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Send all manuscripts and correspondence to the Editor; information for "Seasonal Field-notes" should be sent to the Associate Editor or the appropriate Field-note Compiler. Manuscripts that deal with information on birds in the State of Wisconsin, with ornithological topics of interest to WSO members, or with activities of the WSO will be considered for publication. All manuscripts submitted for possible publication should be typewritten, double-spaced, and on only one side of page-numbered typing paper. Illustrations should be submitted as photographs or good-quality drawings. Keep in mind that illustrations must remain legible when reduced to fit on a journal page. All English and scientific names of birds mentioned in manuscripts should follow *The A.O.U. Checklist of North American Birds (6th Edition)*. Use issues after Volume 50, Number 1, as a general guide to style.

President's Statement

OUR PUBLISHING LEGACY

How does the public judge an organization, such as ours, whose members are involved in many aspects of ornithology and conservation? It is not by small but important accomplishments like a youngster who is inspired to take an interest in birds after reading a donated copy of our journal in the library or after viewing the WSO slide show. Instead, it is our publications that come under the closest scrutiny, and it is by the quality of those publications that we are judged. *The Passenger Pigeon* has, through 49 volumes and six editors, retained its reputation as a respected state bird journal, and it has been a model for other fledgling journals throughout the country.

But, from what beginnings did this publishing legacy arise? In 1938 the Madison Bird Club planned a new statewide bird group, dedicated not only to educating Wisconsin's citizens about birds and encouraging research, but also to helping write laws to protect birds. Thus, in 1939 with the January issue of *The Passenger Pigeon*, The Wisconsin Society for Ornithology began publishing, with Walter E. Scott of Madison as its first editor. He built the "Pigeon" from a mimeoed newsletter into a handsomely printed 20-page journal.

In 1944, when N. R. Barger took over the editorial reigns, World War II was almost over, and birdwatching was being touted as a "highly acceptable recreation" that did not compete for the resources needed by a country at war. Editor Barger was responsible for the format and cover design of the "Pigeon" as we have known it in recent years. During the period of 1953–59, Sam Robbins, then of Adams, was responsible for our journal. Then, Eugene Roark brought the "Pigeon" back to Madison until 1961, when Nils P. Dahlstrand from Rhinelander took over and edited through the spring of 1967. These first five editors each served just over five years apiece.

But, for forty percent of the life of *The Passenger Pigeon*, one man has been editor. Since 1967, Charles Kemper, M.D. has worried about deadlines and coped with the procrastinations of Field-note Compilers (myself included). He has, for 21 years, provided a quality forum for all of Wisconsin's ornithologists, amateur and professional. Charlie Kemper would look upon any recognition of his accomplishments as "reading one's obituary while you're still alive." But Charlie, we must.

Besides his long-time family practice in Chippewa Falls, where just about everyone in town knows him as "Doc Kemper," his other life-long interest is ornithology. His published accounts of the numbers and kinds of birds found at various TV-tower kills around Eau Claire have provided excellent indications of the actual relative abundance of migrants. A bander for over 25 years, Charlie is a past president of Inland Bird-banding Association, and he was active in WSO for 15 years before becoming editor. In 1973 Charlie published his "Birds of Chippewa, Eau Claire and Neighboring Counties" in the "Pigeon." This work

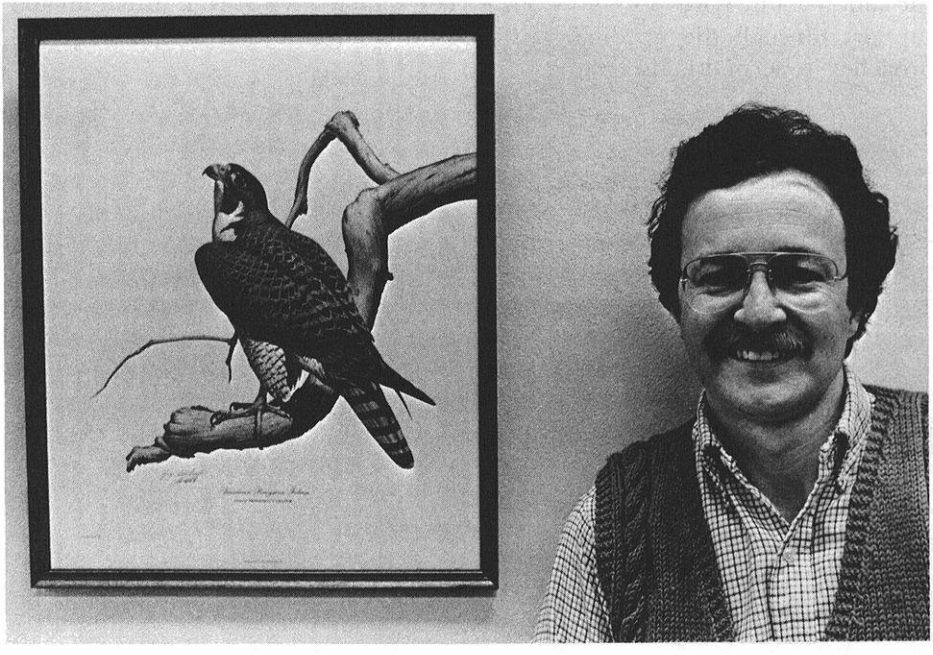
Charles Kemper retires after 21 years as our Editor.

