Hiscock site in Genesee County in western New York State. This site is remarkable in that two of the Pleistocene birds were identified by

feathers instead of bones. Two feathers identified as coming from the upper back or lower neck of a Baltimore Oriole (*Icterus galbula*) were found in a sediment sample radiocarbon dated to about 10,000 years ago (Steadman 1988). The vegetation near the site at that time was primarily coniferous, especially white pine (*Pinus strobus*) (Ibid.) Today we do not associate Baltimore Orioles with pine forests! Another feather was identified as belonging to a Pied-billed Grebe (*Podilymbus podiceps*). This feather came from a sediment sample about 11,000 years old (Steadman 1988).

The second remarkable thing about the Hiscock site is the presence of three bones of a California Condor (*Gymnogyps californianus*) (Steadman 1988). The bones (part of a humerus, a coracoid and a pedal phalanx) came from a stratum that dates to about 11,000 years ago, at a time when the vegetation around the site was a spruce-jack pine woodland (Steadman and Miller 1987). Other fossil bones from the California Condor come from warmer areas, but the Hiscock site shows that California Condor could survive in colder areas as long as the large mammal carcasses on which it fed were available (Ibid.). Steadman and Miller (1987) suggest that the California Condor suffered a drastic reduction in range at the end of the Pleistocene with the extinction of many large mammal species in North America.

Acknowledgments

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Literature Cited

Baker, Richard G., R. Sanders Rhodes II, Donald P. Schwert, Allan C. Ashworth, Terrence J. Frest, George R. Hallberg and Jan A. Janssens. 1986. A full-glacial biota from

southeastern Iowa, USA. Journal of Quaternary Science 1(2): 91–107.

Campbell, Kenneth E., Jr. 1992. Pierce Brodkorb: A Biographical Sketch. pp. xiii–xix *in* Papers in Avian Paleontology: Honoring Pierce Brodkorb, edited by Kenneth E. Campbell, Jr. Natural History Museum of Los Angeles County Science Series No. 36. Los Angeles.

Clayton, Lee, John W. Attig, David M.. Mickelson and Mark D. Johnson. 1992. Glaciation of Wisconsin. University of Wisconsin-Extension Educational Series 36.

Cleland, Charles Edward. 1966. The Prehistoric Animal Ecology and Ethnozoology of the Upper Great Lakes Region. University of Michigan Museum of Anthropology Anthropological Papers. No. 29. Ann Arbor.

Dallman, John. 1968. Mastodons in Dane County. Wisconsin Academy Review 15(2): 9–13.

Dott, Robert H., Jr. and John W. Attig. 2004. Roadside Geology of Wisconsin. Mountain Press Publishing Company. Missoula.

Emslie, Steven D. 1992. Two New Late Blancan Avifaunas from Florida and the Extinction of Wetland Birds in the Plio-Pleistocene. pp. 249–269 *in* Papers in Avian Paleontology: Honoring Pierce Brodkorb, edited by Kenneth E. Campbell, Jr. Natural History Museum of Los Angeles County Science Series No. 36. Los Angeles.

Foley, Robert Leroy. 1984. Late Pleistocene (Woodfordian) Vertebrates from the Driftless Area of Southwestern Wisconsin, The Moscow Fissure Local Fauna. Illinois State Museum Reports of Investigations No. 39. Springfield.

Graham, Russell W. and Ernest L. Lundelius, Jr. 1984. Coevolutionary Disequilibrium and Pleistocene Extinctions. pp. 213–249 *in* Quaternary Extinctions, edited by Paul S. Martin and Richard G. Klein. University of Arizona Press, Tucson.

Guthrie, R. Dale. 1990. Frozen Fauna of the Mammoth Steppe. University of Chicago Press. Chicago.

Hanson, Harold C. 1965. The Giant Canada Goose. Southern Illinois University Press. Carbondale.

Holman, J. Alan. 1976. A 25,000-year-old duck, more evidence for a Michigan Wisconsinan interstadial. American Midland Naturalist 96(2): 501–503.

Holman, J. Alan. 2001. In Quest of Great Lakes Ice Age Vertebrates. Michigan State University. East Lansing.

Kapp, Ronald O. 1978. Plant Remains from a Wisconsinan interstadial dated 25,000 B. P., Muskegon Co., Michigan. American Midland Naturalist 100(2): 506–509.

Knox, J. C. 1982. Quaternary History of the Kickapoo and Lower Wisconsin River Valleys, Wisconsin. pp. 1–65 *in* Quaternary History of the Driftless Area. University of Wisconsin-Extension Geological and Natural History Survey Field Trip Guide Book No. 5. Madison.

Lundelius, Ernest L., Jr., Russell W. Graham, Elaine Anderson, John Guilday, J. Alan Holman, David W. Steadman and S. David Webb. 1983. Terrestrial Vertebrate Faunas. pp 311–353 *in* Late Quaternary Environments of the United States, edited by H. E. Wright, Jr. vol. 1 The Late Pleistocene, edited by Stephen C. Porter. University of Minnesota Press, Minneapolis.

Lyman, R. Lee. 1994. Vertebrate Taphonomy. Cambridge University Press. Cambridge.

Olson, Storrs L. 1985. The Fossil Record in Birds. pp. 79–238 *in* Avian Biology vol. VIII, edited by Donald S. Farner, James R. King and Kenneth C. Parkes. Academic Press. Orlando.

Parmalee, Paul W. 1959. Animal remains from the Raddatz Rockshelter, Sk5, Wisconsin. Wisconsin Archeologist, new series 40(2): 83–90.

Parmalee, Paul W. 1992. A Late Pleistocene Avifauna from Northwestern Alabama. pp. 307–318 *in* Papers in Avian Paleontology: Honoring Pierce Brodkorb, edited by Kenneth E. Campbell, Jr. Natural History Museum of Los Angeles County Science Series No. 36. Los Angeles.

Péwé, Troy C. 1983. The Periglacial Environment in North America during Wisconsin Time. pp. 157–189 *in* Late Quaternary Environments of the United States, edited by H. E. Wright, Jr. University of Minnesota Press. Minneapolis.

Perkins, Sid. 2004. Chipmunks in Wisconsin toughed out ice age. Science News 166(4): 62.

Pielou, E. G. 1991. After the Ice Age. University of Chicago Press. Chicago.

Rhodes, R. Sanders II. 1984. Paleoecology and Regional Paleoclimatic Implications of the Farmdalian Craigmile and Woodfordian Waubonsie Mammalian Local Faunas, Southwestern Iowa. Illinois State Museum Reports of Investigations, No. 40. Springfield.

Steadman, David W. 1988. Vertebrates from the Late Quaternary Hiscock Site, Genesee County, New York. Pp. 95–113 *in* Late Pleistocene and Early Holocene Paleoecology and Archeology of the Eastern Great Lakes Region, edited by R. S. Laub, N. G. Miller and D. W. Steadman. Bulletin of the Buffalo Society of Natural Sciences vol. 33.

Steadman, David W. and Paul S. Martin. 1984. Extinction of Birds in the Late Pleistocene of

North America. pp. 466–477 *in* Quaternary Extinctions, edited by Paul S. Martin and Richard G. Klein. University of Arizona Press. Tuscon.

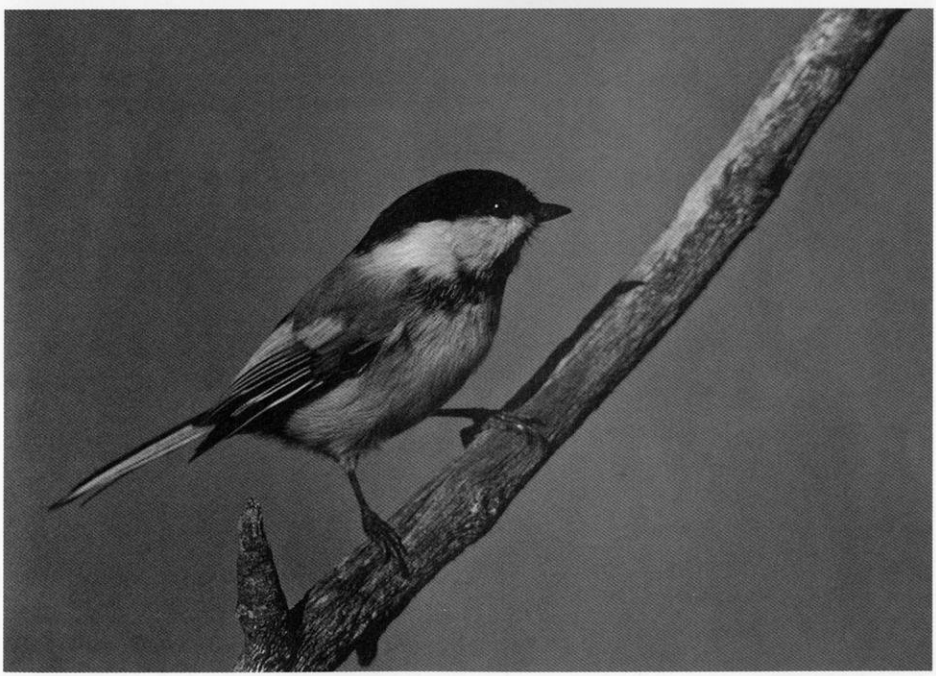
Steadman, David W. and Norton G. Miller. 1987. California Condor associated with spruce-jack pine woodland in the Late Pleistocene of New York. Quaternary Research 28: 415–426.

West, Robert M. and John E. Dallman. 1980. Late Pleistocene and Holocene Vertebrate Fossil Record of Wisconsin. Geoscience Wisconsin 4: 25–45.

Wetmore, Alexander. 1958. Miscellaneous notes on fossil birds. Smithsonian Miscellaneous Collections 135(8): 1–11.

Zimmerman, James Hall. 1991. The Landscape and the Birds. pp. 35–90 *in* Wisconsin Birdlife: Population and Distribution by Samuel D. Robbins, Jr. University of Wisconsin Press. Madison.

Janet Speth is an archeologist who has always liked birds. She has worked on bird bones from Native American sites and has handled Passenger Pigeon and Ivory-billed Woodpecker bones—poor substitutes for the living creatures, though.



Black-capped Chickadee *by Dennis Malueg*

Purple Finch *by Dennis Malueg*

Observations of Uncommon Raptors at Chequamegon Bay Hawkwatch, 1999–2004

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ABSTRACT

Chequamegon Bay Hawkwatch (CBH) is a spring raptor migration survey conducted annually at the Northern Great Lakes Visitor Center, near Ashland, Wisconsin. In its six-year history (1999–2004), CBH has tallied 27,978 raptors of 17 species. Among these are 132 Golden Eagles, 43 rufous/dark morph "Western" Red-tailed Hawks, one "Harlan's" Red-tailed Hawk, eight Swainson's Hawks, seven Red-shouldered Hawks, and one Gyrfalcon. Thus, in addition to hosting one of the greatest known concentrations of raptors in Wisconsin, CBH also ranks among the best places in the state to observe such specialties as Golden Eagle, rufous/dark morph Red-tailed Hawk, and Swainson's Hawk.

INTRODUCTION

Winters are harsh and spring arrives late in northern Wisconsin, so sunshine and 40 degrees feels relatively warm in mid-March. And although the ice on Chequamegon Bay still prevails, lengthening daylight hours lend promise of a greener landscape and the return of millions of birds from their southern wintering grounds.

On 13 March 1999, such weather and hope prompted me for the first time to the observation tower at the Northern Great Lakes Visitor Center (NGLVC) near Ashland. In previous years, as a student at Northland College, I casually noted fair numbers of migrating raptors concentrated along Ashland's south shore of Lake Superior. No accessible sites provided an adequately elevated or unobstructed view, however, and thus my observations remained just that—casual. But that all changed in 1999 with construction of the NGLVC and its 58-foot observation tower at the southwestern tip of Chequamegon Bay.

Eager to initiate a pilot hawk count, I climbed up the tower staircase that mid-March day with cautious excitement. I had no idea what to expect or if such a survey would be at all fruitful. So I set up my spotting scope, had data sheets ready, and started scanning the big blue skies for specks that might prove to be raptors. Within ten minutes, I found my first raptor, a large, dark bird soaring off to the

Figure 1. Chequamegon Bay Hawkwatch is conducted from the 58-foot observation tower at the Northern Great Lakes Visitor Center near Ashland, Wisconsin. Photo courtesy of NGLVC staff.

southeast. As it set its wings and glided low right over the tower, I could hardly believe my eyes—an adult Golden Eagle (*Aquila chrysaetos*). Given that few Golden Eagles had been observed previously in the region and noted Ashland birder Dick Verch had seen *none* in over 25 years of birding the bay area, any doubts about the count's potential value were very quickly laid to rest. A few more hours of hawkwatching that day proved far less exciting with only a handful of Bald Eagles (*Haliaeetus leucocephalus*) and Red-tailed Hawks (*Buteo jamaicensis*) passing by, but I left in high spirits nonetheless.

That was day one for Chequamegon Bay Hawkwatch (CBH), an annual spring raptor migration survey conducted at the NGLVC for the past six years (1999–2004). CBH has provided great insight into raptor migration in northern Wisconsin (Brady 1999, Brady 2000) while simultaneously educating thousands of visitors about raptor biology, research, and conservation. In the long term, CBH aims, in part, to help monitor raptor populations in central North America. More immediately, CBH continues to document the diversity, abundance, phenology, and behavior of raptors migrating through the Chequamegon Bay region. Over the years, observers at CBH have detected a variety of uncommon and rare birds, like the Golden Eagle that started it all back in 1999. In this article, I describe and summarize the most interesting of these unusual observations.

Methods

Chequamegon Bay Hawkwatch operates annually during the spring months, and all counts are made from the observation tower at the Northern Great Lakes Visitor Center (Figure 1) in Bayfield County, approximately 2.5

miles west of Ashland near U.S. Highway 2. Surveys generally are conducted four to six hours per day from 1 March to 31 May, weather permitting. One or two observers conduct each survey by scanning the sky with unaided eyes and 8–10x binoculars and using spotting scopes to identify distant birds and assess individual plumage details. For details on methodology, see Brady (2000).

Results and Discussion

From 1999–2004, Chequamegon Bay Hawkwatch (CBH) tallied 27,978 migrating raptors of 17 species, although annual counts typically produced 3,500–5,500 individuals of 15-16 species (Table 1). Counts were dominated by Broad-winged Hawks (*Buteo platypterus*; 1,597 per year), Red-tailed Hawks (1,097 per year), and Bald Eagles (653 per year), with decent numbers of Turkey Vultures (*Cathartes aura*; 453 per year) and Sharp-shinned Hawks (*Accipiter striatus*; 439 per year). Rough-legged Hawks (*Buteo lagopus*) and Ospreys (*Pandion haliaetus*) also occurred in smaller yet significant numbers (124 and 58 per year, respectively).

In addition to these relatively common raptors were a variety of species and subspecies that deserve special mention because they are seen infrequently throughout the state and/or were somewhat out of range. These uncommon raptors and the nature of their occurrence at CBH are described in the following accounts:

Golden Eagle—

CBH detected 132 Golden Eagles over the six-year span, including an

Table 1. Summary of annual spring migration counts at Chequamegon Bay Hawkwatch, 1999–2004.

Species	1999	2000	2001	2002	2003	2004
Turkey Vulture	132	338	699	567	560	422
Osprey	20	72	59	34	56	105
Bald Eagle	365	597	678	830	622	826
Northern Harrier	11	29	61	37	52	44
Sharp-shinned Hawk	235	722	350	315	398	614
Cooper's Hawk	18	19	17	4	5	17
Northern Goshawk	0	6	13	14	9	20
Red-shouldered Hawk	1	1	0	1	1	3
Broad-winged Hawk	860	3,123	1,065	1,062	2,072	1,403
Swainson's Hawk	2	2	1	1	1	1
Red-tailed Hawk	1,373	1,402	678	405	1,351	1,373
Rough-legged Hawk	83	203	121	66	106	165
Golden Eagle	6	24	13	25	17	47
American Kestrel	4	50	45	50	48	32
Merlin	5	17	7	7	5	26
Gyrfalcon	0	1	0	0	0	0
Peregrine Falcon	1	8	1	0	0	8
Unidentified Raptor	125	139	124	92	79	54
TOTAL	3,241	6,753	3,932	3,510	5,382	5,160
Observation hours	127.0	321.0	271.0	193.0	258.5	363.25
Raptors per obs hour	25.5	21.0	14.5	18.2	20.8	14.2

Figure 2. Golden Eagles with contrastingly pale upper wing covert bars and white at the base of tail are sub-adults. Photo by Ryan Brady.

impressive flight of 47 in spring 2004 (Table 1). Based on plumage characteristics (Wheeler 2003a), 36 of 132 (27.3%) were aged as adults, 14 (10.6%) as sub-adults (Figure 2), 28 (21.2%) as juveniles (Figure 3), and 54 (40.9%) as unknown age. Most of the unknowns were aged as "not juvenile" because it can be difficult to differentiate adults and sub-adults without good views, especially of a bird's dorsal side. Juveniles, on the other hand, can be identified rather easily under most conditions. With this bias in mind, these data suggest the majority of Golden Eagles migrating around Chequamegon Bay during spring are adults and/or sub-adults.

Overall, the earliest Golden Eagle was detected on 22 February 2002 and the latest on 11 May 2004. Each year, adults were the first to pass through, normally reaching CBH in late February or early March and continuing through early to mid-April. Sub-adults arrived somewhat later, usually around mid-March, and persisted until mid- to late April. The latest mi-

Figure 3. A juvenile Golden Eagle overhead at Chequamegon Bay Hawkwatch. Photo by Ryan Brady.

grants were juveniles, which typically did not appear until late March or early April but continued to migrate through the region as late as early to mid-May. Peak migration times were not obvious for any age class as birds passed rather evenly throughout their respective flight periods. Collectively, however, the last two weeks of March and the first week of April were the best times to observe Golden Eagles at CBH.

Golden Eagles are considered very uncommon to rare throughout the eastern United States (Wheeler 2003b) and a rare spring migrant in Wisconsin (Robbins 1991). In his 1991 book *Wisconsin Birdlife*, Robbins asserts that "records are too scanty to allow us to speak of a 'spring flight.'" CBH now provides unequivocal proof of an annual and often substantial spring flight along Wisconsin's south shore of Lake Superior.

Elsewhere in the state, Golden Eagles are casually reported in small numbers during both migrations and in winter. All of Wisconsin's other regular hawkwatch sites monitor autumn migration and these include Eagle Valley Nature Preserve (EVNP) in Grant County, Cedar Grove Ornithological Station (CGOS) in Sheboygan County, Little Suamico Ornithological Station (LSOS) in Oconto County, and Concordia Hawkwatch (CH) in Ozaukee County. CGOS observed a total of nine Golden Eagles from 1993 to 2003 (Mueller et al. 2004), while CH averages only one individual each year (B. Cowart, pers. comm.). EVNP tallied an impressive 127 Golden Eagles during their six years of standardized autumn counts between 1994 and 2002 (B. Mandernack, pers. comm.). EVNP also conducts opportunistic counts during the spring of some years and they regularly record small numbers of Golden Eagles among thousands of Bald Eagles. About 70 miles west of CBH at the western tip of Lake Superior, West Skyline Hawk Count (WSHC) in Duluth, Minnesota, has become one of the nation's premier spring hawkwatching sites. WSHC averaged 74 Golden Eagles each spring from 1999–2004, including a site record of 127 in 2004 (F. Nicoletti, pers. comm.). Data from LSOS unfortunately were not available.

"Western" Red-tailed Hawk—

CBH observers identified 43 Red-tailed Hawks as rufous or dark morphs of the "Western" subspecies, *B.j. calurus*. Yearly totals included seven in 1999, 10 in 2000, six in 2001, one in 2002, one in 2003, and 18 in 2004. Low numbers from 2001 through 2003 likely were related, at least in part, to the observers' lack of familiarity with these morphs. Overall, "Western" Red-tails comprised only 0.7% of all Red-tails detected (Table 1). Thirty-one of 43 (72.1%) were adults, five (11.6%) were immatures, and seven (16.3%) were of unknown age. Adults appeared as early as 17 March 2001 and as late as 30 April 2004 but primarily migrated through the region in the first half of April. Immatures were observed from late April to mid-May.

Nine of 43 individuals (20.9%) were rufous morph (Figure 4), one (2.3%) was dark morph, and 33 (76.7%) were either rufous or dark morph. Poor lighting and distant viewing conditions often precluded specific morph identification, which is further con-

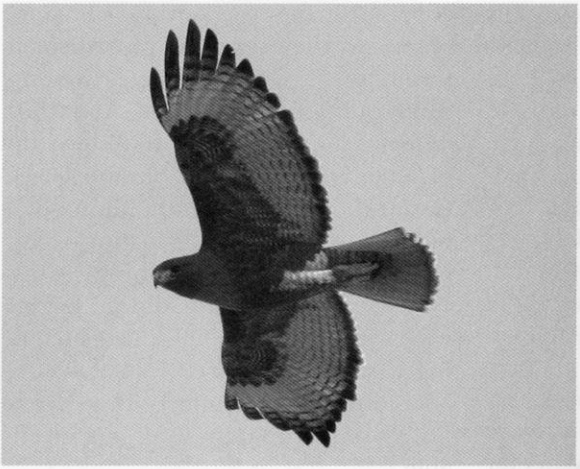

Figure 4. From 1999–2004, observers tallied 43 "Western" Red-tailed Hawks, including at least eight individuals like this adult rufous morph. Photo by Ryan Brady.

founded by a continuum of polymorphism in this subspecies (Wheeler 2003a). We made no attempt to distinguish between light morphs of *B.j. borealis* ("Eastern" Red-tailed Hawk) and *B.j. calurus* because of significant identification constraints (see Wheeler 2003b), although light morph *calurus* likely migrate through Wisconsin just as rufous and dark morphs do, as shown by multiple captures at LSOS (Brinker and Erdman 1985).

Rufous and dark morph Red-tailed Hawks are infrequently observed in Wisconsin. Such birds are encountered only occasionally away from known concentration points during migration. Others may be overlooked soon after observers identify individuals to the species level. Confusion with dark morph Rough-legged Hawks also may be problematic. Nonetheless, two to five rufous/dark morph "Western" Red-tails are seen each fall along southern Lake Michigan at CH (B. Cowart, pers. comm.), and "dark" Red-tails have been reported throughout Wisconsin in late fall and early winter (Robbins 1991). Rufous/dark Red-tails are uncommon at LSOS (Brinker and Erdman 1985), but EVNP observed no fewer than 24 dark/rufous morphs in 1995, 59 in 1996, 20 in 1998, and 37 in 2000 (B. Mandernack, pers. comm.). WSHC tallies approximately 60 individuals each spring among an average annual total of 6,439 Red-tails.

"Harlan's" Red-tailed Hawk—

CBH observers documented one "Harlan's" Red-tailed Hawk (*B.j. harlani*) on 14 April 2004. The bird was an adult dark intermediate morph (Wheeler 2003a) that appeared very similar to the bird in Figure 5 but had less extensive white mottling on the breast.

"Harlan's" Red-tailed Hawks breed sparsely in interior Alaska, the Yukon Territory, and northern British Columbia (Wheeler 2003a). They winter throughout the western U.S. but the core winter range lies in the southern Great Plains east to the Mississippi River (Wheeler 2003a). CH has tallied two Harlan's in their past 18 years of

Figure 5. From below, adult dark morph "Harlan's" Red-tailed Hawks are characterized by dark under wing coverts, silvery flight feathers, a dark body often with whitish mottling on the breast, and typically a grayish-white tail with a smudgy, dark sub-terminal or terminal band. Photo by Ryan Brady.

autumn hawkwatching (B. Cowart, pers. comm.), while LSOS banded a Harlan's in 1984 (Brinker and Erdman 1985). EVNP observed one to four Harlan's each count year from 1994 and 2002 (B. Mandernack, pers. comm.), and a handful of individuals are seen each spring among the thousands of Red-tails at WSHC. Although certainly very uncommon to rare in much of Wisconsin, closer attention to all Red-tailed Hawks and dark morph "Rough-legged Hawks" may produce more sightings.

Swainson's Hawk—

Observers have tallied eight Swainson's Hawks (*Buteo swainsoni*) at CBH, including two in 1999 and 2000 and one each year from 2001–2004 (Table 1; Figure 6). Five of 8 (62.5%) were adults and three (37.5%) were of unknown age. Three (37.5%) were light morphs, three (37.5%) were rufous ("intermediate") morphs, and two (25.0%) were unknown. The earliest sighting was 23 April in both 2002 and 2004 and the latest was 20 May 2003, with most observations occurring in the first half of May.

Swainson's Hawks are a rare migrant and summer visitor in Wisconsin (Robbins 1991). They typically breed west of the Mississippi River to the Pacific coast in the U.S. and southern Canada (Wheeler 2003a). The species is highly migratory as virtually the entire population winters in northern and central Argentina in South America (Wheeler 2003a). As long-distance migrants, Swainson's Hawks are prone to vagrancy, and they are seen as far east as the eastern Great Lakes in spring and the Atlantic coast in fall. In Wisconsin, casual observations are occasional from April through Septem-

Figure 6. Swainson's Hawks, such as this adult light morph, are annual spring visitors to Chequamegon Bay Hawkwatch. Photo by Ryan Brady.

ber, especially in the western part of the state (Robbins 1991). Sightings are few and irregular at both CGOS and CH in autumn. CGOS observed only one individual from 1993 to 2003 (Mueller et al. 2004), while CH averages one individual every other year (B. Cowart, pers. comm.). EVNP has tallied two Swainson's Hawks during its fall counts, while WSHC typically observes three to four individuals each spring (F. Nicoletti, pers. comm.).

Red-shouldered Hawk—

Although not rare throughout much of the state, Red-shouldered Hawks (*Buteo lineatus*) are at their northern range limit in northern Wisconsin with relatively few records each year in those counties bordering Lake Superior. CBH observers tallied seven Red-shouldereds from 1999–2004, including three in 2004 (Table 1). All were of the expected "Eastern" subspecies *B.l. lineatus*. Three of seven (42.9%) were adults and the other four (57.1%) were immatures. Adults occurred on 4 April 1999, 12 April 2002, and 23 March 2003, while the immatures occurred on 11 March 2000, 2 April 2004, 9 April 2004, and 20 April 2004.

Red-shouldereds at CBH may represent northbound migrants en route to isolated breeding areas in northern Wisconsin and north-central Minnesota. Alternatively, some spring migrants may "overshoot" intended breeding areas in more southerly parts of Wisconsin. Immature birds also might wander out of range without breeding in their first full summer. Nonetheless, sightings at CBH are not without precedent as WSCH regularly tallies three to four Red-shouldered Hawks each spring.

Gyrfalcon—

CBH has hosted only one Gyrfalcon (*Falco rusticolus*) in its six-year history, an immature gray morph on 26 March 2000 (Figure 7). Gyrfalcons are rare but regular winter visitors to the northern United States, including Wisconsin. The species breeds in Arctic areas throughout North America and most remain there year-round,

Figure 7. Immature gray morph Gyrfalcon soaring over the Northern Great Lakes Visitor Center, 26 March 2000. Photo by Ryan Brady.

even during the harshness of winter (Wheeler 2003b). Records for Wisconsin are geographically scattered across the state with most occurring from late November to early April (Robbins 1991). One to several individuals show up in most winters but observations at raptor migration count sites are relatively unusual. CH has tallied six Gyrfalcons in the past 18 autumns (B. Cowart, pers. comm.), while WSHC has observed only two spring migrants since 1997 (F. Nicoletti, pers. comm.). EVNP has no confirmed records (B. Mandernack , pers. comm.).

Conclusion

Chequamegon Bay Hawkwatch is relatively new among hawkwatch sites in North America. In short time, however, CBH has established itself as one of Wisconsin's premier sites for viewing raptor migration. In addition to hosting excellent concentrations of many common raptors, such as Bald Eagle, Red-tailed Hawk, and Broad-winged Hawk, CBH also features a variety of raptors that are relatively uncommon in Wisconsin. In fact, CBH is among the best places in the state to spot such specialties as Golden Eagle, rufous/dark morph Red-tailed Hawk, and Swainson's Hawk. Sightings of these and other unusual raptors will undoubtedly continue in the years ahead but only time can tell which raptorial rarity will show up next. I can only hope it's as exciting as that first Golden Eagle.

Acknowledgments

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Literature Cited

Brady, R. 1999. Spring hawk watching on Chequamegon Bay, Lake Superior. Passenger Pigeon 61: 389–394.

Brady, R. 2000. Chequamegon Bay raptor migration: A summary of the spring 2000 Season. Passenger Pigeon 62: 239–250.

Brinker, D. F., and T. C. Erdman. 1985. Characteristics of autumn red-tailed hawk migration through Wisconsin. Pages 107–136 *in* M. Harwood [ed.]. Proceedings of hawk migration conference IV. Hawk Migration Association of North America. Rochester, New York, 24–27 March 1983.

Mueller, H. C., N. S. Mueller, D. D. Berger, J. L. Kaspar, and J. Bowers. 2004. The autumn of 2003 at Cedar Grove. Passenger Pigeon 66: 125–128.

Robbins, S. D. 1991. Wisconsin birdlife: population & distribution, past & present. The University of Wisconsin Press, Madison, Wisconsin.

Wheeler, B. K. 2003a. Raptors of western North America. Princeton University Press, Princeton, New Jersey.

Wheeler, B. K. 2003b. Raptors of eastern North America. Princeton University Press, Princeton, New Jersey.

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50 Years Ago in *The Passenger Pigeon*

Schorger discussed the American White Pelican in early Wisconsin in this issue. The species was first observed in Wisconsin by famed adventurer Pierre Radisson in about 1655. Dablon and Allouez also described them on the Fox River near Kaukauna in 1670. Their presence in Wisconsin was noted by Schoolcraft and Kearney in 1820, Featherstonhaugh in 1835, Lapham in 1844, and Barry in 1845. The number of migrants declined sharply by about 1870, and although there were many records from this date to 1900, the species was considered a rarity. Kumlien and Hollister (1903) noted that "it was rapidly becoming one of the rarer birds," and Schorger stated that "it is still found in the state though its occurrence is erratic."

"The pelican was an early migrant, occasionally appearing in March. The spring dates run from 9 March to 7 May, with the main migration taking place the last half of April. The fall dates run from 4 September to 8 November, the majority being for the last half of September." Schorger noted that nearly all the data prior to 1900 are based on birds that were shot.

Although Kumlien and Hollister stated that the species formerly nested in numbers in the western part of the state, Schorger, based on best available information and sound reasoning, concluded that "Until better information is available, the white pelican cannot be considered as a formerly breeding species in Wisconsin."

Of course this all changed during the period of Wisconsin Breeding Bird Atlas field work when Tom Erdman found pelicans nesting in Brown County on an island in Green Bay, and although the nests failed, a successful attempt followed the next year. Pelicans began to breed at Horicon National Wildlife Refuge in 2000. What will the next 50 years bring for this species in Wisconsin? (Excerpts from Vol. 16 (4), 1954)

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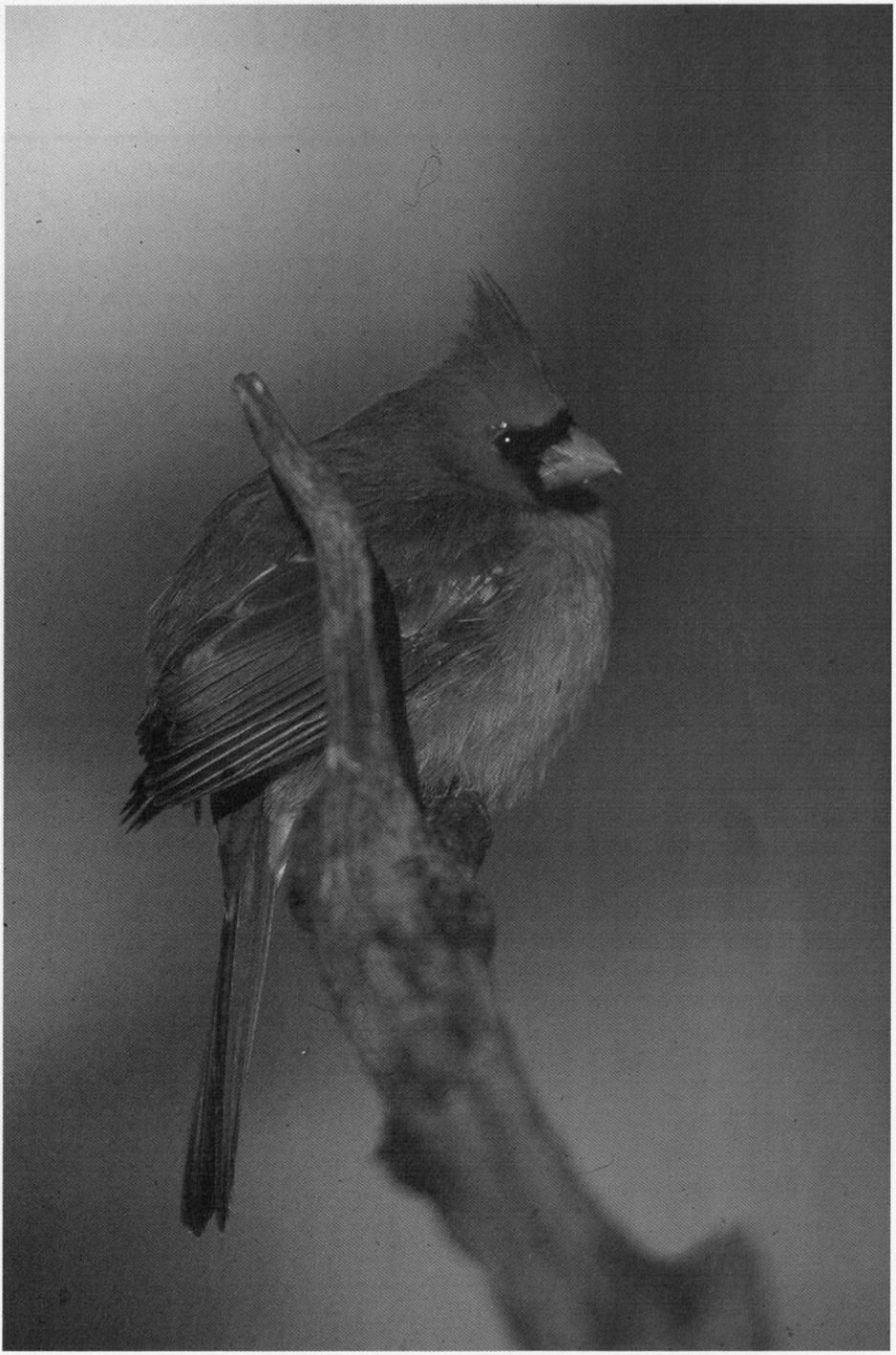

Northern Cardinal *by Jack Bartholmai*

"From Field and Feeder"

Observations of unusual occurrences and/or interesting behaviors for American Woodcock, Northern Bobwhite, and Hooded Merganser, plus an experiment on winter feeding of oranges.

Woodcock Nest

June–July, 2004, La Crosse County— On 16 June 2004 we discovered an American Woodcock (*Scolopax minor*) nest on our farm, inadvertently flushing the bird from three eggs while we were cleaning up fallen branches from a woodland edge trail. Gary was using a chainsaw and dropped a very small tree within 18 inches of the bird before she flushed, revealing the nest. In spite of the noise and physical activity in her immediate vicinity, she remained committed to her nest until the falling tree struck the ground. He removed the tree, his equipment, and himself from the vicinity as quickly as possible. On the morning of 19 June we walked the trail together; stopping 8 feet from the nest, we were able to view the incubating bird back on the nest. We left quickly without flushing her.

Both *A Guide to the Nests, Eggs, and Nestlings of North American Birds* by Baicich and Harrison (1997), and the Wisconsin Breeding Bird Atlas Handbook suggest that this is a late nesting. Since American Woodcocks more typically lay 4 eggs and are single-brooded, we assume this very wet spring or some other factor had caused this female to re-nest, resulting in the late egg date.

We continued to monitor our Woodcock nest by visiting the site every other day. We were able to locate the nest and brooding Woodcock from 8–12 feet away through binoculars without flushing her. Sometimes it took several minutes of scanning before we could confirm her presence by seeing her eye, or beak, or the pattern of breast feathers. Woodcock camouflage and nest placement are very impressive (Fig. 1)! On 30 June the female was still on the nest. Finally, on 2 July, she was gone along with her new family. Our best guess, based on the dryness of the empty egg shells, is that hatching occurred on 1 July. Each egg shell left behind was evenly opened and in place in the nest without any apparent disturbance that a predator would have generated (Fig. 2).—*Gary and Jean Ruhser, rural Holmen, La Crosse County, WI.*

Figure 1. American Woodcock nest.

Winter Northern Bobwhite Behavior (*Colinus virginianus*)

28 December 2003–April 2004, Marquette County—Two days after the Marquette County Christmas Bird Count they arrived: 10 Northern Bobwhites; five cocks and five hens marching in single file across the backyard toward the feeders, looking so much like secret service agents as they nervously glanced here and there, up and down trying to detect if some type of mischief might befall them if they didn't stay close together.

During the 25-yard march to the feeder, the leader would suddenly stop and the rest would pile into one another like a car-wreck on a foggy California freeway. Some would rapidly run back toward the large brushpile whence they came and others would sit "frozen" until the leader would venture forth once more. On his signal, those that were behind him would thaw from their stationery positions and follow, while those that retreated to the brushpile would rush to catch up to the covey.

It was December 28th when they first came to feeders and the ground was still bare of snowcover. For the next month, they would come on cue

Figure 2. Woodcock nest with hatched eggs.

each morning at sunrise, scratching at the feed that was spilled on the ground by Blue Jays and woodpeckers. The rest of their day was spent foraging around the outbuildings and weedy field behind the house and lounging in the sun on the south side of the brushpile.

The brushpile in question was created by me in December from limbs trimmed from some large maples in the front yard. It was about 40 feet in length, 10 feet in depth and 3 feet high. On January 8th, I added to the top of the pile with pine boughs to give the birds more protection from wind and cold nights.

According to *A Natural History of American Birds of Eastern and Central North America,* winter cover, especially brushpiles, is crucial to Northern Bobwhite survival. The book's author, Edward Howe Forbush, states the following: "He who wishes to increase the number of the species should provide them with food and shelter in winter. For this purpose high brush piles should be built . . . the brush allows the sun and wind to enter the pile and makes a refuge into which the birds can creep. The brush must be strong so that no layer of heavy snow can crush it down. Probably no better feeding place and shelter than this can be devised."

On January 23rd, we received the

first significant snowfall of winter, about 4.5 inches. The following day, none of the birds came to the feeder and I feared they may have perished in the storm. To my delight, however, they came bright and early on the 25th and returned in the evening for more feed before retiring to the brushpile for the night. This was the first time in almost a month, that I observed the birds coming to the feeder in the evening.

The following evening, we received an additional 3 inches of snow, completely covering the top of the brushpile. I did not see them on the 26th and 27th and was sure they had moved on. Finally, on the 28th, I walked out to the brushpile, and to my consternation saw only weasel tracks. I assumed the weasel had rousted them out of the brushpile and they were now elsewhere. However, at 2:00 p.m. all 10 came marching out of the pile to the feeders and fed heavily. I was amazed that those small birds could survive three days without eating.

The next morning they were there at sunrise and although the following morning, January 30th, the temperature was 17° below zero F, they arrived at sunrise which they did every morning for the next week. With the snow now too deep for them to walk, they would fly from the brushpile to the feeder and back. At no time had they foraged or strayed from the brushpile since the snowcover.

On Feburay 6th nine more inches of wet snow fell, completely covering the brushpile and all the entrances. I took my shovel and cleared the two openings that the quail were using to enter and exit the bruspile, but none showed up even when the sun came out later in the day. By now, I was quite used to this behavior the covey displayed of sitting tight a day or two following a storm.

Gene Woehler, a retired Wisconsin Department of Natural Resources wildlife biologist states: "That behavior (diminished activity during cold or snowy periods) is quite normal. They will stay bunched together only coming out when they are quite hungry or the temperatures warm. Other species as the Ring-necked Pheasant, cottontail rabbits, and squirrels also remain relatively inactive during cold spells."

This type of behavior doesn't seem restricted to bobwhites. Ty Baumann, naturalist at the Bay Beach Wildlife Sanctuary in Green Bay, WI., said, "I have observed similar behavior in grouse, Gray Partridge, pheasants, and waterfowl. They conserve energy during bad weather by remaining relatively inactive."

For the following four weeks, the bobwhites spent their entire lives between the brushpile and bird feeders. They would acquire grit by scratching at the bare ground under the brushpile and water from the melting snow on the south side. During all that time, however, they remained extremely wary, retreating into the brushpile long before the resident Cooper's Hawk would appear. They were also very intolerant of humans, flushing at the slightest movement in front of the window.

As February grew into March, the bare patches of ground became larger with the lengthening days and warming temperatures. On March 4th an overnight of mild temperatures cleared most of the snow and bobwhites decided it was time to forage afield. Ignoring the feeders completely, the 10 little birds walked, ran,

and then flew to the open fields to the north. After all those months cooped up in the brushpile, it seemed they were ready to exercise their freedom.

The next morning, March 5th, they returned, but only nine of them came to the feeder. One of the hens was missing. As if somehow realizing the dangers away from their secure home, the other nine stayed in the brushpile another month, foraging only at the feeder and around the yard.

It is obvious that the brushpile not only offered shelter in the winter, but was also good protective cover from predators in the spring. Forbush's comments concerning the building of brushpiles for bobwhites seemed well-founded.

In April, they began once again to forage afield. There was much calling by the five males as they vied for the remaining four hens. Throughout May and June, a few would come back down to the feeding areas to scratch at the fresh feed.

I hope they bring their chicks back with them this fall.—*Daryl Christensen, Marquette County, WI.*

Winter Oranges

Fall 2003–Winter 2004, Ozaukee County—Each spring around late April–early May we start putting out oranges and then later grape jelly. We do this, for the most part, to feed Baltimore, and sometimes Orchard, Orioles. Sometimes we will get other species to feed on them as well, such as Red-bellied Woodpeckers, Gray Catbirds, House Finches, and maybe a few others. My idea was to put out oranges not just during the spring and summer, but to put them out into fall and even during winter. So as the 2003 summer ended, I kept putting out the oranges.

First it started out kind of slow. I think one reason is because the birds were not used to having an orange still around at that time of year. However, once the birds found them, they kept on eating them. With orioles and catbirds gone, it was mostly the Red-bellied Woodpeckers that would eat them. The House Finches also would still eat them. If snow got onto the top of the oranges, I would be able to just brush them off, and for the most part the birds would keep feeding on them. If the oranges would get frozen inside (the pulp), at that point I would put out a new one.

Overall the birds kept on eating them all of the winter. Then, of course, they kept on eating them going into the spring. I don't know if eating oranges during the winter is bad or good for the birds. However, I found it interesting that they still would eat them. This was just my own personal experiment, and it seemed to work out well. I plan on trying it again this winter as well.—*Seth Cutright, Ozaukee County near Newburg.*

What's up with the Black Egg?