remains the standard reference for environmental workers in this part of northwestern Wisconsin. His "interviews" with members of WSO have been very popular with the readership. Through the years, many of us have grown up in Wisconsin ornithology under the influence of Doc Kemper's comments and scholarship. We wish him and the pet projects he has planned for the future all the best as he now retires as editor. I'm sure his contributions to WSO will

continue, especially now that the editorial burden has been lifted. If you get a chance to meet him at a coming convention, thank him for these 21 years; if you get a chance to go afield with him, do so, his field ability is all-encompassing, and his humor and attitude contagious (I just wish he could have heard that Sharp-tailed Sparrow at Crex in 1979). We offer our thanks for a job well done over a tenure that would have tried the patience and sanity of most.

In many ways Charlie exemplifies the type of person that makes WSO work. Our society depends upon the volunteering of countless hours by many individuals, not just the ones listed on the cover of the "Pigeon." Some of these individuals have been actively involved in WSO for many years, and their efforts have made rewarding and tangible contributions to the society's goals. More often than not these volunteers work alone; the "committees" are actually one-person acts when there is no reason for this to be the case. It is important for us to develop depth in our various committees so that when current chairpersons wish to retire there are successors in the wings rather than a scramble for replacements. If you have questions about any of our committees or wish to help, please write to me.

Finally, I want to introduce you to our new editor, the designer of the "new look" that you hold in your hands. Of the relatively few professional ornithologists who have realized that the legions of birders in this country can be encouraged to collect valuable data on bird populations and geography, Stanley A. Temple has been one of the most innovative. His Wisconsin Checklist Project,



Stanley A. Temple now becomes our new Editor.

to which many of you have contributed, seems destined to grow into a standard, nationwide technique for determining distributions and demographic trends. Stan received his Ph.D. from Cornell in 1973, and he has been a researcher for the Cornell Laboratory of Ornithology, the World Wildlife Fund, and the International Council for Bird Preservation. In 1976 he joined the faculty of the UW-Madison's Department of Wildlife Ecology, where he is now a full professor holding the Beers-Bascom Professorship in Conservation. Author of over 100 books and technical and popular papers, he has coauthored two WSO publications and has another on the way. His wide ranging research activities have taken him around the world from Iceland to Mauritius, where he has studied a wide variety of bird species. His research activities are diverse, but he is best known for his work and guidance in the recovery of severely endangered birds, including the Peregrine Falcon, Whooping Crane, and California Condor. Stan has been the creator and editor of the *Bird Conservation* series, a set of books dedicated to the biology and conservation of endangered and threatened species. His contributions have typically had direct applications to conservation efforts, rather than being works of pure science alone. *The Passenger Pigeon* once again rests in competent hands, back where it all began, in Madison.

After nearly fifty years of publishing, our goals have changed little. The laws protecting Wisconsin's birds have been written and implemented, so today's focus is increasingly on education and research. But, we also have a continuing responsibility to represent the interests of birdlife, especially non-game species, and to provide other organizations and governmental agencies with basic information about Wisconsin birds. Please continue to give us your attention and support through the upcoming issues as this adventure in ornithology approaches its second half-century.