Spring 2004, Dodge County—Well, everyone has a life-changing experience. You know, the part about missing a bus and catching a ride with your future spouse? Well, mine is nothing like that. Mine was a crooked pole—just that simple. Let me explain further. I maintain about 80 Wood Duck boxes in Dodge County. They are scattered about on several miles of the Beaver Dam River and its tributar-

Figure 3. Hooded Merganser eggs, normal white egg with black egg from same nest.

ies. I do mainly winter checks of the boxes and try to record hatching success (about 50–60% successful nests) and clean out the boxes to get ready for the next nesting season. My reason for the winter checks is, it's just easier to get around the marshes when they are frozen and winter is a slow time for this birder/outdoorsman. So I can turn a slow time into pro-"duck"-tive time, so to speak.

One of the drawbacks of winter maintenance is if a pole is leaning or down, and frozen in the ice, it's there until spring. I got just about all of the winter check done this year and blew out my back so I had to wait a couple weeks to finish going back and righting some of these leaning ships.

On April 22 I went along Shaw Creek to take care of some of the boxes. I came to box #15 and the pole was leaning badly, nearly at a 45% angle. I grabbed the pole and started to straighten it back up when a hen Hooded Merganser came flying out of the box. I decided to open the box and see what was inside. She was sitting on 11 eggs, and one of them was black (see photo of eggs in hat for comparison). It didn't appear to be mud. It was a thin layer, you could see scratches around the egg that were normal color, and it appeared to be the whole egg. Having just done the winter maintenance a couple of weeks before, I knew it wasn't a leftover egg from the previous year. So I asked on WisbirdNet, "Has anyone ever seen a black Hooded Merganser egg, and why is it black?" I received one reply about seeing such an egg. I posed the

same question to Roger Strand who sits on the board of the Wood Duck Society. The Wood Duck Society is dedicated to erecting nest boxes for Wood Ducks. They have about 350 members across the country. With Hooded Mergansers also using the same boxes, I thought I might get some feedback from them. Yes, they have had (3) cases of black eggs but no one could explain the event.

I sent off questions to WDNR, USFWS, Cornell University, Northern Prairie Research, Ducks Unlimited, and Delta Waterfowlers . . . nothing.

I tried searching the web but anything I came across about Hooded Merganser was a by-product of Wood Duck research. There just wasn't much information out there.

In early June I returned to the box to check to see if the eggs had hatched. Indeed, all 11 eggs had hatched including the black one. I found several fragments of the black egg, which I saved, along with a piece of a "normal" egg.

A friend of mine from the Horicon Marsh Bird Club, Jack Bartholmai, was monitoring a Hooded Merganser clutch of 18 eggs with 2 black eggs. Both of those eggs hatched also.

I sent the shell fragments to my brother who is a retired chemist (Ph.D.). He knew some people who could do some testing on the eggs to determine what the black was on the eggs. The following is what we found or didn't find:

Using SEM-EDS (Scanning Electron Microscope-Energy Dispersive Spectroscopy), it was noted that the black egg wasn't solid black, but mottled black on tan. It was noted that the normal egg had small black spots that were visible at higher magnifications. Both dark and light spots on both samples were examined with the equipment.

This is what my brother had to say: The answer is not "cut and dried." In the optical microscope you can see there are layers in both samples. The black areas are blotches on the surface and they are very thin (5–10 microns). These black areas are in both samples. The difference is that the black one has very large areas that have these layers of black, whereas the "normal" egg has only very small areas of black. Using ESCA (Electron Spectroscopy for Chemical Analysis) which can tell you what elements are present, both have the same composition throughout the sample except at the surface. The shell is made up of calcium, phosphorus, sulfur, and carbon. (Personal interpretation—the chemicals are probably calcium carbonate, calcium phosphate, and calcium sulfate.) The black layers in both samples are the same except they have more sulfur and carbon, with traces of potassium and chloride. (Personal interpretation—because they are at the surface the potassium and chloride could be contaminants introduced after the eggs are laid. The most likely source of the coloration is sulfur, although carbon in the form of graphite would be black. I believe this would be very rare in a biological system.) Finally the black areas can be easily flaked off. Also the black areas have more surface texture, which contributes to the coloration.

And after further testing, my brother stated: The results I reported to you are still unchanged. Little more can be added. Let me try to summarize what was learned. The black phenomenon is only on the surface. The

interiors of both eggs' shells were the same. The white egg also had tiny black specks. The black layer on the black egg could be easily scraped off. The black spots on the white egg are the same as the black area on the black egg. There appears to be less phosphorus on the surface of the black egg in the white area than on the white egg surface. The top layer of the white egg viewed from the edge of the shell shows a higher amount of phosphorus and carbon than the black egg viewed 5–10 microns into the black portion of the black egg. Finally the black egg contains sulfur in the black areas of the black egg and the black spots on the white egg; and the white portions of the black egg and the white egg do not contain sulfur. There is some inconsistency with the carbon content on the surface of both eggs. My conclusion from this is that since there is no iron along with the sulfur, it is not a result of blood being exposed to the surface of the egg. I would speculate that this is the first egg, since the black layer is also there in the white eggs, but in far smaller quantities, therefore the first egg has all the black deposited on the egg. Maybe there is a higher concentration of a sulfur-bearing protein in the oviduct that is "scoured out," or absorbed, by the first egg, and since the next eggs are produced in rapid-fire order, this protein doesn't build up enough to totally pigment the egg shell. Maybe this is caused by a delay in laying the first egg. If the egg is laid soon after it is formed, it may not be exposed long enough to be pigmented. Anyway that is my theory. Pass this by people who know about the egg laying metabolism.

Now for my opinion(s): If this is a "first egg of the year" event, then in theory every nest should have one black egg. If it relates to diet, then why wouldn't we see more of them. My theory is: It could be the first ever egg laid by a young hen. But after looking at Hooded Merganser nesting data (and there aren't many), I find no reference to any black eggs.

Which brings me back to square one . . . nobody knows why. If someone who knows nesting biology could put all the chemical facts together, we may have something here.

Anyone care to comment? I would like to hear opinions/theories on this.—*Jeff Bahls, Beaver Dam, WI., jbahls@powerweb.net*

The Spring Season: 2004

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Few seasons in recent memory have seen observers' opinions as to its quality polarized to the extent that appears to have been the case for Spring 2004. Because of the exotic smorgasbord of improbable rarities that showed up seemingly one on top of the other in the middle of May, resulting in what Daryl Tessen described as "Texas trip lists" for those with the time and will to chase them down, one could easily be left with the impression that it was an excellent season overall for all concerned. As Wayne Rohde put it, "the folks on Wisconsin's Records Committee won't be getting much sleep for a while."

However, observers who tended to cultivate their own gardens, so to speak, often had a very different impression. It was deemed "the worst warbler migration I've ever experienced" by the seasoned Bill Hilsenhoff in Dane County and "very disappointing" by Alta Goff in Barron County. And in northwestern Brown County, Melvin Wierzbicki flatly stated there was "no warbler migration," period.

Of course, others had some pretty impressive and memorable experiences, even close to home. Robbye Johnson, whose "What a year!" was surely colored by the fact that she was one of the lucky few to see Wisconsin's first Wilson's Plover, exclaimed she'd never seen so many Lincoln's and singing White-crowned Sparrows at Wisconsin Point in Douglas County. She also had her best Sanderling count in fifteen years. In Lafayette County, John Romano spent a "very windy" April 29 birding all day, ending up with an astounding 37 first birds of the year for him, several of which were also the first for the state, a not unexpected outcome when you bird a southern tier county that extensively near the beginning of warbler migration (and it helped that it was on a Thursday, i.e., just ahead of the weekend!). And where do you go if you want a big warbler list at the tail end of the period? You spend a day birding at the opposite end of the state, of course, as Ryan Brady did when he recorded 23 warbler species in Ashland and Bayfield Counties on May 31; that is, he saw all but 2 of the warbler species he saw all season! Brady also had a fantastic shorebird fallout on May 17, with 33 Whimbrels, 34 Marbled Godwits, 110 Dunlin and 250 Short-billed Dowitchers, just to mention some of the most numerous species. And finally, Kent Hall led a

team of Portage County birders into the field on May 13, resulting in "my most impressive day for warblers in 36 years of birding the county." Twenty-seven warbler species were recorded, with a grand total of 195 species of birds for the day. "It was one of those magical days that will remain in the memory banks forever," Hall concluded.

There was much more to it than just shorebirds and warblers, of course. True to the season's form, waterfowl migration was excellent here, poor there; the only "sea ducks" recorded all period by anyone along Lake Superior, for example, were 3 scoter species that Brady had fly by on the May 17 extravaganza mentioned above. Raptor data for this report got a much-needed boost when Ryan Brady submitted the results of the sixth annual Chequamegon Bay Hawk Watch. The numbers can be found in the individual species accounts, but the educational aspect of this undertaking is perhaps even more important. As Brady reported, there were something like 500 visitors to the site, with formal interpretive programs for youth groups providing a "great opportunity to explain why someone would stand in frigid cold for six hours to count birds." Hear, hear!

We leave it to Marilyn Bontly (Milwaukee County) to articulate the strangely dichotomous feeling many of us (this writer included) apparently felt this spring season. It was "overall a good migration," she wrote, "if one can get used to the idea of seeing fewer individuals, particularly the neotropical migrants." We can all only hope, seemingly against the evidence as it may sometimes seem, that her words reflect random variation, not the continuance or even acceleration of a long-term decline.

Weather

Fewer and fewer reporters each year are commenting on the weather, but fortunately this spring it can be summed up fairly succinctly as more or less normal for March and April and then incredibly wet and cool for the duration, with many localities registering their all-time wettest May. Philip Ashman described March in Dane County as warm the first week, then seasonal with some snow, finally warming up to around 60° near the end. Karen Etter Hale in Jefferson County added that it was also a windy month, with 9 days of 20+ mph winds. Ashman's April was "seasonal" for the first half, then warm toward the middle, with the season's first 80° readings. Persistent south winds characterized the latter part. Hale added that the month was quite dry, setting the stage for a memorably soggy May. Ashman reported 10.84 inches, Hale 9.86. Everywhere you drove there were flooded fields and overflowing streams. Not surprisingly, all the rain meant that it was also a relatively cool month. But it obviously didn't keep the birds from coming, nor dampen the enthusiasm of Wisconsin birders, who turned what had probably been just an average spring for rarities the first two months into one of the better ones in recent memory, as the next paragraph reveals.

Rarities

The Wisconsin Society for Ornithology Records Committee had a busy

summer and early fall working through an impressive list of reports. The standout was of course Wisconsin's first Wilson's Plover, found in Douglas County on May 9 and seen by a few lucky observers during its brief stay. Other accepted reports were of Glossy Ibis, *Plegadis* ibis sp., Barrow's Goldeneye, Swainson's Hawk (2), Black-necked Stilt (in 4 counties!), Ruff, Eurasian Collared-Dove (with the first evidence of nesting in the state), White-winged Dove, Chuck-will's-widow, Audubon's Yellow-rumped Warbler, Yellow-throated Warbler (numerous reports), Painted Bunting (2), Spotted Towhee, Blue Grosbeak and Hoary Redpoll (4). See the species accounts for details.

Extreme Birds

Three unambiguous new early arrival dates were set. The Schwalbes' April 4 Columbia County Snowy Egret lowered the previous record [April 11, 1996, Ozaukee County] by a full week. An Osprey in Racine County on March 2 (Fitzgerald) improved that record [March 6, 2000, Sauk County] by four days. And eight days were knocked off the Yellow-throated Warbler record [April 14, 2002, Sauk County], with Spalding's April 6 Dane County discovery. With both Snowy Egrets and Yellow-throated Warblers clearly on the increase in the state, the Osprey record appears to be the most significant of these.

Otherwise, one might profitably invoke the memory of Bob Beamon (the long jumper who extended the record for that event by nearly two feet in the 1968 Olympics) to put the other two notable early sightings in perspective. First, consider the Trempealeau County Black-necked Stilt first reported by Ruhser on April 15. The records apparently reveal a much, much later earliest previous exactly dated sighting of May 8, 1999 in Racine County. Except . . . there is an "April 1847" record, also in Racine County, by the redoubtable Philo R. Hoy. Can there be any meaningful comparison over such a time span? Second, after a brief pause last year, the April 19, 2002 Milwaukee County exceptionally early Hooded Warbler report was again improved upon this year, by two more days, in Dane County (Hansen). These only failed to be record early dates because of the extraordinary occurrence of four birds in four counties from March 27 (!) to April 8, 1950. Beamon's long-jump record stood until 1991, even though some predicted it would never be broken. And so, Wisconsin birders' quixotic quest of this one continues, one or two days at a time . . .

Two additional noteworthy dates might be described as "gap" dates; that is, they serve to compress further an already narrow (and of course arbitrary) window between winter lingering and spring arrival. Until this season, the gap for Eared Grebe was between February 12 [1959] and March 12 [1997]. A. Holschbach recorded an individual in Ozaukee County on March 7, thus at least technically setting a new spring record by our arbitrary calendrical standards. And an April 22 Laughing Gull in Milwaukee County (Idzikowski) becomes only the third (and the latest) of three spring season records before May 1. The other two birds showed up in early March and lingered. So—were this year's birds late winter wanderers

or early spring migrants? The answer is probably the latter for the Laughing Gull, but who knows for the Eared Grebe!

Reintroductions and Exotics

Whooping Cranes were reported five times, from April 6 to the end of the period, in Lafayette, Rock, Dane, Fond du Lac, and Marathon Counties. Two of the reports were of two individuals.

Exotics were something else this season. The explosion of reports, interestingly confined to titmice and finches, surely has as its chief explanation an apparently substantial release by a collector rumored to be somewhere in northeastern Illinois, which also has had a recent significant upwards spike in such reports. In Wisconsin this season, a Blue Tit was reported just once at Hilary Ford's Walworth County feeder, a magnet "on the state line" for exotics several years running now, on April 6. More regular there were two Great Tits; though apparently never seen simultaneously, they were indeed different birds since one of them was missing its tail. Fare saw a pair in Racine County on March 29, Carlson another duo in Waushara County on May 27; she suspected nesting might be in the offing. Finally, Huf also had a Great Tit in Milwaukee County on April 30.

Finchwise, Tom and Lucy Kile posted pictures on the Wisconsin Bird Network of what was eventually judged to be a European Greenfinch (Door County, May 14). A pair of European Goldfinches turned up in Racine County on May 8 (DeBoer). Another mystery feeder finch (Outagamie County, May 23) had its mug shot posted by Todd and Cindy Ward; it turned out to be a Eurasian Siskin, the most likely by far of all the season's exotics to occur naturally. In the end though, the Records Committee cautiously concluded that its status had best remain "origin uncertain."

Statistics

The total number of species, which had shrunk to exactly 300 in Spring 2003, rebounded to 309. The most conspicuous misses were Western Sandpiper and Little Gull. With the number of cited observers (observer duos counted as single observers) dropping from 124 to 99, this seems more remarkable than it is, simply because I relied much less on WBN reports this year than last. Internet reporters not also submitting formal reports dropped from 49 to just 16. The number of WSO reporters thus actually went up, from 75 to 83. Still, the species count is a good one and well reflects the excitement and diversity of the season.

The number of counties receiving what I've been calling "nonincidental coverage" [25 species or more on at least one report] remained the same at 41, with the number of such reports also virtually unchanged (95 vs. 96 in 2003). Once again Dane County outpaced the field by far, with 12 such reports. Milwaukee County had 7, Columbia County 6, and Sauk and Winnebago Counties 5 apiece, to round out the top five contributing counties. As has been the case in recent years, southwestern Wisconsin coverage was comparatively poor. Sixteen counties received "incidental"

coverage only. A byproduct of the less assiduous gleaning of WBN reports is reflected in the fact that the number of counties with absolutely no coverage rose dramatically, from 6 to 15. Alphabetically, these were Crawford, Iron, Kewaunee, Lincoln, Marinette, Marquette, Menominee, Monroe, Pepin, Pierce, Price, Rusk, Sawyer, Waupaca, and Waushara Counties.

Note: a few years ago, Ozaukee County was the most thoroughly covered county; this year, an habitual Ozaukee County observer did not submit a report, including the comment on a different county report that Ozaukee County had been singled out as "overcovered." Actually, a heavily covered county offers many opportunities for localized comparisons and so I'm glad to have a few (but not too many!) to work with. The reader of the species accounts will note that I used this to occasional advantage, mostly with respect to Dane County data.

The Accounts

These twenty-five widespread, common and mostly sedentary species are not included in the species accounts: Canada Goose, Mute Swan, Mallard, Ring-necked Pheasant, Ruffed Grouse, Wild Turkey, Ring-billed Gull, Herring Gull, Rock Pigeon, Mourning Dove, Great Horned Owl, Red-bellied Woodpecker, Downy Woodpecker, Hairy Woodpecker, Blue Jay, American Crow, Horned Lark, Black-capped Chickadee, White-breasted Nuthatch, European Starling, Cedar Waxwing, Northern Cardinal, House Finch, American Goldfinch and House Sparrow.

Abbreviations: BOP = beginning of period; EOP = end of period; TTP = throughout the period; WBN = Wisconsin Bird Network; WSO = Wisconsin Society for Ornithology.

Reports (1 March–31 May 2004)

Greater White-fronted Goose—Already present at BOP in its stronghold centered around Dane and Columbia Counties. Numbers that would have been jaw-dropping even ten years ago peaked at 1350 in Columbia County on March 20 (Tessen). Lingered until late April in Sauk and Ozaukee Counties, with the latest report coming May 6 from Dane County (Tessen). Reported in all from 11 counties, with no reports farther north than Eau Claire, Portage and Outagamie Counties.

Snow Goose—Though reports from the first week of March came in from Columbia, Rock and Manitowoc Counties, it was reported at BOP only from Douglas County (LaValleys). A maximum of only 9 could be garnered, in Dane County on March 20 (Thiessen). Sixteen counties submitted sightings, with EOP reports (or close to it) from Ashland/Bayfield and Douglas Counties.

Ross's Goose—Reported from 6 counties, roughly along a Sauk to Brown County axis. The reported maximum of 10 (Dane County, March 20, Thiessen) should be compared to the previous species! After March 21, there were only two isolated reports, both by Tessen: April 8 in Dodge County and May 5 in Brown County, the latter just two days shy of the record departure date.

Trumpeter Swan—At or near BOP in Dane, Columbia and St. Croix Counties. Overt nesting was reported from St. Croix and Barron Counties, with at least some of the 16 in Burnett County on May 20 surely engaged in that same activity. Stragglers outside the breeding range were in Columbia County May 1 (Hilsenhoff), Fond du Lac County May 2 (Tessen) and Sheboygan County May 24 (Brassers).

Tundra Swan—Specified as BOP only in Dane County, where despite the concentration of observers a maximum of only 4 could be produced (Evanson on March 13). Brady in Ashland/Bayfield Counties described the passage as "noticeably poor"; nonetheless, the Lukes were able to find about 2000 in Door County on March 29, Hall about 1500 in Portage County the next day. The latest report came

from Marathon County on May 3 (Belter).

Wood Duck—BOP in Dane and Winnebago Counties, with 6 more counties added by March 10. A. Holschbach counted 185 in Sauk County on March 25. Reached Douglas County on April 4.

Gadwall—BOP in 7 counties, as far north as St. Croix County in the western, Columbia County in the central, and Winnebago County in the eastern part of the state. A. Holschbach tallied 360 in Sauk County on March 31. Last Dane County sighting on May 13 (Ashman).

American Wigeon—Still in only 3 counties (Dane, Dodge and Washington) through the first week of March. High counts of only about 40 could be mustered, in Sauk and Dane Counties March 31 (A. Holschbach) and April 4 (Stutz) respectively.

American Black Duck—Reported from a healthy 28 counties, though high counts of only 5 were received from Sauk and Oneida Counties (A. Holschbach and Stutz on March 7 and April 10 respectively).

Blue-winged Teal—As usual, the only dabbler not present at or near BOP, with the earliest report coming from Milwaukee County on March 19 (Strelka). Hilsenhoff counted 170 on April 24 in Dane County. Reached Barron and Douglas Counties just before the end of March.

Northern Shoveler—BOP in Dane and Winnebago Counties. A. Holschbach tallied 126 in Sauk County on March 30.

Northern Pintail—Appearances in 27 counties brought that figure a bit closer to that of the other dabblers than has recently been the case. Especially encouraging was Belter's count of over 250 in Marathon County (May 3). Still, only 5 of the 12 Dane County observers recorded it. At or near BOP in about 8 counties, as far north as Barron County (Carlsen).

Green-winged Teal—TTP in Dane County, where Stutz had 80 on April 21. Otherwise, appeared in 4 more counties the first week of March, with Oconto County taking the eventual honors for the high count (500, April 11, Smiths).

Canvasback—In Dane and Winnebago Counties early in the period. Reached Douglas County by March 28. Tessen saw over 500 in Manitowoc County on March 29. Still in Walworth County as late as May 29 (Fitzgerald).

Redhead—Far more widespread early on than the previous species, with about 10 counties reporting it BOP or very early March. Evanson had 81 in Dane County on March 13.

Ring-necked Duck—Advanced through the state at a more leisurely pace than in Spring 2003, which saw about a dozen counties all recording it initially on March 15–16. This year, it was already in at least 9 counties before that date. Most counties that missed Canvasback and/or Redhead still had this species (Washington, Iowa, Richland, Outagamie, Burnett, and Washburn Counties, among oth-

ers). Finally reached Douglas County on April 4 (Johnson).

Greater Scaup—Found in 10 counties without Great Lakes frontage. The Dane County passage provokes speculation that many of these reports may involve late birds moving through, as the only reports from that heavily covered county were of 2 birds on April 29 (Evanson) and of an unspecified number on May 8 (Fitzgerald). Risch commented that his 8 individuals in Taylor County on April 19 were "unusual." As is often the case, the Manitowoc/Sheboygan County line divided the largest reported flock in two, as Tessen reported a staggering 15,000–20,000 birds there on March 9. Must be those zebra mussels!

Lesser Scaup—Widespread throughout the state all season long. Tessen found 10,000 in Winnebago County on April 4, Brady 400 in Ashland/Bayfield Counties on April 23.

Harlequin Duck—Two Racine County birds found by Howe were reliable from March 3 to April 12. Two Ozaukee County birds first reported on May 3 (Gustafson) lingered until at least May 25 (Tessen); there are only four later May or June records.

Surf Scoter—Reports were from Ozaukee County on April 1 (6 birds, Frank), Racine County on April 23 (6 birds, Fitzgerald), and Ozaukee County again on May 12 (10 birds, Tessen).

White-winged Scoter—Reported twice, both times from Ozaukee County, with Tessen and Frank each having 3 individuals on March 25 and May 19 respectively.

Black Scoter—One or two birds reported on three occasions: Ozaukee County March 9 (Tessen); Milwaukee County March 31 (Gustafson); Ozaukee County May 15 (Frank).

Long-tailed Duck—Spring 2003's encouraging report of 395 individuals was dwarfed by the 2000–3000 [!] on the Ozaukee/Manitowoc County dividing line, as reported on March 9 by a no doubt astounded Tessen. Racine, Milwaukee, and Door Counties also filed reports. Frank reported the last from Ozaukee County on May 19.

Bufflehead—Latest departure date from the southern half of the state was May 22 (Rock County, Klubertanz). Ashman reported 90 from Dane County on April 17.

Common Goldeneye—The high count of 890 was turned in by the Smiths in Oconto County on March 28. In Winnebago County until May 8 and Ozaukee County until May 16, and with an individual still present in Manitowoc County at EOP (Sontag).

Barrow's Goldeneye—If it is really a case of the same individual male bird returning to southern Ozaukee County for so many years, then he now appears to favor northern Milwaukee County, as the overwintering male centered there just made it into the season's report (March 3, Gustafson).

Hooded Merganser—Present at or near BOP in about 12 counties, including Oconto, Marathon and Ash-

land/Bayfield Counties. However, did not reach Douglas County until April 4 (Johnson). Evanson had 60 on March 13 in Dane County, where it was last reported on May 8.

Common Merganser—Ten or so BOP reports, with birds still in Door and Florence Counties at EOP. Brady reported about 300 from Ashland/Bayfield Counties on April 18.

Red-breasted Merganser—Represented by all reporting Great Lakes counties and about 15 others. In Marathon County until May 23 (Belter) and in Ozaukee County as late as May 27 (Frank). TTP in Door County (Lukes).

Ruddy Duck—To show how an isolated "BOP" report can skew impressions, note that though 1 of the 12 Dane County reporters (Burcar) reported it as such [in fact TTP], the next 6 to report it gave March 26–April 3 arrival dates. In fact, after a March 5 report from Winnebago County (Ziebell), the next report was not until March 22 (Waukesha County, Gustafson). This leaves the debate open as to whether this species or Blue-winged Teal can be considered as "the last duck through." High count was of 400 birds in Green Lake County on May 16 (Fitzgerald).

Gray Partridge—The number of reporting counties nose-dived from 6 in Spring 2003 to just 1: Iowa County on March 13 (Burcar).

Spruce Grouse—Wood reported 2 males in Vilas County on March 21.

Sharp-tailed Grouse—Haseleu filed an April 7 report from Burnett County, while the LaValleys counted 17 in Douglas County on April 19.

Greater Prairie-Chicken—Reports from Portage, Marathon, and Clark Counties, with Belter counting 24 in Marathon County on March 21.

Northern Bobwhite—Found this season in Rock, Green, Lafayette, Dane, Columbia, Sauk, and Richland Counties.

Red-throated Loon—Reported from Ozaukee, Sheboygan, Manitowoc, and Douglas Counties, with no indication of numbers. Arrival and departure dates were March 29 in Ozaukee County (Tessen) and May 27 in Douglas County (Johnson).

Common Loon—A March 4 Door County individual reported by the Lukes would appear to fit into the gray area between winter wanderers and returning migrants. The parade of the latter began March 15 in Walworth County (Fitzgerald). Brady first noted it in Ashland/Bayfield Counties on April 5. He also submitted the high count there, with 164 individuals noted on May 2. Though it was last reported from Dane County on May 8, Stutz was able to find one in Columbia County on May 30.

Pied-billed Grebe—First reported from Manitowoc County on March 5 (Sontag) and Ozaukee County on March 8 (Strelka). Reached St. Croix County on March 21 (Persico) and Langlade County on April 6 (Schimmels). Present on virtually every comprehensive county report, though the

maximum reported was only 20 (April 18, Green County, Yoerger).

Horned Grebe—First noted in Milwaukee County (Gustafson) on March 4. The vast majority of counties however gave April arrival dates; even heavily covered Dane County didn't record it until March 27. Still in Marathon County on May 13 (Belter). Johnson counted 82 in Douglas County on April 25. Showed up in 22 counties.

Red-necked Grebe—The 17 recording counties exactly matched Spring 2003, but the bias was a bit more towards northwestern counties than the year before. Burcar recorded the first on April 1, with birds in both Dane and Columbia Counties. Ashman had a lingerer in Columbia County on May 29.

Eared Grebe—Continued a trend of being reported from 6 or more counties for at least the last five years, with reports from Walworth, Ozaukee, Columbia, Dodge, Marathon, and Taylor Counties. A well-described bird in Ozaukee County on March 7 (A. Holschbach) considerably shortens the previous winter/spring hiatus of February 12 (1959) to March 12 (1997). The next sighting came on April 4 (Walworth County, Jacyna). At EOP there was an individual in Columbia County [note the late presence there as well of Common Loon and Red-necked Grebe, as described above].

Western Grebe—There were documented reports this season of 2 birds in Taylor County on April 19 (Risch) and of 1 bird in Douglas County on May 13 (Johnson).

American White Pelican—Expected arrival dates continue to move up for this increasing species, as it had been recorded from three counties (Winnebago, Trempealeau and La Crosse) by the end of March, beginning with Bruce's March 24 sighting in Winnebago County [the other two regular county chroniclers had it three days later]. Large numbers however were not recorded, with the 32 in Rock County on May 15 (Yoerger) the maximum number received. For the second straight spring, the army of Dane County observers failed to record it!

Double-crested Cormorant—Only one BOP report (Milwaukee County, Prestby). Next showed up in Ozaukee County on March 19 (Strelka). Inland, reached Dane County on March 28 and Clark, Taylor, and St. Croix Counties on April 16/17. Concentrations of over 1000 were reported from Winnebago (1370) and Manitowoc (1500) Counties.

American Bittern—The first of 16 county sightings took place in Portage County on April 4 (Hall). Only one report gave numbers, with Tessen counting 3 in Winnebago County on May 17.

Least Bittern—Featured in 6 county reports, beginning with a May 8 discovery in Winnebago County (Ziebell). The other lucky counties were Waukesha, Columbia, Dodge, Oconto, and Marathon.

Great Blue Heron—Noted in Dane, Iowa, St. Croix and Florence Counties

at BOP, with Columbia, Jefferson, and Dodge Counties added March 5–7. The Smiths described them as "low" in Oconto County, while Belter estimated over 350 in Marathon County on April 7. Reached Washburn and Douglas Counties March 27/28.

Great Egret—Arrived considerably later than in Spring 2003, when there were four March reports. This year's first reported sighting wasn't until April 8 (Dodge County, Tessen). The number of reporting counties, however, increased considerably from the previous year (25 vs. 19). Ziebell counted 270 in Winnebago County on May 28.

Snowy Egret—A good spring for this species, with 6 county reports and a lowering by a full week of the record early arrival date when the Schwalbes found one in Columbia County (a county first for them) on April 4. Lesher had one in Trempealeau County on April 16. More birds were found in Dodge, Fond du Lac, Winnebago, and Ashland/Bayfield Counties.

Little Blue Heron—Johnson recorded a county lifer with an individual present in Douglas County May 13–15.

Cattle Egret—First reported from Dane County on April 24 by Spalding. Reports followed from Racine, Fond du Lac, and Winnebago Counties.

Green Heron—The first report was filed from Door County on April 4 (Lukes). It took a full two more weeks before reports started coming in with some regularity. Fewer April dates however than normal, with Douglas County not reached until mid-May.

Black-crowned Night-Heron—Ziebell noted it first in Winnebago County on April 1. He counted 200 there on May 16. Most of the other 9 county arrivals did not occur until May.

Yellow-crowned Night-Heron—There were two reports: a Fond du Lac County bird on May 1 (Pfortenhauers) and an Iowa County bird on May 18 (Burcar) which was still being seen as late as May 25 (Tessen).

Glossy Ibis—Bahls found and photographed an individual in Fond du Lac County on May 29 for the ninth Wisconsin record (vs. eleven for White-faced Ibis).

***Plegadis* ibis sp.**—Belter had a flyover in Marathon County on May 16.

Turkey Vulture—Early sightings came on March 1 (Waukesha County, Gustafson), March 3 (Sauk County, A. Holschbach and Barron County, Carlsen), March 5 (Iowa County, Burcar) and March 6 (Columbia County, A. Holschbach). Portage and Marathon Counties both gave a March 30 arrival date, while an April 7 date in Douglas County was, as it often is, the latest. High count was 72 in Sauk County on April 24 (A. Holschbach).

Osprey—One surprised Fitzgerald in Racine County on March 2, setting a new spring arrival record by 4 days. More expectedly, began showing up in various locations around the state at the end of the month, including March 30 in Portage County (Hall). Brady had 16 in Bayfield County on

April 29 and Ziebell saw 6 in Winnebago County on May 29.

Bald Eagle—Numbers at the Chequamegon Bay hawk watch (Bayfield County) peaked at an impressive 115 on March 23 (Brady). The total for the season there was 826, spanning the dates March 6 to May 15. Gustafson observed two young in a nest in Sauk County on May 19.

Northern Harrier—Reported BOP from 8 counties, as far north as Portage (Hall) and Door (Lukes) Counties. Also early was a March 4 report from Oconto County (Smiths). Reached Douglas County on March 24 (LaValleys). Belter's 11 in Marathon County on April 10 was the largest total given.

Sharp-shinned Hawk—Reported TTP from 26 counties. Brady counted 55 on May 12 in Bayfield County, with a total of 614 for the season (March 15 to May 15).

Cooper's Hawk—Brady's Bayfield County hawk watch seasonal total was but 17 (compare with previous species), not surprising though for a mostly sedentary species near the northern limits of its range.

Northern Goshawk—Reported from 9 counties, with St. Croix, Portage, and Door Counties the southernmost. Brady had 20 go by the Bayfield County hawk watch from March 3 to April 24.

Red-shouldered Hawk—Already present at BOP in Iowa (Burcar) and St. Croix (Persico) Counties. Then appeared in Outagamie and Portage Counties on March 12. No reports at all to the southeast of Dane and Washington Counties. Fairly well represented through the rest of the state, with a total of 3 passing Brady's Bayfield County hawk watch for the season (April 2 to April 20).

Broad-winged Hawk—Somewhat surprisingly, only one March report, from Barron County on March 25 (Goff). The first cluster came April 16–18, when 7 counties registered its passage. Bayfield County was in this group, and Brady counted 218 there on May 1, the same day Persico had 10 in St. Croix County for the next highest number. Seen throughout the state.

Swainson's Hawk—Returned after an absence in Spring 2003 with two reports: April 6 in Barron County (Betchkal) and April 23 in Bayfield County (Brady).

Red-tailed Hawk—A bird thought to be a Krider's Red-tailed Hawk was reported from Sauk County on May 9 (Cooke). Other off-beat red-tails puzzled commentators on the WBN all season. Brady judged 18 of the 1373 Bayfield County hawk watch birds to belong to one or another of the western forms, including one identified as a Harlan's. His maximum daily count was 215 on April 6.

Rough-legged Hawk—Matched the previous spring with 24 county reports. Lightly covered southwestern Wisconsin was the only region not represented. Late for a southern county was an individual in Dodge County on May 18 (Gustafson). Perhaps surprisingly in view of the extensive coverage, none were reported

from Dane County any later than March 9. Twenty-five was the daily maximum for Brady's Bayfield County hawk watch, seen on April 15. The last of 165 Rough-legged Hawks was logged there on May 14, while it was still being recorded as EOP in Barron and Douglas Counties.

Golden Eagle—A banner season, with no less than 7 county reports, including a late individual in Racine County on May 4 (David). Dane, Sauk, Wood, Portage, and Douglas Counties were also represented, the last providing the latest bird for the season and the second-latest ever seasonal record (May 23, LaValleys). Comparisons with other recent spring seasons become distinctly unfair, however, in light of the inclusion this year of Brady's Chequamegon Bay hawk watch figures (Bayfield County). He had a total of 47 Golden Eagles from March 4 to May 11, with high counts of 4 each on March 6, March 10 and March 23.

American Kestrel—Brady's Bayfield County hawk watch logged 32 individuals from March 10 to May 11, with a high of 5 on April 6.

Merlin—Twenty county reports represents a very good number for this apparently increasing species. Recorded as BOP in Dane and Portage Counties, TTP in Douglas County, and EOP in Door and Ashland/Bayfield Counties. Six passed the Bayfield County hawk watch site (Brady) on April 17.

Peregrine Falcon—WSO reports from 19 counties, but caution if making comparisons with recent spring reports: Wisconsin Peregrine Society nesting data have not been included this year. Hilsenhoff described one attacking a yellowlegs in Dane County on May 1.

Yellow Rail—May reports only, beginning May 7 in Dodge County (Tessen) and May 8 in Winnebago County (Truax). Found also in Walworth and Burnett Counties. One assumes the Marquette and Green Lake County sites were duly repopulated, but these counties were basically uncovered this year.

King Rail—Heard (no indication any were seen) in Winnebago, Dodge, Douglas, and Columbia Counties (in that order) between May 8 and May 21.

Virginia Rail—Earliest report came from Waukesha County on April 8 (Gustafson). Ended up being reported from 22 counties throughout the state.

Sora—As usual, more widely reported than the previous species, with 31 county reports, the earliest coming on April 9 (Waukesha County again, Gustafson).

Common Moorhen—A line drawn from Dane to Oconto Counties delineates the northern border of the 7 reporting counties this year. The Smiths saw their first since 1998 in Oconto County on May 24. The reports began in Dodge County on May 7 (Tessen). No numbers of individuals were indicated.

American Coot—BOP/TTP in 6 counties, as far north as St. Croix and

Outagamie Counties. High count submitted was 2000 in Dane County on April 13 (Hilsenhoff).

Sandhill Crane—Migration well under way at BOP, being reported as such as far north as Portage County. One suspects that first dates such as March 24 for Barron County or April 4 for Burnett County simply means the observers did not happen upon migrant flocks and thus these were returning residents.

Black-bellied Plover—A relatively modest passage through the state, with sightings in 8 counties. Earliest was a May 7 report from Dodge County (Tessen), latest May 20 from Manitowoc County (Sontag). A maximum of 17 were in Ashland/Bayfield Counties on May 17 (Brady).

American Golden-Plover—Missing in action last spring, it rebounded with sightings in 5 counties, starting with Eau Claire County on April 23 (Polk). The other sightings were clustered in the period May 17–May 22 and comprised Ashland/Bayfield, Dunn, Racine, and Door Counties. There was no indication of more than one bird in any of the reports.

Wilson's Plover—The jewel in the crown for the season, it became the latest species to be added to the state list when Stensaas found and photographed an individual in Douglas County on May 9. Unfortunately, it was a "one day wonder," as only a few other Wisconsin and Minnesota birders were able to see it in the next few hours, after which it could not be relocated.

Semipalmated Plover—First appeared in Racine County on April 23 (Fitzgerald). Lafayette County on April 29 (Romano) was the only other report that month. Brady's numbers topped the list with 55 in Ashland/Bayfield Counties on May 17. Douglas County dates spanned the period May 9–29 (Johnson). Reported from 15 counties.

Piping Plover—Three reports, single birds each time, from three Great Lakes counties. Sontag recorded one in Manitowoc County on April 27, Johnson one in Douglas County on May 9, and Brady one in Bayfield County on May 17.

Killdeer—Akin to Ring-necked Duck, there was no perceptible concentration of arrival dates as there had been the previous spring. It was already in Milwaukee, Jefferson, Dane, Columbia, and Winnebago Counties at BOP (vs. none in 2003), with 9 more county appearances by March 10, reaching as far north as Barron County. The latest date given on a thorough county report was March 28, in Burnett (McInroy) and Douglas (Johnson, LaValleys) Counties.

Black-necked Stilt—Like Yellow-throated Warbler, this species appears to be consolidating its position in the state (though admittedly there were no Spring 2003 reports). Ruhser chronicled the discovery of a single bird in Trempealeau County on April 15, which was again reported on April 17 (Lesher). Almost a month passed, and then suddenly Black-necked Stilts were noted almost simultaneously in 3 counties. First to register were 2 birds in Dane County, discovered on May 13

by McDowell and staying until at least May 17. On May 14 and May 15, S. Cutright et al. had 2 in Columbia County, close enough of course that they might have been the same birds. And from May 15 to May 31, anywhere from 1 to 3 birds entertained dozens of WBN correspondents in Fond du Lac County (Fitzgerald et al.). If these Horicon Marsh birds were ever seen to cross the road into Dodge County, the fact was not reported!

American Avocet—Present in Milwaukee (30 birds, Idzikowski), Iowa, Dodge, Douglas, and Ashland/Bayfield Counties between April 22 and May 21.

Greater Yellowlegs—On the early side were birds in Clark and Taylor Counties on March 25 (Risch). The remainder of the 32 county reports began with a sighting in Portage County (Hall) on April 7. Schimmels reported a flock of 30 in Langlade County on April 28. Departed Dane County on May 22.

Lesser Yellowlegs—Reported from 2 more counties than the previous species, with the initial report lodged in Outagamie County on April 4 (Tessen). Sixty birds were reported twice in Dane County, first on April 15 (Ashman) and then again on May 22 (Burcar).

Solitary Sandpiper—Seen in 29 counties, starting April 17 in Taylor County (Risch). Ashman had a high of 12 in Dane County on May 8.

Willet—After two banner years, a more muted performance, with the largest flock reported consisting of "only" 19 birds (Sontag on May 1 in Manitowoc County). Sontag also had the earliest report (April 23). A late report came on May 28 from Door County (Lukes). Nine counties filed reports: 3 Lake Michigan, 2 Lake Superior, and 4 inland counties.

Spotted Sandpiper—A first report of only April 20 (Manitowoc County, Sontag) is on the late side, by historical standards. It had been seen in 9 counties by month's end. The LaValleys tallied 36 in Douglas County on May 24.

Upland Sandpiper—Sighted twice in April, first in Portage County on April 17 (Hall) and then in La Crosse County on April 19 (Lesher). Reported from 12 counties, with a high count of 8 in Ashland/Bayfield Counties submitted by Brady on May 10.

Whimbrel—Two good-sized flocks were discovered: 33 in Bayfield County (Brady) on May 17, and an initial count of 19 in Manitowoc County (Sontag) on May 19, which had swollen to 32 by May 23 (Tessen). However, initial and final appearances were in Douglas County (May 14, LaValleys and May 27, Johnson).

Hudsonian Godwit—The earliest of 8 county reports was on May 6 (Dane County, Hansen and A. Holschbach). Dodge and Fond du Lac were the other inland counties represented. Brady's 3 in Bayfield County on May 17 was the largest figure given. Last reported from Milwaukee County on May 23 (Lubahn).

Marbled Godwit—First reported from Racine County on April 19

(Fitzgerald), with observations in Dane and Ozaukee Counties quickly following. The big numbers though were reported along Lake Superior, with 23 in Douglas County on May 12 (Johnson) and 34 in Bayfield County on the magical shorebird date of May 17 (Brady). Also found in Dane and Portage Counties.

Ruddy Turnstone—Found in 3 Lake Michigan, 2 Lake Superior, and Fond du Lac and Winnebago Counties, beginning May 12 in Sheboygan County (Brassers). Numbers topped out at 45 in Manitowoc County on May 23 (Sontag).

Red Knot—Seen twice, first in Fond du Lac County on May 16 (Fitzgerald, Prestby, Wood) and then in Douglas County on May 29 (Johnson).

Sanderling—Seen first in Winnebago County (May 8, Ziebell). The next day, Johnson saw her first in Douglas County, where she eventually encountered 60 by May 27. Other reporting counties were Racine, Manitowoc, Dane, and Ashland/Bayfield.

Semipalmated Sandpiper—First spotted in Dane County on May 4 (Hilsenhoff). Seen in 16 additional counties until EOP. In fact, the maximum (75) was in Ashland/Bayfield Counties on May 31 (Brady).

Least Sandpiper—There are only 3 records before April 10; Romano had one on that date in Lafayette County, and Knispel had 6 in Winnebago County the next day. Last Dane County report on May 24, where the statewide maximum of 60 was seen by Ashman on May 8.

White-rumped Sandpiper—Reports from 8 widely scattered counties, with a high count of 18 in Dane County on May 22 (Ashman). Three county observers there saw it on May 6, the earliest date received.