John Idzikowski

President

A MESSAGE FROM THE NEW EDITOR

As you have, no doubt, already detected, *The Passenger Pigeon* has undergone several changes as a result of the editorship passing from Dr. Charles Kemper to me. Under Dr. Kemper's competent guidance, our society's journal has maintained a fifty-year tradition of providing Wisconsin's ornithologists, both amateur and professional, with a wealth of information about birds in the state. As a result, *The Passenger Pigeon* has continued to rank among the best regional bird journals, and much of the credit for this status goes to the hard work of a dedicated editor. When Dr. Kemper decided to retire from the editorship after 21 years of outstanding service, it seemed an appropriate point to ask the members what, if any, changes they would like to see in *The Passenger Pigeon*, as it begins its second half-century of publication.

You may have already responded to the recent survey that was sent to members in *The Badger Birder*. That survey was designed to give you a chance to tell me who you are, what you like about *The Passenger Pigeon*, what you don't like, and what kinds of changes you feel are needed. I'd like to share some of the results of the survey and explain how I plan to respond to your comments and suggestions in this and future issues of the journal.

First, there was a good response to the survey. As of January 15, when I summarized the results, 468 of the 1143 members had responded. This represents a 41% response rate, which would make any poll-taker happy! Readers are obviously anxious to express their opinions, and I feel I now have a representative sample of your views. You told me some interesting things about yourselves. The readership is, like the general population, leaning toward the older age classes. Thirty-nine percent of you are over 50, whereas only 11% are under 30. I've made a few changes in response to these findings. You'll note that most pages are now in a two-column format, and the type size is slightly larger than in the past. These changes will make reading *The Passenger Pigeon* a little easier on the eyes, and it allows for more attractive page lay-outs, which many of you said you desired.

In replying to the question about your birding activities, you revealed an unexpected emphasis on backyard birding. Twenty-four percent of you described yourselves a backyard birders, 16% of you were occasional birders, while 60% felt they were active birders. In response to this interest, I have initiated a new regular feature, called "At Home With Birds." Professor Scott Craven, Wildlife Extension Specialist at the University of Wisconsin-Madison, will write this series. Scott is well versed on the joys and tribulations of having birds and other wildlife as neighbors, and his articles will cover a wide range of topics from how to attract birds to how to discourage them if they have become troublesome. His wealth of experience, gained from dealing with the public in every corner of the state, should be of interest to all of you, but especially those

of you who do most of your birding close to home, as his first feature in this issue demonstrates.

I was distressed to find that, although 70% of you were very satisfied or mostly satisfied with *The Passenger Pigeon*, 30% of you were mostly or very unsatisfied. That's far too many unhappy readers, and your opinions on what you like, don't like, and want to see changed provide me with a useful guide for how to improve the journal. Here are a few of the changes that have resulted from your suggestions.

Many of you were unhappy that "Seasonal Field-notes" don't appear in print until a full year or more after the observations had been made. During 1988, the Associate Editor and the 4 Field-note Compilers will pick-up the pace of their already hectic schedule. This will mean that one issue this year will contain two seasonal reports, but by year's end we will be on a new calendar. Winter field-notes will appear in the September issue, Spring field-notes in the December issue, Summer field-notes in the March issue, and Fall field-notes in the June issue.

You wanted to have more artwork and photographic material in the journal. I've appointed Tom Schultz as my new Assistant Editor for Art. Tom's outstanding reputation as an artist and birder and his familiarity with Wisconsin's wildlife artists should allow him to attract more top-quality art to *The Passenger Pigeon*. There is certainly no shortage of talented artists and photographers in the state. You can count on a piece of original artwork appearing on the cover each month, following the excellent example provided by Tom Schultz for this issue.

An overwhelming majority of you wanted to have more articles describing birding locations around the state. In response to this desire, I've initiated a new 16-part series called "Wisconsin Birding: The Habitat Way." This series will be written by staff members of the DNR's Bureau of Endangered Resources and the Wisconsin Chapter of The Nature Conservancy. In each issue, they will describe the bird community associated with one of Wisconsin's major ecosystems, and they will tell you where you can find the state's best examples of these habitat types and bird communities on State Natural Areas and Nature Conservancy Preserves. An introduction to the series appears in this issue and should whet your appetite for the installments that follow.

Many of you correctly noted that there is much ornithological work being carried out by researchers at the University of Wisconsin and the Department of Natural Resources, but relatively little of it is now being reported upon in *The Passenger Pigeon*. Most of it is published in more technical ornithological journals or as in-house documents by government agencies. I have made an effort to contact many of my professional colleagues around the state and encourage them to publish popularized summaries of their research in our journal, even if they have published their definitive articles elsewhere. One result of this effort is the article in this issue describing the DNR's recovery plan for the Peregrine Falcon. I shall try to have at least one such article in each issue so that you can feel better informed about the wide breadth of ornithological research and conservation programs being conducted around the state. I will

also be contributing a regular feature article, "Current Ornithology," that summarizes some particularly exciting new ornithological research and explains its relevance to birding or bird conservation in Wisconsin. My first contribution in this issue deals with the consequences of habitat fragmentation for birds.