Baird's Sandpiper—Seen in 6 counties (Dane, Columbia, Fond du Lac, Brown, Burnett, and Ashland/Bayfield); note the relative lack of bias towards counties with Great Lakes frontage, not surprisingly for this engaging little "grasspiper." Earliest and latest honors went to Dane County (Stutz on April 18, Burcar on May 21).

Pectoral Sandpiper—Spring 2003 saw six March county reports, this year none, with the first report coming from Outagamie County on April 4 (Tessen). Tessen also had the largest figure, with 100 birds in that county on April 20. In St. Croix County on May 30 (Persico). Reported from 22 counties.

Dunlin—The most widely reported *Calidris* sandpiper after Least, with reports from 26 counties. Gustafson's Waukesha County birds on April 9 led the parade. They were in that county as late as May 13, and still being reported at EOP from Eau Claire County (Polk). Fitzgerald's 300 or so in Green Lake County on May 15 constituted the largest encountered flock.

Stilt Sandpiper—Individuals were found three times, first in Dane County on May 3 (Burcar), then in Outagamie County on May 7 (Petznick) and finally in Fond du Lac

County on May 15 (Fitzgerald). The Dane County individual lingered until at least May 18 (Tessen).

Ruff—It was "déjà vu all over again," as the same Brown County pond that hosted one May 12–17 2003 was revisited May 22-23 (Baumanns et al).

Short-billed Dowitcher—Romano filed the earliest report (Lafayette County, April 24). Brady's massive shorebird fallout on May 17 in Bayfield County netted 250 of this species, 8 times the next highest reported number. Found in 18 counties.

Long-billed Dowitcher—Reported from Dane County on April 29 (A. Holschbach), Fond du Lac County on May 9 (Tessen), and Douglas County on May 14 (LaValleys).

Wilson's Snipe—Found BOP in Oconto County (Smiths) and March 2 in Racine County (Gustafson). Already in Douglas County (Johnson) by March 10. Hilsenhoff gave a figure of 33 in Dane County on April 13.

American Woodcock—BOP/March 1 reports from Winnebago (Ziebell) and Milwaukee (Prestby) Counties. Also in Dane, Rock, and Ozaukee Counties by March 10. Stutz counted 7 in Dane County on March 28.

Wilson's Phalarope—Showed up in two clusters, the first around May 1, the second at mid-month. First were birds in Rock (Klubertanz) and Dane (many observers) Counties on April 29. Waukesha, Walworth, and Brown County were also hit during this first wave. The second saw birds appear in (among others) Douglas, Green Lake, and Racine Counties, with 7 birds on May 15 in Douglas County (Johnson) also the seasonal maximum. Twenty-three counties were visited in all, up 10 from Spring 2003.

Red-necked Phalarope—A three-day passage through the state, with Dodge/Fond du Lac Counties harboring an individual May 16–18 (many observers) and Bayfield County one on May 17 (Brady).

Parasitic Jaeger—Seen during the WSO preconvention trip in Douglas County on May 19 for the third consecutive spring sighting from that (and only that) county. Johnson and Tessen provided documentation, with at least 2 and possibly 4 individuals present.

Laughing Gull—Represented by a single report, April 22 in Milwaukee County (Idzikowski). This appears to fill a gap in spring records between April 4 [1979] and May 1 [2001].

Franklin's Gull—First appeared quite late in the season, with a May 17 sighting in Bayfield County (Brady). Douglas, Eau Claire, and Racine County sightings followed, the last on May 26.

Bonaparte's Gull—Seen first in Dane County on March 20 (Ashman), with additional sightings in Milwaukee and Columbia Counties by month's end. Fitzgerald's estimated 900 birds in Milwaukee County on April 23 was the high count; other notable concentrations were 400 in Dane County on April 24 (Stutz) and 600 in Ashland/Bayfield Counties on May 8 (Brady). Appeared in 27 counties.

Thayer's Gull—Latest appearance in the four reporting Lake Michigan counties was May 19 in Ozaukee County (Frank). Burcar filed mid-March reports from Dane and Columbia Counties.

Iceland Gull—Burcar [see previous account] also had 1 of this species in Columbia County, on March 15. Two birds were reported on March 31 (Milwaukee County, Gustafson) and on May 19 (Ozaukee County, Frank). The latter was also the latest report. In addition, there were reports from Manitowoc and Sheboygan Counties.

Lesser Black-backed Gull—Reported from no fewer than 11 counties, all in the southern half of the state, extending across from Sheboygan to La Crosse Counties. Seven reports came in March, 3 in April and just 1 in May: May 16 in Ozaukee County (Frank).

Glaucous Gull—A maximum of 14 was reported, in Manitowoc County on March 9 (Tessen). Birds remained there TTP (Sontag). Inland reports were from Walworth, Dane, Columbia, and Winnebago Counties.

Great Black-backed Gull—On the Lake Michigan shoreline from Racine to Door Counties and in Winnebago County. The Door County reports were TTP (Lukes). Tessen counted 15 in Manitowoc County on March 9, where like the previous species it remained TTP.

Caspian Tern—Made its first appearance in Oconto County on April 6 (Smiths). Numbers peaked at over 300 in Manitowoc County on May 12 (Sontag). Widespread, with reports from 20 counties.

Common Tern—Surprisingly, reported first from Douglas County (April 22, LaValleys), with a Milwaukee County sighting the next day (Fitzgerald). Tessen reported 280 in Douglas County on May 23. Reported from 14 counties, with Dane, Marathon, and Burnett Counties the farthest from substantial bodies of water.

Forster's Tern—The Smiths had a relatively early individual in Oconto County on April 5. Seen in 23 counties all across the state, with a tally of 70 in Winnebago County on May 8 (Ziebell) the high count.

Black Tern—Reported from 19 counties, beginning May 7 in Waukesha (Gustafson) and Dodge (Tessen) Counties, with 3 more counties following the next day. Ashman counted 75 in Dane County on May 24.

Eurasian Collared-Dove—The inevitable addition of this species to the list of birds which have nested in the state appears to have occurred on May 15, when a group of birders found a nest with an incubating bird on a grain elevator in Arlington, Columbia County (N. Cutright). The pair here were the only ones directly reported to the WSO for the season, though Polk relayed a report that Buffalo County birds (3?) she had reported in February were still being seen by other observers through at least early March.

White-winged Dove—A tantalizing report of a possible drive-by bird in Mil-

waukee County on April 28 (Idzikowski) materialized into a confirmed sighting a few miles away on May 11 (Boldt). The bird became very reliable and was seen by many observers for the next week or so, even making it onto the front page of the Milwaukee *Journal Sentinel.* This is the fourth record for the state, all since 1997.

Black-billed Cuckoo—First seen in Clark County on May 8 (Risch). Dane, Dodge, and Outagamie Counties followed the next two days. Romano counted 5 in Lafayette County on May 18. Reports from 15 counties.

Yellow-billed Cuckoo—Reported from 12 counties, as far north as Portage and Outagamie Counties. Romano had both the first (May 11) and the largest number (4, May 28), both in Lafayette County.

Eastern Screech-Owl—Reported from 10 counties (vs. 7 in Spring 2003). The northern half of the state was represented only by Marathon County. Prestby photographed one in a nest box in Jefferson County on March 14, and on May 1 Panetti reported young begging in his Ozaukee County nest box.

Snowy Owl—Barely made it onto the seasonal list, with but one report (Manitowoc County, March 9, Tessen).

Barred Owl—Widespread throughout the state except in the extreme southeast, where David heard one hooting from his back yard at the same time as a Great Horned Owl (Racine County, April 16).

Long-eared Owl—Reports from 8 counties, with Belter finding a roost of 8–10 in Marathon County on March 21. Nestlings were reported killed by raccoons in Door County on May 26 (Lukes).

Short-eared Owl—Reported from only 3 counties, with no indication of numbers. A. Holschbach filed a Columbia County report on April 1. Risch had it in Taylor County on April 26, and Hall finished with a May 1 report from Portage County.

Northern Saw-whet Owl—Reported from 11 counties across the state, including a nest box sighting in Buffalo County on March 15 (Ma. O'Connor). Three were reported in Sauk County on March 18 (A. Holschbach). In Burnett and Vernon Counties very near EOP.

Common Nighthawk—A single April report, from Richland County on April 28 (Duerksen). Not reported again until May 8, when it reappeared in Dane and Sauk Counties. Stutz counted 60 going by in the former on May 20, while Hale had 25 in Jefferson County on May 23. Reported from 25 counties.

Chuck-will's-widow—The end of the season (and beyond) saw the WBN set abuzz with the report of 2 or even possibly 3 of these southern caprimulgids reliably calling every evening in Vernon County. They were first discovered on May 27 by Jackson and subsequently heard by many observers.

Whip-poor-will—First detected in Winnebago County on April 28 (Ziebell). Stutz had 6 in Dane County

on May 8. Heard calling alongside the Chuck-will's-widows in Vernon County and in 9 other counties not already mentioned.

Chimney Swift—Bruce reported the first in Winnebago County on April 16. At the other extreme, not recorded in Douglas County until May 24, and even at that only one of the two regular county chroniclers had logged it in by season's end.

Ruby-throated Hummingbird—Two April 30 reports: Strelka in Ozaukee County and Hall in Portage County. Tessen had 10 in Grant County on May 28.

Belted Kingfisher—BOP in Dane, Sauk, Portage, and St. Croix Counties, but 4 more reports by March 7 (Outagamie, Manitowoc, Rock, and Langlade Counties) were probably too early to represent returning migrants. The map finally filled in with an April 10 arrival in Douglas County (Johnson).

Red-headed Woodpecker—Always a difficult species for which to determine the true onset of migration. Burcar's birds from the first half of March (Columbia County on March 1 and Iowa County on March 13) can probably be discounted, but Klubertanz's March 27 Rock County individual is more problematic. With no indication of any overwintering in heavily covered Dane County, a first report there of April 28 (Martin) could fairly be taken as the onset of the main migration, though about 4 counties had reports in the preceding week or so. The three Winnebago County observers gave dates of May 8, 15, and 18. Twenty-seven counties filed reports, encouraging for this precarious species, though no more than 3 individuals were reported at any one time (Oconto County, May 11, Smiths).

Yellow-bellied Sapsucker—No BOP or early March reports, with 6 counties first recording it March 28–31: Dane, Milwaukee, Ozaukee, Door, Lafayette, and Manitowoc Counties. Stutz had 8 or more in Iowa County on May 15, and Tessen reported it on May 28 in Grant County. Representative departure dates for counties where it doesn't regularly breed include a range of April 18–26 for the three Winnebago County observers and May 8 for Dane County. On the other hand, Douglas County arrival dates were April 25 and 27.

Black-backed Woodpecker—Recorded by Stutz in Vilas County on April 10 and by Johnson in Douglas County on May 15. The latter likened its call to "a coach driver clucking to his horse."

Northern Flicker—BOP designation in 8 counties, as far north as Oconto and Douglas Counties. March 2 and 3 reports were also received, then a short gap before reports started coming in with some regularity from March 10 on.

Pileated Woodpecker—Reported this season from quite a few of the counties to the southeast of its historical entrenched range in the state, viz. Green, Rock, Walworth, Washington, Ozaukee, and Sheboygan Counties.

Olive-sided Flycatcher—Early dates for this generally latish migrant [this observer did not see one until June 5]

included May 4 (Dane County, Evanson), May 8 (Winnebago County, Ziebell and St. Croix County, Persico), May 9 (Washington County, Domagalski) and May 10 (Milwaukee County, Mi. O'Connor). Reported from 20 counties.

Eastern Wood-Pewee—Two Walworth County individuals on April 16 (Fitzgerald) remained unseconded [unthirded?] until May 6, when Burcar reported one from Iowa County. Like Chimney Swift, only reached Douglas County near EOP, with one of the two county chroniclers still awaiting it.

Yellow-bellied Flycatcher—The first of 15 county reports came from Portage County on May 10 (Hall). Only 3 more counties had been added by May 15, so the bulk of the passage was definitely in the second half of the month.

Acadian Flycatcher—A sighting as far north as Taylor County (May 24, Risch) has to be considered unusual. Far less unusual was to have the first sighting be in Grant County (May 9, Thiessen), where Tessen counted 8 on May 28 for the statewide high count. Seen in all in 9 counties.

Alder Flycatcher—Gustafson reported the first, in Waukesha County, on May 10. Only one other report before mid-month (May 12, Washington County, Domagalski). Thus 25 of the 27 county first reports came in the second half of May.

Willow Flycatcher—Pushed as far north as St. Croix, Dunn, Marathon, Oconto, and Door Counties, mostly at or near EOP. First appearance in Dane County on April 30 (Burcar), for only the third April record ever. Seven of the 23 reporting counties had recorded it by May 12.

Least Flycatcher—Appeared April 24 in Sauk County (A. Holschbach), with Dane and Portage Counties added on April 29. Four counties reported it on May 6. Brady counted 25 in Ashland/Bayfield Counties on May 21.

Eastern Phoebe—The third-earliest ever date was established when Bontly and Strelka saw an individual in Milwaukee County on March 6. Then there was silence until March 20 (Dane County, Martin), soon after which reports began coming in on a daily basis. The northeastern Wisconsin map was filled in by March 30 (Langlade County, Schimmels), but the northwestern counties of Barron, Washburn, Burnett, Douglas, and Ashland/Bayfield all had to wait until the first week of April.

Great Crested Flycatcher—Zehner's April 19 Milwaukee County sighting was 10 days ahead of the next (April 29, Dane County, Stutz). The latter observer reported 5 in Sauk County on May 23. Did not arrive in Douglas County until May 29.

Western Kingbird—Quick-witted observers on the WSO preconvention tour bus were able to note the salient field marks on a fly-by bird in Burnett County on May 21 (Heikkinen and Unson). A second bird in Iowa County (May 28) afforded Tessen a slightly more leisurely look.

Eastern Kingbird—Three April 29 reports, from Milwaukee, Dane, and Lafayette Counties (Strelka, Ashman, and Romano), with Winnebago County following the next day (Bruce).

Loggerhead Shrike—A March 27 bird in Columbia County found by Tessen wound up the highlight of a WSO field trip there. Yoerger followed with an April 4 Green County bird, and Fare found one in Racine County on April 30 to round out the season.

Northern Shrike—Seventeen counties submitted reports, with all but 4 dropping out of the picture by the end of March. The two latest reports came from Marathon County on April 10 (Belter) and Oconto County on April 13 (Smiths). Brady had 12 for the season on the Chequamegon Bay (Bayfield County) hawk watch, with 4 each day on March 6, 17, and 19.

White-eyed Vireo—First recorded in Lafayette (Romano) and Dane (Thiessen) Counties on April 29. Two birds stayed in the former county at least until May 28; Ashman also had one in Green County on May 31. Reports from 6 southern counties were complemented by one from Winnebago County on May 15 (Khan, Knispel).

Bell's Vireo—Sightings from more or less within its core range came from Dane, Lafayette, Iowa, Sauk, La Crosse, and Dunn Counties, beginning May 9 in Lafayette County (Romano). The most exceptional sighting was also the first: May 5 in Racine County (Gustafson).

Yellow-throated Vireo—The lone April report came on the last day of the month (Dane County, Yoerger). St. Croix County followed the next day (Persico), but the first big push was clearly the period May 4–7, with 9 more counties checking in during that period.

Blue-headed Vireo—Earliest was an April 20 individual in Ozaukee County (Frank). Dane, Sauk, and Door Counties had followed with reports by the end of the month. Ashman and Stutz both reported 8 individuals in Dane County on May 8.

Warbling Vireo—A. Holschbach recorded the first, in Sauk County on April 27. Dane, Lafayette, and Rock Counties followed by month's end. Absent on very few comprehensive county reports.

Philadelphia Vireo—Earliest report came on May 5 (Portage County, Hall). Persico had 4 in St. Croix County on May 15. Mentioned on reports from 13 additional counties.

Red-eyed Vireo—A bird well in advance of the main corps showed up in Milwaukee County on April 29 (Gustafson); it was then not recorded again until May 7, when it showed up in La Crosse County (Lesher). Marathon and Clark Counties reports on May 8 beat out many a more southern county by a considerable margin. Hilsenhoff reported 19 in Dane County on May 26.

Gray Jay—Reported from Florence County (May 8, Strelka) for the first seasonal report there since 1999.

Other reports came in from Forest, Vilas, and Douglas Counties.

Common Raven—Recorded in 19 counties for the season, as far south as Juneau and Adams Counties. Brady counted 25 in Ashland/Bayfield Counties on March 3.

Purple Martin—A cluster of April 14–19 arrival dates in 7 counties was preceded only by an April 6 Winnebago County report (Knispel). In contrast to recent spring patterns, northwestern counties were well represented among the 24 reporting counties, reports coming in from St. Croix, Barron, Burnett, Washburn, Douglas, and Ashland/Bayfield Counties.

Tree Swallow—Fitzgerald spotted two foolhardy (?) individuals in Kenosha County on March 5, flirting with the all-time early arrival date [March 2, 1973 in Milwaukee County]. The next report was filed March 20 (Szymczak, Waukesha County). A staggering 3000 or so were seen in Marathon County on May 8 (Belter).

Northern Rough-winged Swallow—Earliest report came from Dane County on April 8 (Martin), with a gap of a week before Ozaukee, Sauk, and Portage Counties saw it on April 15. Stutz reported 12 in Iowa County on May 22.

Bank Swallow—Seen first in Racine County on April 19 (Gustafson) and Dane County on April 20 (Burcar). Like all the swallows, the eventual distribution closely matched that of counties submitting relatively comprehensive reports.

Cliff Swallow—Hall (Portage County) filed the earliest report (April 10). Romano counted about 200 in Lafayette County on May 15.

Barn Swallow—An oddity: Spalding, an "incidental" Dane County reporter, had one there on April 3; the earliest date given by any of the 12 "comprehensive" reporters was April 17! There was an April 12 report from Sauk County (A. Holschbach), with multiple county sightings beginning in earnest on April 15.

Boreal Chickadee—North woods birders reported them this season from Forest County (Wood, March 20 and May 25) and Vilas County (Stutz, April 10).

Tufted Titmouse—The western bias of the species' march north was strongly in evidence again this season, with no reports to the northeast of Portage County, but reports from St. Croix (Persico) and Barron (Carlsen) Counties.

Red-breasted Nuthatch—Widespread throughout the state all season. Figures of 8 were given for both Forest and Vilas Counties on April 10 (Stutz). Tessen reported one "attempting to nest" in Winnebago County on May 4.

Brown Creeper—As always, difficult to separate residents and wintering birds from migrants, but the rich Dane County data reveals one BOP report (Ashman) and an earliest dated report of March 20 (Martin). Most of

the TTP reports came from northern counties (St. Croix, Douglas, and Langlade Counties). Departure dates noted included May 8 for Winnebago County (Ziebell) and May 18 for Portage County (Hall). Frank had 6 in Ozaukee County on April 8.

Carolina Wren—Reported from Racine, Milwaukee, Rock, and Dane Counties, including reports of 2 birds in Dane County (Martin) on April 9 and in Rock County on May 15 (Klubertanz).

House Wren—No fewer than 7 initial county reports April 17–19, as far north as Winnebago County. Barron, Douglas, and Ashland/Bayfield Counties dates were all well into May.

Winter Wren—No BOP or TTP reports, with the first of 6 late March reports filed from Manitowoc County on March 26 (Domagalski). Last reported from that county on May 2 (J. Holschbach) for a representative departure date, though there was a May 19 report from Ozaukee County (Frank). Reported from 20 counties and designated EOP in Sauk and Door Counties.

Sedge Wren—April 17 (Langlade County, Schimmels) becomes the third earliest arrival date. Four more counties reported it before the end of the month. Widespread throughout the state.

Marsh Wren—Reported from 3 counties (Ozaukee, Dane, and Lafayette) on April 29 and 2 more (Portage and Door) on April 30. Similar in distribution to the previous species except for less of a presence in the extreme northeastern counties (Florence and Langlade).

Golden-crowned Kinglet—Indicated as BOP only in Winnebago County (Ziebell). Bruce last saw it there on April 25. Strelka had one in Waukesha County as early as March 12, and 4 of the 12 Dane County observers gave an arrival date of March 20. Last reported in that county on April 27 (Evanson).

Ruby-crowned Kinglet—Three March 29 reports: Milwaukee (Zehner), Ozaukee (Tessen), and Dane (Ashman) Counties. Was in Taylor County as early as April 3 (Risch). Ashman tallied 35 in Dane County on April 17. Representative departure dates included May 14 in Dane County (Heikkinen and Unson) and May 16 in Milwaukee County (Bontly).

Blue-gray Gnatcatcher—Strelka and Klubertanz encountered the first on April 16 in Ozaukee and Rock Counties respectively, with Dane and Washburn Counties following the next day. Frank had 18 in Ozaukee County on April 18. In Ashland/Bayfield Counties, Brady reported 2 individuals on 2 separate dates (May 9 and 21).

Eastern Bluebird—Designated as BOP in 6 counties, with St. Croix County the farthest north (Persico). Also March 4 in Dane County (Burcar). Typical early migrant arrival dates can be inferred from 3 Milwaukee County dates of March 24, 25, and 29. Even taking Douglas County's notoriety as frequently the last county to be occupied into account, arrival dates there of May 8 and 15 seem awfully late! Note: There are no ac-

cepted Western Bluebird records for Wisconsin; Bruce in Winnebago County on May 19 gave an intriguing account of an individual in a bluebird flock, unfortunately only seen briefly, with a far darker shade of blue on its back.

Townsend's Solitaire—An April 4 Portage County individual was described as a lingerer from the winter season (Hall). S. Peterson lodged a report from Brown County on April 6. The last word from the habitual Sauk County band of overwinterers came on April 16 (Burcar).

Veery—Arrived April 29 in Milwaukee County (Zehner). The next reports were not until May 8 (Winnebago and St. Croix Counties). Though widespread, the fact that only 4 of the 12 thorough Dane County reporters had it might occasion some concern for population health.

Gray-cheeked Thrush—A May 1 first arrival in Door County (Lukes). Barron, and Washburn Counties dates were May 15 and 18 respectively. Reported from 20 counties.

Swainson's Thrush—Reported first from Door County (Lukes) on April 22; it was seen again there as late as May 26. There was one other April arrival, April 29 in Milwaukee County (Frank). In Douglas County from May 1 to EOP (Johnson). Reported from 29 counties. One can always hope that the maximum of only 3 at any one time (Dane County, May 19, Stutz) reflects either the paucity of reports giving numbers or just an oversight on this compiler's part.

Hermit Thrush—Ashman had a lingerer from the winter season in Dane County; other reports from that county would suggest about March 28 as the onset of migration, especially since the only earlier report came on March 26 (Milwaukee County, Bontly). Departure dates given for those two counties were April 30 in Dane and May 3 in Milwaukee. Tessen reported 4 in Winnebago County on April 9.

Wood Thrush—April 29 arrivals were noted in Ozaukee (Frank) and Dane (Burcar) Counties. Stutz reported 8 from the latter on May 8.

American Robin—The number of BOP counties went from 14 in 2003 to 20. All 8 of the reports covering Dane County for the entire season had recorded it by March 8. The latest arrival date was March 24 in Ashland/Bayfield Counties (Brady). Knispel reported 162 in Winnebago County on May 8.

Gray Catbird—Recorded in 6 counties by the end of April, beginning April 24 in Outagamie County (Petznick). The 8 reporters covering Dane County for the entire season gave a tight arrival cluster of April 29–May 4 for this conspicuous species.

Northern Mockingbird—Reported from 10 counties for the second consecutive spring. Most notable was the high number of northwestern counties submitting reports: Eau Claire, Burnett, Douglas, and Ashland Counties were all represented. Also of interest was that the reports did not begin until April 29, when Thiessen's Dane County individual began the proces-

sion. Eau Claire County apparently hosted 2 different birds (May 11 and May 18, Polk).

Brown Thrasher—Early individuals showed up in Dane County on March 28 (Martin) and Portage County on March 31 (Hall). Compare the spread of Dane County arrival dates for this far more secretive species with that for Gray Catbird above: the latest first date for Brown Thrasher was May 1. At least 6 counties gave April 15–18 arrival dates for the most concentrated cluster.

American Pipit—Always an interesting species to track. This year, a BOP report from Columbia County (Burcar) would indicate about the fifteenth overwintering record. There may have been two pulses to the migration, as initial April 16 and April 17 reports from Walworth and Ashland/Bayfield Counties stood alone until May 1, when it was first seen in Dane County, where Stutz reported 6 on May 8. Last seen on May 18 in Fond du Lac County (Gustafson) and on May 19 in Douglas County (Tessen). Reported from 13 counties overall.

Bohemian Waxwing—The lone report came from Ashland/Bayfield Counties, where Brady had them from March 8 to April 6, with an estimated 200 individuals on the earlier date.

Blue-winged Warbler—Simultaneous arrivals in Milwaukee (Gustafson), Ozaukee (Frank) and Dane (Burcar, Stutz) Counties on April 29, with Rock and Lafayette Counties on their heels the next day. Stutz reported 8 in Sauk County on May 23. Pushed north to Barron, Marathon, and Door Counties.

Golden-winged Warbler—The lone April report came on April 29 (Dane County, Stutz). Ashman had 5 there on May 10, and the county departure date was May 20 (Burcar, Martin). The statewide high count was 14, in Marathon County on May 16 (Belter).

Blue-winged ×Golden-winged Warbler—The only report was of a "Lawrence's" Warbler in Columbia County on May 24 (Dischler).

Tennessee Warbler—Three April 29 (Ozaukee, Sauk, and Door Counties) and 2 April 30 (Rock and Outagamie Counties) arrival dates. Still in Ozaukee, St. Croix, and Douglas Counties at EOP. Ashman had 30 in Dane County on May 17.

Orange-crowned Warbler—Thiessen's April 18 Dane County bird was the earliest reported. It was last seen in that county on May 15 (Heikkinen and Unson). Maxima of 6 were reported in Ozaukee County on April 29 (Frank) and in Sauk County on May 2 (A. Holschbach). The latest report was on May 25 (Manitowoc County, J. Holschbach).

Nashville Warbler—Emphatic arrival date (6 counties) of April 29, Door County (Lukes) among them. Ashman's 20 in Dane County on May 9 was the maximum.

Northern Parula—An April 19 individual in Sauk County (A. Holschbach) outdistanced the next arrivals by 10 days. Last seen in Milwaukee County on May 16 (Bontly)

and in Sauk County on May 23 (Stutz).

Yellow Warbler—Another sharp arrival delineation [see Nashville Warbler above], with 5 counties on April 29 and 2 more the next day, the northernmost being Outagamie County (Petznick) on April 30. Conspicuous: 4 of the Dane County observers gave one of the April 29 dates.

Chestnut-sided Warbler—Also arrived on April 29, though but in a single county (Milwaukee County, Gustafson). The next reports came from 3 counties on May 6.

Magnolia Warbler—Later than normal, with reported arrival not until May 6, when it showed up in Milwaukee (Gustafson, Bontly) and Dane (Ashman) Counties. Dodge, Outagamie, and La Crosse Counties followed the next day. Last seen in Dane County on May 25 (Heikkinen and Unson) and in Milwaukee County on May 26 (Bontly).

Cape May Warbler—Five May 6 arrival dates were preceded only by a May 1 report from Portage County (Hall). Persico counted an encouraging 40 in St. Croix County on May 15. Departed Milwaukee and Dane Counties on May 26.

Black-throated Blue Warbler—Arrived May 6 in Portage County (Hall) for the earliest report. Seen in 6 Lake Michigan counties and in Dane, Dodge, Winnebago, Portage, and Ashland/Bayfield Counties. Bontly's Milwaukee County range of dates was May 9–24.

Yellow-rumped Warbler—No BOP reports [vs. 4 in 2003]. First noted in Columbia County on March 20 (Burcar). Portage and Door Counties finished out the month's reports, both on March 29. Representative ranges for nonbreeding counties included April 6–May 24 for Manitowoc County and April 16–May 15 for Rock County. Still being seen at EOP in Portage County (Hall). Flocks of 250 or so were mentioned on Ozaukee County (Frank) and St. Croix County (Persico) reports on April 29 and May 1 respectively.

"Audubon's" Yellow-rumped Warbler—Stutz gave a careful description of one in Dane County on April 28.

Black-throated Green Warbler—Ashman's April 19 individual in Dane County was a true outlier, as there were no other April Dane County reports, and none anywhere else in the state until April 27, when one turned up in Portage County (Hall). Four counties were added on April 29 to indicate the migration was on in earnest.

Blackburnian Warbler—The two April reports came from Lafayette County on April 29 (Romano) and Dane County on April 30 (Thiessen). Still being reported from Milwaukee County on May 30 (Bontly). This is one of the warbler species that usually can easily muster over 30 county reports; this year, however, there were only 24.

Yellow-throated Warbler—Continued its steady increase in seasonal reports, being noted this year in 5 counties (Milwaukee, Waukesha, Dane, Green,

and Grant). The concomitant frequent lowering of the early arrival date was accomplished again after a lull in 2003, with an April 6 Dane County individual (Spalding et al) lowering the mark established in 2002 by 8 days. Reports from Dane County continued until at least April 13 (Evanson). Grant County birds returned on April 22 (Shillinglaws). For the first time in recent years, there were no Sauk County reports.

Pine Warbler—Appeared in Milwaukee (Mi. O'Connor) and Door (Lukes) Counties on April 17. Tessen had 8 in Douglas County on May 19. Still in Sheboygan County on May 22 (Brassers). The number of reporting counties (27) was a bit ahead of the count of recent years.

Prairie Warbler—Reported twice: on May 7 in Grant County (Howe) and on May 12 in Manitowoc County (Tessen).

Palm Warbler—Simultaneous earliest reports on April 18 in Dane (Heikkinen and Unson, Thiessen) and Manitowoc (Domagalski) Counties. Frank had 140 in Ozaukee County on April 29. Last reported from Dane County on May 17 (Heikkinen and Unson) and from Milwaukee County on May 24 (Bontly).

Bay-breasted Warbler—Birds on May 6 (Door County, Lukes) and May 7 (La Crosse County, Lesher) presaged a May 8 wave that hit no fewer than 8 more counties. At the other end of the period, exited Winnebago County on May 24, Dane County on May 25, and Milwaukee County on May 26.

Blackpoll Warbler—Arrived May 6 in Milwaukee (Bontly) and Dane (Martin) Counties. The latest Dane County date was May 26, with EOP reports in St. Croix and Milwaukee Counties, among others.

Cerulean Warbler—The first of 11 reporting counties was Dane County (May 1, Thiessen). Tessen had 3 in Grant County on May 25. An arc from La Crosse to Portage to Sheboygan Counties would encompass all the sightings.

Black-and-white Warbler—An April 19 Racine County sighting (Gustafson) was 5 days ahead of the next (Dane County, Burcar). Last reported from Dane County on May 20 (Martin) and from Milwaukee County on May 27 (Bontly).

American Redstart—Turned up first in Sheboygan County (Brassers), on the mildly late date of May 3. Stutz toted up a dozen or so individuals in each of Iowa and Sauk Counties, on May 22 and May 23 respectively.

Prothonotary Warbler—Dane County sightings encompassed the period from April 29 (Thiessen) to May 11 (Hansen). Klubertanz had the other April sighting, in Rock County on April 30. Latest report from Outagamie County on May 29 (Petznick). In all, reports came in from 10 counties.

Worm-eating Warbler—Reports came in from Sauk (Tessen) and Columbia (Schwalbes) Counties on May 11, followed by a May 15 banding report from Milwaukee County (Mi. O'Connor).

Ovenbird—Simultaneous earliest arrivals in 3 counties (Milwaukee, Ozaukee, and Dane) on April 29, with Portage County rounding out the April short list the next day.

Northern Waterthrush—Fairly early would be an April 17 Milwaukee County report (Mi. O'Connor). Next reported in Dane County on April 24 (Stutz), with Ashman counting 23 in that county on May 8. Last seen in Sauk County on May 16 (A. Holschbach).

Louisiana Waterthrush—Scanty Grant County coverage in recent years was reflected in the fact that Sauk County had the initial sighting for the third straight year, with Burcar reporting its return there on April 16. Also reported from Iowa, Juneau, Dane, Washington, Milwaukee, and Manitowoc Counties.

Kentucky Warbler—Unlike the previous species, this one's return to Grant County was documented (May 9, Lesher). Reports followed, in order, from Dane, Sauk, and Walworth Counties.

Connecticut Warbler—Arrived May 13 in Dane (Yoerger) and Portage (Hall) Counties. Reported from 11 counties outside its breeding range. Wood reported 2 from Douglas County on May 28.

Mourning Warbler—Dane (Ashman), Outagamie (Petznick), and Portage (Hall) Counties filed the earliest reports, all on May 10. Hansen counted 6 in Dane County on May 20. Reported from 27 counties.

Common Yellowthroat—Seen first on April 29 in 4 counties (Milwaukee, Ozaukee, Dane, and Lafayette Counties), with Rock County added the next day. Had reached Douglas County by May 12.

Hooded Warbler—Fifteen reporting counties was the best for the last 5 years, with an individual making it up once again to Douglas County (May 17) for Johnson's fourth ever individual there. Marathon and Portage Counties also featured reports. The "moral equivalent" of an all-time early arrival date [see introduction] was set by Hansen in Dane County on April 17, eclipsing a similar April 19, 2002 effort in Milwaukee County.

Wilson's Warbler—Zehner's April 29 Milwaukee County sighting is only the sixth ever for the month. Bontly was still seeing it in that county on May 27. Carlsen had a fairly early sighting in Barron County on May 5; his last there came on May 17. Johnson counted 15 in Douglas County on May 27.

Canada Warbler—May 3 (Dane County, Ashman) is a relatively early arrival date. Had been seen in 5 more counties by May 10. Stutz counted 10 in Sauk County on May 22.

Yellow-breasted Chat—Seen in Lafayette, Dane, Waukesha, Ozaukee, and Manitowoc Counties, between May 8 (Manitowoc County, Trick) and May 29 (Dane County, Yoerger). The Dane County bird, at a traditional location, inspired a couple of observers to try to capture the essence of its individualistic approach to musicianship. Heikkinen and Unson's ears reg-

istered its song as "raucous hoots of dubious musical quality," while Yoerger "could see its throat expanding like a balloon while making its guttural croaking call."

Summer Tanager—Reported 4 times by 4 different observers in Dane County between April 30 and May 20, with both males and females represented (among the observers as well as the birds!). Also seen in Milwaukee County on May 9 (Prestby), Waukesha County on May 11 (Moretti) and, most exceptionally, Marathon County on May 23 (Tessen).

Scarlet Tanager—This year's clear winner of the "one here, one there, then everywhere" award, with 9 [!] county arrivals on May 6 preceded only by April 29 Dane County (Martin) and May 2 Walworth County (Jacyna) reports. A check of the calendar reveals that May 6 was a Thursday this year, so the "weekend effect" cannot be trotted out for the explanation.

Spotted Towhee—Wisconsin's eleventh individual, first seen in Waukesha County on November 21, 2003, persisted there until April 29, when Gustafson reported him unceremoniously being chased out by an Eastern Towhee reclaiming his turf. Thiessen speculated on a Dane County bird seen on April 29 that he thought could be a Spotted x Eastern Towhee.

Eastern Towhee—Simultaneously reported first from 3 locations on March 27 (Rock, Green, and Dane Counties). It was seen in three other counties (Ozaukee, Door, and Waukesha) by April 9. In contrast, both Barron and Washburn Counties gave first dates of May 4.

American Tree Sparrow—Oconto, Sheboygan, Door, and Ashland/Bayfield Counties had departure dates of May 7, 8, 9 and 10 respectively. The Smiths had 43 in Oconto County at BOP. The last of Haseleu's Washburn County feeder flock apparently departed the same day (April 24) her first Chipping Sparrows arrived.

Chipping Sparrow—Mi. O'Connor had the earliest individual, in Milwaukee County on March 23. Dane, Rock, Door, and Waukesha Counties followed with reports before the end of the month. Reached Douglas County by April 10 (LaValleys).

Clay-colored Sparrow—Detected first in Portage County (April 17, Hall). Brady reported 21 in Ashland/Bayfield Counties on May 12. Seen in 30 counties throughout the state.

Field Sparrow—A species on a very leisurely return schedule, with county arrivals spread out over nearly two months. The first county report came from Dane County on March 26 (Burcar), the last from Douglas County on May 15 (Johnson). For a representative sample, the 3 Manitowoc County observers gave dates of April 18, 19, and 23.

Vesper Sparrow—Twenty-nine reporting counties represents a nice increase of 5 over Spring 2003. Burcar filed the earliest report, from Sauk County on April 2. Six more counties were added in the next week, including Burnett County on April 7 (Haseleu). Brady's 18 in Ashland/Bayfield

Counties on May 12 was the largest figure given.

Lark Sparrow—A. Holschbach caught the return of 4 individuals to its Sauk County stronghold on April 17, for the fourth earliest arrival date ever. That figure remained the maximum reported from any county. Also from within its historical range were reports from La Crosse (Lesher, April 27) and Rock (Klubertanz, April 30) Counties. The one extralimital report came from Milwaukee County on April 30 (Huf).

Savannah Sparrow—There were only 2 March reports: Dane County on March 26 (Ashman) and Taylor County on March 31 (Risch). That the migration was appreciably later than usual is indicated by the facts that no other Dane County reporter gave a date earlier than April 15, and that both Douglas County observers gave a May 2 arrival date. Brady's 40 in Ashland/Bayfield County on May 4 topped all other submitted totals.

Grasshopper Sparrow—First reported from Sauk County on April 23 by Burcar. Reports submitted from 15 counties overall, clustered in the south central part of the state and no farther north than St. Croix, Taylor, and Langlade Counties.

Henslow's Sparrow—Seen first in Racine County on April 20 (Gustafson), with Kenosha and Sauk Counties following on April 23. Howe reported 4 in Walworth County on April 25, Ashman 6 in Dane County on May 23. Seen in 16 counties, with a very similar distribution to the previous species.

Le Conte's Sparrow—On the early side was a Milwaukee County bird that Wood detected on April 17. Seen on the southern fringes of its breeding range in Oconto, Portage, and Marathon Counties, and in the northern counties of Ashland/Bayfield and Burnett. Tessen reported 15 from the latter county on May 20.

Nelson's Sharp-tailed Sparrow—Returned to the roster after a Spring 2003 absence with a May 20 Burnett County report of a single bird on the WSO preconvention trip (Prestby, Tessen et al).

Fox Sparrow—BOP in Dane (Ashman) and Oconto (Smiths) Counties. One other report (March 9, Manitowoc County, Tessen) was probably too early to reflect the onset of migration, which appeared to begin midmonth with a March 15 Columbia County report (Dischler) and 4 reports from the March 20–23 period. Widespread throughout the state the next few weeks, with most birds gone by mid-April. April 27 (Door County) was the latest date to appear on any report. A high count of 30 was returned from Douglas County on April 17 (LaValleys).

Song Sparrow—Noted as BOP in at least 5 counties. Representative arrival dates otherwise include March 13 in Portage County (Hall), March 20 in St. Croix County (Persico) and April 2 in Douglas County (LaValleys).

Lincoln's Sparrow—Arrived April 19 in Richland County (Duerksen). Scattered reports during the next week, then 2 reports on April 29 and 5 on April 30. Seen in Dane County until

May 20 (Stutz). At EOP in Portage (Hall) and Barron (Goff) Counties. Johnson had over 50 in Douglas County on May 17.

Swamp Sparrow—One BOP report (Dane County, Ashman). Next heard from on March 25 (Sauk County, A. Holschbach) and then again from Dane County on March 26 (Burcar). Douglas County observers gave arrival dates of April 22 and 28, while Frank counted 25 in Ozaukee County on April 29.

White-throated Sparrow—Milwaukee, Dane, and Barron Counties reported it at BOP, with one other report early in the season (March 9 in Ozaukee County). Reports from Columbia County on March 24 and Taylor County on March 25 presumably set the migration in motion in earnest. The Lukes had 70 in their "Door" yard on April 30, after Frank had tallied an impressive 310 in Ozaukee County the day before.

Harris's Sparrow—A somewhat more protracted and widespread migration than Spring 2003, with birds observed between April 29 (Columbia County, Dischler) and May 17 (Douglas County, Johnson). There were 12 reporting counties, well scattered throughout the state. The largest number mentioned in any report was 5.

White-crowned Sparrow—Sontag filed a BOP report in Manitowoc County. Either very early or a previously undetected wintering bird would be Martin's April 5 sighting in Dane County, where it was next reported on the more typical date of April 25. That date was preceded only by April 17 and April 24 reports from Taylor and Douglas Counties respectively. Lingered in Portage County until EOP.

Dark-eyed Junco—A reported high count by Evanson of 90 (Dane County, April 17). The final Dane County report came on May 11. Still to be found in Richland County on May 25 (Duerksen).

Lapland Longspur—Fairly widespread, with reports from 17 scattered counties, lasting well into May. Fitzgerald, for example, encountered a flock of 500 or so in Dane County as late as May 8. That was the largest received figure, but other triple digit sightings were reported from Sauk, Dodge, and Door Counties. The last report, from Burnett County, came on May 20.

Snow Bunting—Not a banner year for this species, with reports from but 9 counties, with Barron, Taylor, Marathon, Winnebago, and Ozaukee Counties forming the southern boundary of the reporting region. Sizable flocks were indicated only in Douglas and Ashland/Bayfield Counties. The latest report (Ashland/Bayfield County, Brady) was dated April 29.

Rose-breasted Grosbeak—Arrival sharply delineated, with 4 counties seeing it on April 29 and 5 on April 30. Washburn County (Haseleu) was the northernmost county reached in this initial wave. A. Holschbach reported 10 in Sauk County on May 23.

Blue Grosbeak—Fitzgerald found a singing male in Racine County on

May 11; Gustafson and Tessen relocated it the following day.

Indigo Bunting—Bruce sighted it first, in Winnebago County on April 28, his first April sighting in that county in over 30 years of observation. Milwaukee, Ozaukee, and Portage Counties followed the next day.

Painted Bunting—Spring sightings appear in danger of becoming an annual event, as it was reported thus for the third straight year. Or maybe not: a check of the records reveals another cluster from 1983 to 1985, with no sightings from 1986 to 2001. This year was the second time two individuals were reported [there were two birds in Racine County in 1984]. Both birds were photographed. A Calumet County individual was present from May 4 to May 19 (Funk and Jodar), and the Osinskis reported a male in Door County on May 12.

Dickcissel—Just arriving at EOP as usual, with a May 25 Grant County report (Tessen) seconded by a May 30 Green County arrival (Yoerger).

Bobolink—First seen on the relatively late date of May 6, when it was noted in Iowa (Burcar), Winnebago (Knispel), and Barron (Carlsen) Counties. However, pretty much the entire state appears to have been repopulated within a week or so. Stutz reported 15 in Dane County on May 8.

Red-winged Blackbird—The number of BOP counties (17) is by far the largest in recent years. All active Dane County observers had seen it by March 6. Only a few northern counties can be used to gauge the pace of the migration, with arrival dates of March 14, March 24 and March 29 given for Barron, Ashland/Bayfield, and Douglas Counties respectively.