You wanted more people-oriented material, such as interviews and biographical sketches. In this issue, I've initiated a new regular feature, "About the Authors and Artists," that will provide biographical material about the contributors to each issue. The popular interviews with noteworthy ornithologists from Wisconsin will appear more frequently than they have in the past. Interviews in upcoming issues will feature individuals and institutions that have played a significant role in Wisconsin ornithology.

Most of you favored the inclusion of advertising for birding-related products and services, and I have canvased potential advertisers to attract an appropriate mix of offerings, some of which appear in this issue. WSO members clearly represent a ripe market for birding-related businesses. Your average income is well above average, and you annually spend impressive amounts on your birding activities: on average, for example, $194 on bird feeders, houses, and seeds; $106 on bird books; and $186 on wildlife artwork. The survey results suggest that WSO members collectively spend almost $1 million per year on their birding-related activities! I shall try to attract advertisers that cater to your interests, as revealed by the survey.

In addition to telling me about these and other suggestions for improvement, you also expressed great satisfaction with many of the things that are traditional features of *The Passenger Pigeon*. You liked the fact that the journal's focus is narrowed to Wisconsin, and you felt that this makes it uniquely different from any of the other bird journals you read. You enjoyed having a blend of popular and technical articles in the journal, but you disagreed almost equally amongst yourselves on which type of article you thought is now being overrepresented! These conflicting opinions, no doubt, reflect the diverse composition of the readership. I'll continue to provide a good mix of articles in the future, for this seems to be one of the real strengths of our journal. Many of you commented that you were glad that *The Passenger Pigeon* provides a place, especially in "By the Wayside," where the amateur can readily publish. I would encourage more of you to take advantage of this opportunity. I'm anxious to work with contributors to produce good material.

As your new editor, I shall endeavor to maintain these valuable traditions while providing enough new and stimulating material to keep *The Passenger Pigeon* timely and responsive to your changing needs. I welcome your comments and suggestions as we move into the Society's second half-century of publishing. Please continue to let me know what you like and don't like, and I'll do my best to improve the quality of our journal accordingly.

Stanley A. Temple

Editor

Peregrine Falcon *by Jonathan Wilde*

Wisconsin's Peregrine Falcon Recovery Plan

This plan describes ways to restore a population of 20 breeding pairs of Peregrine Falcons in Wisconsin.

by Charlene M. Gieck

The Wisconsin Peregrine Falcon Recovery Plan describes actions required to restore a viable breeding population of the Peregrine Falcon (*Falco peregrinus*) in Wisconsin. The Plan was developed in general conformity with, and in several sections taken verbatim from, the U.S. Fish and Wildlife Service (USFWS) Eastern Peregrine Falcon Recovery Plan (Bollengier 1979) and "A Proposal for the Restoration of the Peregrine Falcon to the Upper Mississippi River and other Midwestern Areas" (Redig et al. 1981). Although written to supplement the Federal Plan, the Wisconsin Plan represents the opinion of the Wisconsin Department of Natural Resources (DNR) and has not received official endorsement from the USFWS, the Eastern Peregrine Falcon Recovery Team, or The Peregrine Fund. This article is a condensation of the full recovery plan (Gieck 1987) published by the DNR.

Status and Distribution in Wisconsin

The American Peregrine Falcon (*F. p. anatum*) "was never very common in any part of the state" (Kumlien and Hollister 1903). From 1940 to the early 1960's, at least 24 different peregrine eyries were used by breeding pairs; these eyries were located along the Wisconsin side of the upper Mississippi River, along the lower Wisconsin River, in Door County, and along the St. Croix River in northwestern Wisconsin (White 1969).

This species was also "of regular occurrence during the migrations, both spring and fall, principally along the water courses" (Kumlien and Hollister 1903). Some of these migrating peregrines were probably of the *anatum* subspecies from the boreal-forest area of Canada, but a large portion of these migrants were probably Arctic Peregrine Falcons (*F. p. tundrius*), the highly migratory subspecies that breeds in arctic tundra regions of North America (White 1969).

F. p. anatum has been extirpated as a breeding species in Wisconsin (Berger and Mueller 1969, Fyfe et al. 1976). Peregrines were last known to have successfully fledged from a nest in Wisconsin in 1962, the last adult peregrine observed during the breeding season was

in 1964 (Berger and Mueller 1969). All peregrines seen since then have been migrants or nonbreeders until 1986.

In 1955, there was about one pair of peregrines per 64 km along the Wisconsin side of the Mississippi River (Berger and Mueller 1969). In 1986, one pair nested on the Mississippi River, and two additional territories were occupied in the state.

F. p. tundrius migrates through Wisconsin on the way to and from arctic breeding sites. These migrants, although few in number, can be seen as they fly along the Lake Michigan shoreline or the upper Mississippi River. In the early 1950's observers at Cedar Grove Ornithological Station near Lake Michigan saw about 30 peregrines per year as these falcons traveled south to their wintering grounds; this observation rate then declined steadily before rebounding in recent years (Figure 1).

The primary factor involved in the decline of Peregrine Falcon populations in Wisconsin and elsewhere is the widespread use of pesticides, especially DDT, from 1946 to 1972 (Peakall 1976, Bollengier 1979). Birds such as the peregrine that are on top of a long food chain are most susceptible to the harmful effects of these chemicals. Other factors that might have affected peregrine numbers locally include egg-collecting, taking of young by falconers, diseases, environmental contaminants, predation by Great Horned Owls and raccoons, and long-term changes in climate. However, none of these factors can account for the precipitous population crash that overtook this species after 1946 (Hickey and Roelle 1969).

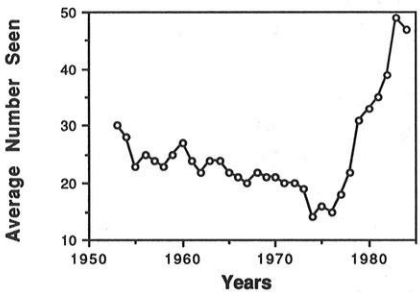


Figure 1. Five-year moving averages of the number of migrant Peregrine Falcons observed each autumn at Cedar Grove Ornithological Station, 1951–86 (D. D. Berger, pers. comm.).

Peregrine Habitat in Wisconsin

Peregrines usually make their nest scrapes on ledges, holes, or recesses on rock cliffs (Snow 1972). In Wisconsin, most nests have been located on the steep bluffs along the Mississippi and Wisconsin Rivers, or on cliffs in Door County (Berger and Mueller 1969). In other areas, this species has also been known to nest on cutbanks of rivers, in cavities in very large dead trees, on the ground in the arctic, and on tall buildings and bridges (Brown and Amadon 1968). In the Midwest, the major migratory routes of Peregrine Falcons include the shorelines of the Great Lakes and major rivers such as the Mississippi.

Restoration Efforts in the U.S.

Major efforts are being made to save the Peregrine Falcon by means of captive propagation and restocking to the wild in areas that had previously been part of the bird's range (Cade and Temple 1977, Fyfe et al. 1977). A high proportion of the captive-reared young released to the wild in parts of eastern U.S. have returned to breed near their release sites. In 1980, three pairs of released peregrines established territories at hack towers on the New Jersey coast

and two nested successfully (Cade and Dague 1980), marking the first time since the 1950's that wild peregrines fledged their own young east of the Mississippi River. Since then, peregrine nesting activity has increased dramatically in the Atlantic Coastal Region.

The State of Minnesota is proceeding with a restoration project, including hacking of captive-reared young. The project began with the release of five falcons along the Mississippi River in 1982 at Weaver Dunes, south of Wabasha, Minnesota. Subsequent releases at Weaver Dunes in 1983 and 1984, as well as an additional site on the North Shore of Lake Superior which became operational in 1984 brought the total number to 31. A total of 25 falcons was released in 1985: 6 in downtown Minneapolis, 7 on the North Shore of Lake Superior and 12 at Weaver Dunes. At this level of release, the release project is equalling the annual production of young by the former wild peregrine population in Minnesota.

Recovery Goal for Wisconsin

The ultimate goal of the Wisconsin Peregrine Falcon Recovery Plan is to restore a viable wild population of Peregrine Falcons in Wisconsin. An interim objective is to attain a self-sustaining, wild nesting population at a level of 50-percent of the estimated 20 breeding pairs known to have occurred in the early 1950's. This objective can be accomplished by implementing the following strategies: inventory and protect nesting habitat, restore the peregrine population through introduction of captive-produced birds, provide protection, and develop information and education programs. Assuming that captive-produced birds will be released at a rate of 20 birds per year until 1995, at that time the Wisconsin population should equal 10 breeding pairs (Table 1). Some breeding birds may repopulate Wisconsin from Minnesota or Michigan releases.