Eastern Meadowlark—In Washington (Domagalski) and Door (Lukes) Counties at BOP, with an additional March 2 report from Walworth County (Fitzgerald). The Smiths reported 7 in Oconto County on March 11. Did not reach northern tier counties until the first week of April.

Western Meadowlark—Reported from 15 mostly western counties, reaching only Walworth and Racine Counties in the eastern part of the state. The earliest report came from Portage County (March 19, Hall). No indication of numbers could be gleaned from the reports.

Yellow-headed Blackbird—Statewide arrival first in Sauk County on April 15 (A. Holschbach). Reported eventually from 18 counties throughout the state, with Brady mentioning a total of 9 in Ashland/Bayfield Counties on May 15.

Rusty Blackbird—Designated BOP in Columbia (Burcar) and Oconto (Smiths) Counties. Seen in about 5 more counties by March 10. A hit-or-miss species: Ashman encountered a very encouraging 3000 in Dane County on March 26, yet 4 of the most active 8 Dane County observers missed it completely. Last seen on May 1 (St. Croix County, Persico). Seen in 21 counties.

Brewer's Blackbird—Reported in Dane County on March 1 by Burcar, then not again there until April 11

(Martin). After a March 7 Dodge County report (A. Holschbach), there was nothing until it was noted on March 20 in Portage County (Hall). The southernmost county reporting it to EOP was Winnebago County (Bruce). Reported from 27 counties.

Common Grackle—Eleven county BOP reports far eclipses anything in recent years. The northernmost of these was Clark County (Risch). Seven more counties were added by March 5, with Douglas County last as usual with a March 28 arrival there (Johnson).

Brown-headed Cowbird—This species generally lags a couple of weeks behind Red-winged Blackbird and Common Grackle, and indeed an accounting of 3 BOP reports (Dane, Waukesha, and Manitowoc Counties), with 5 more counties added by March 9, mirrors their pattern. In the north central part of the state, arrival dates for Portage, Marathon, and Taylor Counties were March 23, 28, and 31 respectively, with Ashland/Bayfield Counties reached on April 5.

Orchard Oriole—Returned to Ozaukee County on April 29 (Frank). There were reports of 5 in Sauk County on May 15 (Stutz) and of 4 in St. Croix County on May 22 (Persico). Pushed well north to St. Croix, Dunn, Green Lake, Winnebago, Oconto, and Door Counties, being reported from 23 counties altogether.

Baltimore Oriole—The last of several passerines with very sharply demarcated arrival dates. In this case, we find 2 April 28 reports (Zehner in Milwaukee County and Ziebell in Winnebago County), followed by 6 more counties on April 29 and 2 on April 30.

Pine Grosbeak—Returned after a total absence in Spring 2003 with reports from 7 counties. The Smiths reported up to 7 in Oconto County. All but 2 reports came from March, with a Florence County April 21 report (Burcar) the latest. The other 5 reporting counties were Door, Marathon, Ashland/Bayfield, Barron, and Burnett.

Purple Finch—Seen virtually throughout the state (28 counties), with only the very southern tier counties scantily represented (Lafayette County only, where Romano saw it as late as May 4). May 4 was also the departure day for Columiba County (Schwalbes), with lingerers in Dane County noted until May 18 (Hilsenhoff).

Red Crossbill—Reported 3 times. Brady had 1 in Ashland/Bayfield Counties on April 13. Burcar reported them in Florence County from BOP until April 19. Finally, they were in Douglas County from BOP until May 15 (Johnson).

White-winged Crossbill—Belter encountered them in Marathon County from March 13 to March 21. Brady reported them in Ashland/Bayfield Counties until April 17, with a maximum at one time of 3.

Common Redpoll—A major invasion year, with reports from 26 counties, pushing as far south as Dane, Jefferson, Waukesha, and Milwaukee Counties. High counts of around 200 were posted twice, first in Marathon County

on March 26 (Belter) and then in Ashland/Bayfield Counties on March 30 (Brady). Lingered into April in about 7 counties, with Ozaukee County the southernmost, though it barely made the cut (April 1, Frank). Gone by April 20 (Douglas County, LaValleys).

Hoary Redpoll—Persisted from the winter season in at least 3 locations. Sontag's Manitowoc County pair was last seen on March 3. An Ashland County bird departed on March 25 (Bruhnke). Johnson enjoyed her Douglas County visitor until April 4. In addition, Belter reported a Marathon County individual on March 20.

Pine Siskin—Widespread throughout the state, with 27 county reports. The largest figure received was 20 (Dane County, March 6, Ashman). Still present in Milwaukee County on May 12, in Dane and Portage Counties on May 15, and in Ozaukee County on May 18. May 29 (Oconto County, Smiths) was the latest date noted.

Evening Grosbeak—Reported from 6 northerly counties and Columbia County, where the Schwalbes noted it on April 26. The Smiths had a maximum of 5 in Oconto County between March 14 and March 28.

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White-breasted Nuthatch *by Dennis Malueg*

"By the Wayside"—Spring 2004

Documentation for rare species includes Yellow-crowned Night-Heron, Swainson's Hawk, Wilson's Plover, Black-necked Stilt, Ruff, Parasitic Jaeger, White-winged Dove, Loggerhead Shrike, Townsend's Solitaire, Yellow-throated Warbler, Worm-eating Warbler, Spotted Towhee, Blue Grosbeak, and Hoary Redpoll.

YELLOW-CROWNED NIGHT-HERON (*Nyctanassa violacea*)

1 May 2004, Campbellsport, Fond du Lac County—We have a water garden and the bird was first seen in the morning for several minutes between 7:00 and 7:30 a.m. as it stood on our deck railing about eight to ten feet from our pond. We were at a window in our house only about five feet from the bird. At first glance it appeared to be a Black-crowned Night-Heron by its size and shape; however, it had a white cheek patch and a white/yellow section of feathers that went from the front of its head over the top to the back of the head. We have only seen this species before in Florida. We are familiar with the Black-crowned Night-Heron, as we see them at Horicon Marsh frequently. Immediately after the sighting the identification was verified by looking at the Peterson field guide. The bird was sighted again in the evening at about 6:20 p. m. standing on the rocks that edge the pond. Photos were taken at both sightings.—*Tom & Sandy Pfotenhauer, Campbellsport, WI.*

SWAINSON'S HAWK (*Buteo swainsoni*)

6 April 2004, U.S. Highway 53, Barron County—I observed a large hawk circling at a distance ahead of my vehicle over the highway. My first impression was of size. I wondered momentarily if it was an eagle, but as we approached I judged the bird was not quite that big or that "heavy" looking. It did not flap while viewed, but soared in a circle. The top of the bird appeared to be dark brown, with no white visible on the head or the top of the tail. As we came up beneath the bird, it circled and tilted in its soaring so that its underside turned slowly and fully to my view in good afternoon light. I was surprised (and startled) to see a wing pattern of light underwing coverts and darker remiges. The overall impression was of a buteo, with long wings, but not as elongated as an Osprey's, and without crooked "wrists." The remiges were a uniform medium gray or

brown, not close to black, and the tail presented markings which could best be described as a "smudgy gradation" from darkest at the tail tip to lightest at the undertail, but overall not as dark as the flight feathers. The neck/chest were not solidly dark, though brown was evident on the head. The body, like the underwing coverts, was light-colored from undertail to neck, with a suggestion of darker markings at the neck.—*Steve Betchkal, Eau Claire, WI.*

23 April 2004, Chequamegon Bay, Bayfield County—During my regular hawkwatching duties, I was scanning for raptors and came across a gliding bird resembling a harrier-like buteo. Wings were relatively long and pointed and held in a moderate dihedral. The tail was short and broad. Simply from shape alone, the bird was clearly a Swainson's Hawk. Eventually it glided, flapped and soared within a hundred yards of me, providing excellent views of all field marks. The head was dark with a lightish throat. The breast and belly were rufous down to the undertail coverts (no "bib" was evident), which were nearly white. The underwing coverts were mostly rufous with some minor, irregular pale streaking, and the flight feathers were grayish-black, distinctively darker than the underwing coverts. The tail was light grayish-brown with a distinct dark subterminal band and indistinct narrower dark inner bands. From above, the bird was even brown throughout its upperside without any distinct mottling or pale feather markings.—*Ryan Brady, Ashland, WI.*

Wilson's Plover
(*Charadrius wilsonia*)

9 May 2004, Wisconsin Point, Douglas County—While conducting Piping Plover surveys on Wisconsin Point, I flushed a plover off the beach. My first impression was, "That plover had a really large black bill!" I immediately thought I had a Wilson's Plover. Only a month earlier I had seen several on Bolivar Flats on the Gulf Coast of Texas near Galveston. I flushed the plover several more times before getting a good look at the bird and several photos. There are two Wilson's Plover records from Minnesota Point in Duluth in July 1981 and May 1982, only a few miles from this sighting.

Description: Its large black bill was obvious. It made the bird look like it would tip over. The legs were pinkish to flesh-colored . . . not orange, and not black. The bird's back was darker than a Piping Plover's but lighter than a Semipalmated's. It had a complete brownish neck band that narrowed in front to a thin black band. It had a wide pale band around the back of the neck. Above the eye was a pale area that was somewhat buff colored at the rear. There appeared to be some buff below the eye as well. In flight the dark rump, dark central tail and white outer tail feathers were obvious. The above field marks seem to point to an adult female Wilson's Plover (Fig. 1).

The bird did not associate with any other birds. It fed at and above the surf line. When approached too closely, it straightened up for a second, which made it seem to be bobbing. Sibley illustrates this in his field guide and calls it the "alert posture."

I immediately called Robbye John-

Figure 1: Wilson's Plover at Wisconsin Point in Douglas County on 9 May 2004 was photographed by Sparky Stensaas.

son of Superior who also came and saw the bird. I also alerted the Duluth hotline compiler Dave Benson. Four Duluth birders were able to see it before the end of the day [the bird could not subsequently be relocated].—*Sparky Stensaas, Wrenshall, MN.*

Black-necked Stilt (*Himantopus mexicanus*)

15 April 2004, Perrot State Park, Trempealeau County—From the southeast end of the parking lot at the boat landing, we looked straight out across the Trempealeau River to the pool beyond a slender, vegetated island. There we spotted a tall, slender, very long-legged shorebird with black upper and white lower parts. Legs were bright rose-red. There was a white circular area around the eye. A thin black stripe went down the back of an otherwise white neck. The bill was dark, straight, and slender. The tail was not seen beneath long, black wings. Blue-winged Teal were present, swimming a few yards from the stilt; in the same scope view these teal gave a good size marker. The stilt's body was much slenderer, its neck longer and thinner, so that although the body lengths were similar, the stilt's small body and long slender neck gave it the appearance of being a much smaller bird. During the first few minutes of observation, the stilt was wading in shallow water along the far side of the island in clear view. Its legs were more than halfway out of the water as it moved about. It then appeared to become agitated, tilting its head to

look up at the sky (we did not see any aerial predators) and beginning to walk toward nearby tall vegetation on the island.—*Jean Ruhser, Holmen, WI.*

13 May 2004, Madison, Dane County—It was pouring rain at Nine Springs Lagoon as we watched the two birds foraging in a small pool. They were tall and slender, almost twice as tall as the closest other shorebird, a Stilt Sandpiper, with long bright pink legs, black upper and white underparts. The black bill was long and thin and there was a white patch above the eye. One of the birds was approximately 10% larger than the other; this larger bird's back was glossy black, while the other's was brownish-black, suggesting that this was a male/female pair. They foraged by picking at the surface of the water, in great contrast to the Stilt Sandpiper's probing beneath the surface. They were graceful in their movements, though never seen in flight.—*Philip Ashman, Madison, WI.*

14 May 2004, Arlington, Columbia County—Sean Fitzgerald, Eric Howe, Tom Prestby and I spotted two individuals about 30–50 yards out on the smaller pond closer to the road than Goose Pond around 3:00 in the afternoon. We observed them for about 5 minutes. The birds had black on the back, neck and wings with a long black bill. The flanks and side of the neck were white. Very long bright pink legs were prominent. The birds seemed unsettled. They were constantly looking around, moving around a lot and keeping close to the edge of the pond. Eventually they flew away from us, landing in the center rear of the pond. My companions all took digital photos.

Other species were easily eliminated: nothing else is really black and white with bright pink legs like stilts are. Avocets are big and tall but have orange or gray necks and grayish legs. Godwits and other large shorebirds are mostly brownish or monochromatic in plumage. I have seen the species once before in Wisconsin.—*Seth Cutright, West Bend, WI.*

Ruff (*Philomachus pugnax*)

22 May 2004, Highway 29 and Lily Lake Road, Brown County—The Ruff was slightly larger than a Killdeer that came close to the bird. The throat, breast and mantle were black. Belly, sides and undertail coverts were snow white. Underwings were all white. Legs were light orange in color. Overall, the body was fairly plump. The bird was in molt, with a dark-patterned back. The bill was slightly longer than the head length and was dark and hadn't turned partly orange yet. In flight, it displayed a U-shaped white rump area. Initially, the bird was observed standing on a knoll. It then flew to the water's edge to feed. It walked up into a plowed field, preened and then rested for 10–15 minutes. Then it came back to the water's edge to resume feeding. At one point the bird stood extremely erect. Compared to a Black-bellied Plover, the bill was longer, the body more slender, the legs orange rather than black. Feeding movements were very different. Curlew Sandpiper was briefly considered, but the breast was black, not chestnut colored, and the bill shape was not down-curved or as long. This is the same pond that featured a Ruff in May 2003!—*Ty & Ida Baumann, Green Bay, WI.*

Parasitic Jaeger (*Stercorarius parasiticus*)

19 May 2004, Wisconsin Point, Douglas County—Daryl Tessen spotted an "interesting" bird resting on a log in the water. Much discussion followed as to identification. When the bird got up it became obvious that it was a jaeger. I saw one bird through binoculars (not much larger than the tern it was chasing) and another through a scope. The one studied more closely was a light morph adult, with obvious white flashes at the base of the primaries on an otherwise all-dark wing. Additionally there was a light patch on the belly, a dark neck band, black cap, light cheek and long thin tail with no twist. Long-tailed Jaeger would have two-toned wings, and Pomarine Jaeger should have double light crescents on the primaries and could have a blob (twist) at the end of the central tail feathers.—*Robbye Johnson, Superior, WI.*

White-winged Dove (*Zenaida asiatica*)

13 May 2004, Milwaukee, Milwaukee County—This bird was reported in the Milwaukee Journal Sentinel, on the WSO hotline, and apparently as general news on the internet, judging by the number of non-birders who asked me if I had seen the dove! When I arrived at the reported location, Brian Boldt was photographing (Fig. 2) the dove (he was the first to report it) and he pointed to its location on a branch of a spruce tree. Viewing conditions were adequate, but not perfect, be-

Figure 2: White-winged Dove photographed in Milwaukee on 13 May 2004 by Brian Boldt.

cause the bird's tail was obscured and lighting was not ideal. Nevertheless, through my 7x42 binoculars I was able to see that this dove was larger and bulkier than a Mourning Dove. It was overall tan in coloration with a black crescent on the face and had a dark thin bill. At the bottom of the folded wing was a noticeable white line which extended from behind the shoulder area nearly to the primaries. A small thin area of black from the wingtips was also visible below this white line. I did not hear the dove call or see it in flight, as it remained nearly motionless during my twenty minute observation.—*Thomas Wood, Menomonee Falls, WI.*

14 and 15 May 2004, Milwaukee, Milwaukee County—I was in Texas, looking at White-winged Doves every day, when this bird was found, so I went to see it at the first opportunity upon returning, even though it was pouring rain. Jeff Rusinow spotted the dove on a low branch of a scrubby evergreen tree. About all we could really see was the white patch along the folded edge of the wing.

The next day in late afternoon, I refound the bird sitting on the branch of a small maple tree. Its overall shape and appearance was similar to a Mourning Dove, but it was a little plumper and had a shorter tail. The body was a soft brownish gray with the prominent white strip along the lower edge of the folded wing. The short dark mark on the face was visible, but the bird sat in the shade so the color around the eye (visible on all those Texas birds) could not be seen. The bird did not fly or sing while I watched it.—*Marilyn Bontly, Bayside, WI.*

Loggerhead Shrike
(*Lanius ludovicianus*)

4 April 2004, County Highway X, Green County—While going south on the highway, I drove past a gray bird perched on an electrical wire. As I passed, I noted the bold black stripe on the head and black on the wings. I immediately recognized the bird as a shrike. I stopped the car about 60 yards past the bird and was able to first observe it through my 10x binoculars and then my 45x spotting scope. While viewing through the scope, I referenced my Sibley guide. I noted that the bird had a very short thick black bill. The upper mandible was slightly longer than the lower and was not prominently hooked, as a Northern Shrike's would be. The eye stripe was very wide with a well-defined edge between the gray of the cap and the black of the stripe. I noted the absence of white along the edge of the stripe as is typical of Northern Shrikes. After I observed the bird perched for several minutes, it dropped down to begin actively hunting. It flew low over the ditch, moving from perch to perch. It dropped down into the grass several times and landed in the road a few times as well.—*Quentin Yoerger, Evansville, WI.*

Townsend's Solitaire
(*Myadestes townsendi*)

6 April 2004, Ephraim, Door County—At about 4:30 p.m. and about 20 feet from the edge of Anderson's Pond, I saw among the many robins a bird I first thought might be a Northern Mockingbird poking around in

the leaf litter on the ground. When it flew, it rose quickly and headed towards the juniper and apple trees in the nearby old orchard. I noted that it was actually smaller than a mockingbird, uniformly gray with a distinct white eye ring. It had soft-colored, mostly tan, barring on the back of the wings where it folded onto the tail area. The long tail with a touch of white on the sides was strikingly noticeable when the bird flew. To me, it looked like a thrush with a long tail, but its bill was definitely shorter than those of other thrushes. No vocalizations were heard. I had the sun at my back and enjoyed the bird for about half a minute before going home to put the sighting on the hot line.—*Susan Peterson, Ephraim, WI.*

Yellow-throated Warbler (*Dendroica dominica*)

2–4 May, 2004, Dousman, Waukesha County—This bird appeared in our yard and stayed for three days. The back was gray, the throat bright yellow, the two wingbars white. There was a white line over the eye. The face was black and black spots bordered the breast. The bird behaved in a manner similar to a nuthatch or Black-and-white Warbler, clinging to the trunks and limbs of trees. He visited our suet log, which contained a homemade suet dough containing peanut butter. He also sampled the grape jelly and oranges put out for the orioles. He was competitive with the other birds and seemed to learn quickly where the food was. He sang his typical song a few times, but not very often.—*Patrick & Anne Moretti, Dousman, WI.*

Worm-eating Warbler (*Helmitheros vermivorus*)

18 May 2004, Baxter's Hollow, Sauk County—I went to look for the Worm-eating Warbler that is traditionally present. On my first pass through I couldn't find the bird, but on the way back I got out of the car and heard very different, sharp chip notes. As soon as I got the bird in my binoculars I knew it was a Worm-eating Warbler. The bird was a unique buffy green color and was large for a warbler. The head was striped black and a black line went through each eye. The bill was also noted to be large. It fed in the leaves very close to me and flew across the road while I was there.—*Tom Prestby, Wauwatosa, WI.*

Spotted Towhee (*Pipilo maculatus*)

21 November 2003 to 19 April 2004, Muskego County Park, Waukesha County—I observed this bird 28 times during the spring season, for a total of 81 times since I discovered it on my daily exercise walk on 21 November 2003. Little did I know that the towhee I first saw that day would turn out to be a Spotted Towhee, and that it would stay for nearly five months. After many observers had seen it subsequently, I took Noel Cutright's advice and began putting out seed for the towhee. There were times I regretted initiating this ritual (cold, snowy mornings day after day!), but once started, I couldn't stop—and didn't—until the bird left on 19 April. On that morning, the summer resident Eastern Towhee returned to the park (it nests in the same area frequented by

the Spotted Towhee). As it persistently sang while establishing its territory, the Spotted Towhee was also scolding right in front of me. I knew one of these males would chase out the other. Unfortunately, it was the Spotted Towhee which departed, never to be seen or heard from again. It was a privilege, however, to enjoy the presence of such a beautiful and cooperative bird for so long and to enjoy the company of so many other birders who came to see it.—*Dennis Gustafson, Muskego, WI.*

Blue Grosbeak (*Passerina caerulea*)

11 and 12 May 2004, Hill Valley and Maple Roads, Racine County—I pulled up alongside a pond on Hill Valley Road and noticed a cowbird-sized dark blue bird flush up out of a ditch and fly into a thicket about 15 yards ahead. When the bird flew it had a much longer tail than I expected from an Indigo Bunting or Eastern Bluebird, the only other blue-colored birds that size. I quickly got out of the car and pished by the thicket the bird had flown into. A medium-sized Indigo Bunting-like bird popped out and I was able to observe it at a range of 15-20 feet. The bird had a very large grayish beak and a dark blue body with chestnut wing bars. That made it obvious that this was an adult male Blue Grosbeak. I watched this bird for about two minutes before it flew across the pond and into a deciduous woodlot with bordering shrubby growth. I am very familiar with this species, having observed it in Texas and North Carolina. Dennis Gustafson and Daryl Tessen heard this bird singing the next day, although they were never successful in getting a view.—*Sean Fitzgerald, Burlington, WI.*

Hoary Redpoll (*Carduelis hornemanni*)

13 January to 3 March 2004, Manitowoc, Manitowoc County—Several flocks of redpolls made the containment vessel and nearby neighborhoods their feeding ground this winter. On many visits to the containment, a frosty redpoll was found with a flock of eight Common Redpolls. This bird was easily found even in flight, lighting permitting, by its smaller size and lighter appearance. On a single occasion, a male was found. It was easily distinguished from the Common Redpolls by its very light appearance, a pink wash on its breast and very light streaks on the sides. The back was almost white and streaked with fine darkish brown. The forehead was white and continued as a white eye line. This contrasted with the darker eye line of the Common Redpoll. The rump was white and undertail coverts unstreaked. The wing also appeared lighter. The female was more frequently found and was also smaller and very light. It, however, lacked the pink "blush" on the breast, and the sides were more streaked than in the male, though still noticeably finer than on the Common Redpoll. Other field marks were similar to the male. An attempt to notice the smaller, more conical bill failed. This must be a field mark secured only with a bird in the hand or at very close range at a feeder. The Common Redpolls often announced their presence, but I never heard either Hoary Redpoll vocalize separately.—*Charles Sontag, Manitowoc, WI.*

WSO Records Committee Report: Spring 2004

Jim Frank

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The WSO Records Committee reviewed 57 records of 25 species for the spring season, accepting 42 of them. Highlights of the season included Wisconsin's first record of a Wilson's Plover, second record for White-winged Dove, and eleventh and twelfth Painted Bunting records. The state list reaches 423 species with the addition of the Wilson's Plover.

Observers were notified of the committee's decisions by postcard in the instance of accepted records and by personal letter in the case of records not accepted.

Accepted

Glossy Ibis—
#2004-038 Fond du Lac Co., 29 May 2004, Bahls (photo).

A long-legged, long-necked wader, with a long, gray, decurved bill was reported. The head, neck, and upper back was iridescent bronze-maroon in color while the lower back was greener. A thin, but noticeable, broken white border almost surrounded the eyes and the bluish facial skin. This white line disappeared behind the dark eye. The legs were gray. (The bluish facial skin, dark eyes, gray legs, and broken, white, facial skin border distinguish this species from the White-faced Ibis with its red-pink facial skin, red eyes, red legs, and complete, white, facial skin border)

This is Wisconsin's eighth record, only the second in the past 15 years, and the only spring record in the past 39 years.

***Plegadis* Ibis (species?)—**
#2004-014 Marathon Co., 16 May 2004, Belter.

Viewed only in flight, this dark brown, small heron-sized bird had a long neck and long down curved bill. Unless ibises are seen well and in breeding plumage, most of these identifications can only be taken as far as a genus identification.

Barrow's Goldeneye—
#2003-037 Milwaukee Co., 3 March 2004, Gustafson.

This male duck was similar to a Common Goldeneye, but the fore-

head rose steeper, the white facial spot was crescent-shaped, the black of the back extended down lower at the shoulder, and the black of the back extended lower down the sides. This extension of the back's black on the sides encompassed some white spots, in contrast to the Common Goldeneye's flanks being white encompassing some black spots.

This was the latest winter sighting of the Barrow's Goldeneye, now reported for three consecutive winters at Doctor's Park after seven consecutive winters being reported 2 miles north at Virmond Park.

Swainson's Hawk—

#2004-018 Barron Co., 8 April 2004, Betchkal.

#2004-019 Bayfield Co., 23 April 2004, Brady.

The Bayfield County bird was a long-winged buteo, soaring with a slight dihedral to the wings. A dark head, white throat, and rufous breast and belly were evident. The underwing coverts were rufous with some pale markings, but the flight feathers were gray-black. The tail was grayish with faint, narrow bands, but a dark subterminal band.

The Barron Co. individual was dark only on the upper chest, with white on the remainder of the breast, belly and underwing coverts. These white underwing coverts contrasted with the dark flight feathers again.

Wilson's Plover—

#2004-020 Douglas Co., 9 May 2004, Stensaas (photo, see "By the Wayside"), R. Johnson (photo).

This small plover had a brown back, intermediate in color between the mantle color of a Semipalmated Plover and that of a Piping Plover. The white breast was broken by a single, brownish, upper breast band. Above this upper breast band, a white band completely encircled the neck. Above the eye was a light superciliary line, fading to buff behind and above the eye. The most striking characteristic was the disproportionately heavy, longer, black bill.

This is Wisconsin's first record of a Wilson's Plover. Minnesota has two records from 1981 and 1982 at Duluth's Minnesota Point, only a couple of miles from this sighting.

Black-necked Stilt—

#2004-021 Trempealeau Co., 15 April 2004, Ruhser.

#2004-022 Dane Co., 13-17 May 2004, Ashman (2 birds); 13–16 May 2004, Heikkinen, Unson (2 birds); 13–16 May 2004, Stutz; 14 May 2004, A.Holschbach (2 birds); 15 May 2004, T. Wood; 17 May 2004, Hilsenhoff (2 birds); ? May 2004, McDowell (photo).

#2004-045 Columbia Co., 14 May 2004, S. Cutright (2 birds).

#2004-0237 Dodge Co., 16 May 2004, T. Wood, Tessen; 18 May 2004, Gustafson (3 birds).

Noted were the overall tall and slender appearance of the birds. In addition, the long, pink-red legs, the black crown, nape, back, and wings in contrast to the white throat, foreneck, breast, and belly were noted. Also reported was the thin, relatively long, black bill.

At least 6 if not 8 individuals were involved in this unprecedented invasion of Wisconsin.

Ruff—

#2004-024 Brown Co., 22 May 2004, Baumann, Baumann; 22 May 2004, Tessen.

This shorebird was similar in size to the Lesser Yellowlegs in this pond and larger than a Killdeer. This bird was brown in overall color and had a bulkier body in proportion to the head. The legs were orange. The breast was black, contrasting with a white belly. The back had dark markings in the overall brownish coloration. The bill was slightly longer than the length of the head and gray in color. In flight, the U-shaped, white rump patch was evident.

This is the second consecutive spring sighting at the exact same pond in Brown Co.

Eurasian Collared-Dove—

#2003-066 Columbia Co., 27 March 2004, T. Wood.

This dove was slightly larger and bulkier than the associated Mourning Doves. The tail was wider and squared at the end. Its overall color was light beige-gray with a black crescent on the nape and primaries darker in color than the general plumage. The undertail was black proximally with dark gray undertail coverts.

White-winged Dove—

#2004-025 Milwaukee Co., 12 May 2004, Gustafson, Tessen, Idzikowski (photo), Boldt (photo), Prestby (photo); 13 May 2004, T. Wood; 14, 15 May 2004, Bontly.

This dove was similar in size to a Mourning Dove, but slightly plumper and a bit shorter tailed. The body color was similar, but slightly grayer than that of a Mourning Dove. A readily apparent white edge to the folded wing was noted. The primaries were very dark gray and a black sideways teardrop was seen on the lower cheek. A black bill and orange feet completed the description. In flight, the white wing patch extended from front to back on the wing along the lateral edge of the upper wing coverts, contrasting noticeably with the dark gray flight feathers. A white edge to the tail was noted on the lateral two-thirds of each side. The tail was more squared off, not pointed like a Mourning Dove.

This is Wisconsin's second record of a White-winged Dove coming on the heels of the first report in June of 2000.

Chuck-will's-widow—

#2004-026 Vernon Co., 29 May 2004, J. Peterson.

These "heard only" reports were of a song a bit different in cadence to a Whip-poor-will. This song had a very soft "chuck" beginning note, followed by two "weeoo" notes; the second decidedly more emphatic than the first. The last two notes in a Whip-poor-will's song are single syllables, and its first note is more emphatic than the soft "chuck" of the Chuck-will's-widow.

Audubon's Yellow-rumped Warbler—

#2004-027 Dane Co., 28 April 2004, Stutz.

Initially, this warbler suggested a Black-throated Green Warbler because of the extensive black on the upper breast. Further observation showed the throat to be yellow and not black. Otherwise the markings were of a Yellow-rumped Warbler.

Yellow-throated Warbler—

#2004-029 Dane Co., 6 April 2004, Spalding; 11 April 2004, Weber, J. Peterson, Heikkinen, Unson.

This warbler had a gray back, white breast, yellow throat, black forehead, black mask, white superciliary line, black streaks on the flanks, and two white wingbars. The bill was a bit longer than typical for a warbler of similar size.

This early date of April 6th broke the previous early spring arrival date by 8 days.

Painted Bunting—

#2004-032 Door Co., 12 May 2004, Osinski (photo).

#2004-042 Calumet Co., 4–19 May 2004, Funk, Jodar (photo).

This small, sparrow-sized bird had a purple-blue head, red underparts, a yellow-green upper back, rosy rump, red eyering, brown wings, and brown tail. The bill was finch-shaped.

These are Wisconsin's eleventh and twelfth records, the last four of these twelve records occurring in the last three consecutive spring seasons.

Spotted Towhee—

#2003-062 Waukesha Co., 19 April 2004, Gustafson.

This is the last report of the 5 month visit of this bird. It differed from the Eastern Towhee in having extensive white spots on the otherwise black wings and mantle. Its call note was more catbird-like than towhee-like. The observer felt this species finally left the area with the arrival of the "summer resident" Eastern Towhee for its breeding season.

Blue Grosbeak—

#2004-033 Racine Co., 11 May 2004, Fitzgerald; 12 May 2004, Gustafson.

Initially this bird was noted as a cowbird-sized, dark blue bird flushing from a roadside. At rest, the dark blue body with contrasting chestnut wingbars were seen, in addition to the large, gray beak.

The song was a finch-like warble, reminiscent of a Purple Finch and an Orchard Oriole.

Hoary Redpoll—

#2004-008 Manitowoc Co., 3 March 2004, Sontag.

#2004-009 Ashland Co., 25 March 2004, Bruhnke.

#2004-010 Douglas Co., 4 April 2004, R. Johnson.

These birds were the late dates for previously reported wintering birds at these sites. The overall paler appearance, stubbier bill, white, unmarked rump, and white unmarked undertail coverts were noted.

Not Accepted

Anhinga—

#2004-013 Ozaukee Co., 14 May 2004.

Viewed directly overhead, without binoculars, this solitary bird was seen in flight. Identification was based on the narrow head, although a cormorant viewed from directly below won't show the full contour of its head, and on its longer, fanned tail, also possible in a description of a cormorant.

Distinguishing the two species in words can be challenging, but the wings of an Anhinga are positioned more centrally between the beak and

tail. The wings of a cormorant sit more caudally, giving the bird a shorter-tailed look. In addition, the wings of an Anhinga are more straightened; on a cormorant, a bit more bowed.

King Eider—
#2003-015 Manitowoc Co., 3 April 2004.

The limited description simply reports a brownish duck among others to be fatter and squatter. A round head and crescents on the sides complete the report. Viewing conditions were listed as very windy and the distance from the bird "varied." Without head and bill profile description, the identification as an eider isn't quite adequately presented. Without nostril and cheek feathering locations, the species identification would not be possible either.

White-tailed Kite—
#2004-016 Burnett Co., 12 April 2004.

This information came more as an e-mail indicating an unusual sighting than as a documentation. This information contained no description of the bird so the report could not be reviewed or accepted.

Swainson's Hawk—
#2004-017 Dodge Co., 28 March 2004.

This sighting consisted of two birds, one reported as dark phase, the other light phase. They were seen perched on fence posts and flying low between perches. As they were not seen soaring, the characteristic dihedral to the wings was not seen. Although they were felt to be Red-tailed Hawk-sized, no mention was made of them being longer winged than a Red-tail. The dark phase bird was indicated to be dark bodied, with the exception of a white patch above the nares and a banded tail. Specific mention of the wing color was not made. The expected light undertail coverts were not noted. The light phase bird was described as having a white throat, dark breast, light belly, and banded tail. Flight feathers were indicated to be dark, but no specific mention was made of the underwing coverts and the anticipated lightness to them.

The hunting patterns and much of the color patterns suggest these birds were Swainson's Hawks. Wisconsin has only one previous March record and the sighting of two birds itself would be extremely unusual. Not being able to see the light undertail coverts on the dark bird and not indicating the condition of the underwing coverts on the lighter bird left some doubts in the identification. The only comparative statements to other species involved the lack of the dark wrist marks of Rough-legged Hawks. A bit more information would likely have locked this identification as Swainson's Hawks.

Ruff—
#2004-024 Brown Co., 22 May 2004.

This bird was reported to be "yellowlegs-sized," but not specifically which yellowlegs. It had a "darkish" breast, "brownish" back, and orange legs. Without body shape, bill characteristics, and more specific color information, the description doesn't completely portray a Ruff.

Chuck-will's-widow—
#2004-026 Vernon Co., 30 May 2004.

No description of the song was attempted by the observer. Although

the bird was almost undoubtedly heard, the necessary evidence was not presented.

Scissor-tailed Flycatcher—
#2004-044 Racine Co., 12 May 2004.

This bird was not directly reported by the observer. Minimal descriptive evidence was given secondhand in an attempt to gather information to document this sighting. Unfortunately a more-than-likely valid sighting is thus lost. An additional observer on the following day also did not document a report of this bird.

Black-billed Magpie—
#2004-043 Shawano Co., ? March 2004.

Unfortunately this is felt to be a valid sighting, but the limited description doesn't provide the needed evidence to prove the identification. The bird was apparently briefly seen on a roadside almost next to the car, but the black and white jay appearance to the bird was the only information obtained for documentation.

Yellow-throated Warbler—
#2004-028 Waukesha Co., 12 April 2004.
#2004-029 Dane Co., 7 April 2004.

The Waukesha bird was simply reported as a bird at a ground feeder with a yellow throat. With no size/body type of information and no other description, of course numerous birds could fit into that limited bit of information.

The second report again gave no size/body type of description. It did report a long, narrow beak, yellow throat, white belly, black auriculars, and white supercilium. Without more information, a case could be made for a Magnolia Warbler, a Common Yellowthroat, a Yellow-breasted Chat, or even an Eastern Meadowlark.

Kirtland's Warbler—
#2004-030 Barron Co., 8 May 2004.

This bird was seen with three Magnolia Warblers in a maple tree. It was larger than the magnolias with a broken eye-ring, black streaks in the yellow below the wings. Specific reference was made that there were no wingbars. The primaries and tail feathers were uniform in color, but no specific color was described. The area below the eye was black. Notation of tail wagging was also made.

The tail wagging and broken eye-ring are intriguing, but a Canada Warbler hasn't been eliminated from consideration. A Kirtland's Warbler should have indistinct wingbars, but of course this "indistinction" could be missed. Reference to the color of the back and the expected black streaking would have helped the identification.

Lazuli Bunting—
#2004-032 Door Co., 12 May 2004.

This tiny bird had a blue head, bluish wings, and a bluish tail. The upper breast was orange and white wingbars were noted. The beak was black, but no size or shape information was listed. This bird was more than likely correctly identified, but without more information in the evidence supplied, a case could be made for a Northern Parula Warbler. Without specifically stating that the throat was blue and the lower breast and belly were white, we are left to suppose what color they were. In addition, the beak structure would have been important in identifying the family of this bird.

Blue Grosbeak—
#2004-033 Racine Co., 12 May 2004.

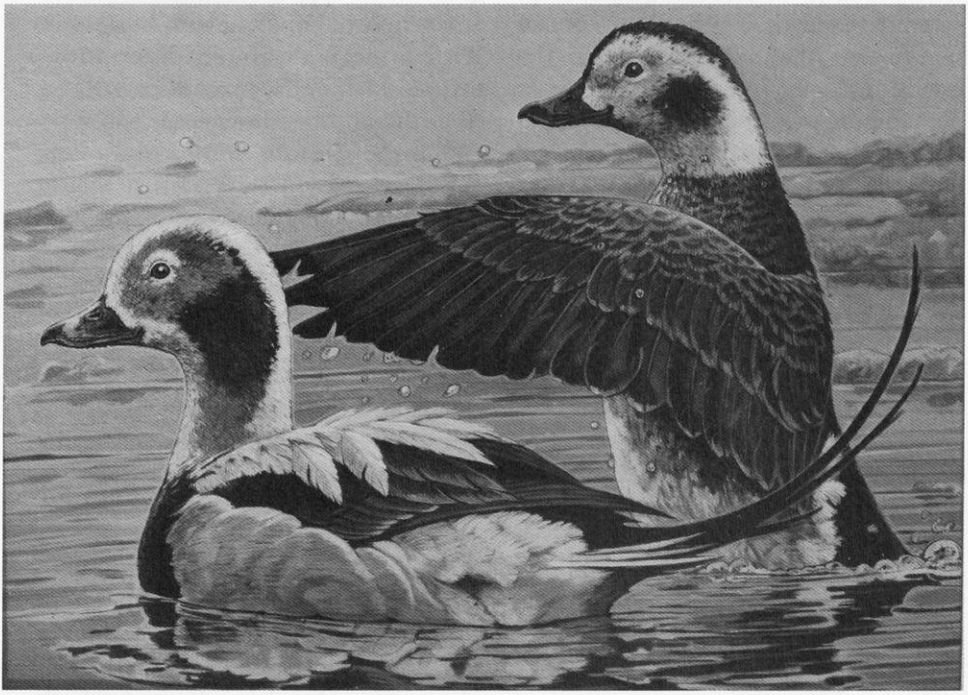
The bird was heard only. The song was described as Orchard Oriole-like. Interestingly, an Orchard Oriole appeared while this individual continued to sing. Without an attempt to describe the song more completely (a challenging proposition in itself), confirming the identification of a song with similarity to a number of other species is a tough call.

Chestnut-collared Longspur—
#2004-034 Portage Co., 25 April 2004.

Two longspurs were seen, one in male breeding plumage. Reported were chestnut collar, facial markings like a White-throated Sparrow, and a black belly. Lapland Longspurs of course have a chestnut collar and the black of the breast is variable in extent. More specific language would be needed regarding the face and throat coloration/pattern to confirm a Chestnut-collared Longspur. No mention was made of the yellow face and gray bill as opposed to the black face and yellow bill of a Lapland Longspur. With a more thorough description, this could have been confirmed as a Chestnut-collared Longspur.

Eurasian Siskin—
#2004-035 Outagamie Co., 23,24 May 2004.

Photos of this bird show a siskin that was yellow-green overall, with darker streaks on the back, black wings with light wingbars, and a black crown and chin. The identification is not in question, but the origin of this species is. This would appear to be yet another released European species for Wisconsin.



Long-tailed Ducks *by Dave Brandon*

ABOUT THE ARTISTS

Jack R. Bartholmai is an amateur wildlife photographer and wood sculptor. His current focus is photographing the birds of Dodge County, his home territory since 1972. His works appears frequently in local newspapers, travel brochures, calendars, maps, bird publications, and in numerous talks and articles on birds. He is an active member of the Horicon Bird Club.

David Brandon is a self-taught artist who has taught basic drawing and illustration at the college level. This award winning artist's interests are in nature and landscape painting. He does freelance illustration work from his home in Minnesota.

Janet Flynn interprets nature in watercolor as a full time endeavor. She finds the beautiful Baraboo Hills to be both a classroom and a source of inspiration for her vibrant, unique watercolors. Her work is marketed at the International Crane Foundation gift shop and numerous Wisconsin galleries and has been juried into numerous national and international exhibitions including the prestigious "Birds in Art" in Wausau, WI.

Gary Krogman, of Eau Claire, has been photographing birds for over two years with a digital camera attached to a spotting scope (digi-scoping). Most of his photos were taken within 100 miles of Eau Claire. Besides birds, butterflies are a favorite subject for Gray to photograph.

David Kuecherer, who serves as Art Editor for *The Passenger Pigeon*, taught art in high school for 30 years and at UW-Oshkosh for several years. He combines his artistic talents with his love of birdwatching to paint birds. His work has been exhibited in "Birds in Art" and several other shows in Wisconsin.

Dennis Malueg is a serious amateur bird and wildlife photographer. He currently works from his backyard studio, prairie, and 80-acre forest to capture images of birds native to Waushara County.

Betsy Popp is a wildlife artist in Townsend, Wisconsin, who works in a variety of media, including oils, watercolor, and oil pastels. When not painting, she enjoys photography, taxidermy, and wood carving.

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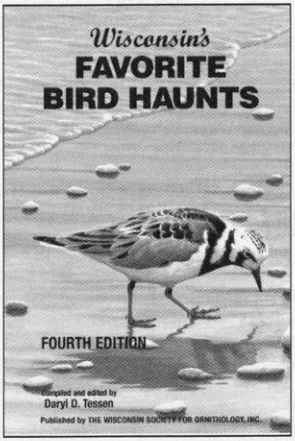

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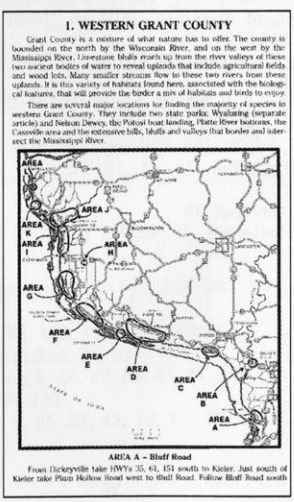
1. WESTERN GRANT COUNTY

Grant County is a mixture of what nature has to offer. The county is bounded on the north by the Wisconsin River, and on the west by the Mississippi River. Limestone bluffs march up from the river valleys of these two ancient bodies of water to reveal uplands that include agricultural fields and wood lots. Many smaller streams flow to these two rivers from these uplands. It is this variety of habitats found here, associated with the biological features, that will provide the birder a mix of habitats and birds to enjoy.

There are several major locations for finding the majority of species in western Grant County. They include two state parks, Wyalusing (separate article) and Nelson Dewey, the Potosi boat landing, Platte River bottoms, the Cassville area and the extensive hills, bluffs and valleys that border and intersect the Mississippi River.

AREA A – Bluff Road

From Dickeyville take HWYs 35, 61, 151 south to Kieler. Just south of Kieler take Plum Hollow Road west to Bluff Road. Follow Bluff Road south

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