Nesting Habitat

An inventory of nest sites in the U.S. east of Mississippi River was conducted by Hickey in the early forties (1942), repeated in 1964 by Berger, Sindelar and Gamble (1969), and repeated again by the Eastern Peregrine Falcon Recovery Team in 1975. In 1987 the DNR coordinated a survey of the Mississippi River between Prescott and Eastern Dubuque, Illinois, the south central Wisconsin area, Door County, and selected cliffs in northern Wisconsin. It is believed that approximately 20 natural sites are still suitable in Wisconsin.

The results of this survey may be used to determine where populations could be re-established through releases. Beginning in 1988 the DNR will annually monitor traditional and potential nesting sites for breeding activity. The DNR will protect and manage suitable potential nest sites by following site-specific management plans. Where necessary control of habitat will be established through acquisition, easement, lease, or cooperative agreement. This will be coordinated with The Nature Conservancy's Midwest Regional Registry Program. Management needs vary considerably between sites and are dependent upon a variety of factors. An important factor to be considered is protecting released birds from predators. Great Horned Owls can prey heavily upon young birds. Mammals, like raccoons, can prey upon eggs and young. These predators may need to be removed from the vicinity of release sites to protect the Peregrine Fal-

Table 1. Projected growth of Wisconsin's Peregrine Falcon population based on the release of 20 birds per year, 1987–94 (from Tordoff 1986).

Year	Breeding pairs	Young produced	Total population
1990	2	4	45
1991	4	8	56
1992	5	10	68
1993	7	14	75
1994	8	16	85
1995	10	20	77
1996	11	22	76
1997	12	24	79

cons. Wisconsin will work closely with Minnesota to obtain a supply of captive-produced Peregrine Falcons that can be used for reintroductions. Depending on availability, 10–20 birds will be released in Wisconsin each year after 1987. Birds will be released from selected sites annually, and it is anticipated that survivors will return to breed in about 2–3 years.

Birds will be released using the well-established technique of hacking which allows a small number of people to release a large number of falcons each year. The hacking process has been described in detail by Cade and Temple (1977). Wisconsin's hacking program would follow the guidelines established by the Minnesota program (Redig et al. 1981).

Reintroduction Program

The two 1987 release areas were along the Mississippi River and in downtown Milwaukee. Future release sites will be chosen from the inventory of suitable habitat.

Mississippi River.—Releases at the Minnesota Weaver Dunes site were aborted in 1986 due to aggressive defense behavior by a territorial Peregrine Falcon occupying a cliff site across the Mississippi River. A new release site along the Mississippi River will be chosen in the southwest corner of Wisconsin or the southeast corner of Minnesota.

Milwaukee.—Peregrines have adapted to man-made sites in the past and raised young on buildings in large cities. The close proximity to people in downtown Milwaukee will enable extensive public education. The building owners will be actively involved in the project.

Protecting Peregrine Falcons

The Peregrine Falcon is listed as an endangered species in Wisconsin (Chapter NR 27, Wis. Adm. Code) and, thereby, is protected by state law (Chap. 29.415, Wis. Stats.) from taking (this includes shooting, shooting at, pursuing, hunting, catching, or killing). This protection is in addition to that provided by Federal regulations which prohibits any form of harassment of Peregrine Falcons. During a hacking release, site attendants will contact law enforcement officials and wildlife management staff to report possible violations or threats to the released birds.

When possible, the DNR will sample and analyze peregrine prey at selected release and breeding locations to determine levels of toxic chemicals and their sources. Recovered peregrine carcasses and addled eggs will also be analyzed.

The DNR will also provide and implement recommendations, when possible, to prevent pesticides and other toxic chemicals from adversely affecting Peregrine Falcons in the state.

Coordination, Information and Education

The ultimate success of this program can be insured only through public acceptance and support. Protection of release and nesting sites can probably be achieved by a combination of local publicity and on-site wardens. The DNR will coordinate these efforts. Ongoing contact will be maintained with Minnesota and other midwestern states. The DNR will also develop and disseminate brochures, posters, press releases, audio-visual programs, and magazine articles.

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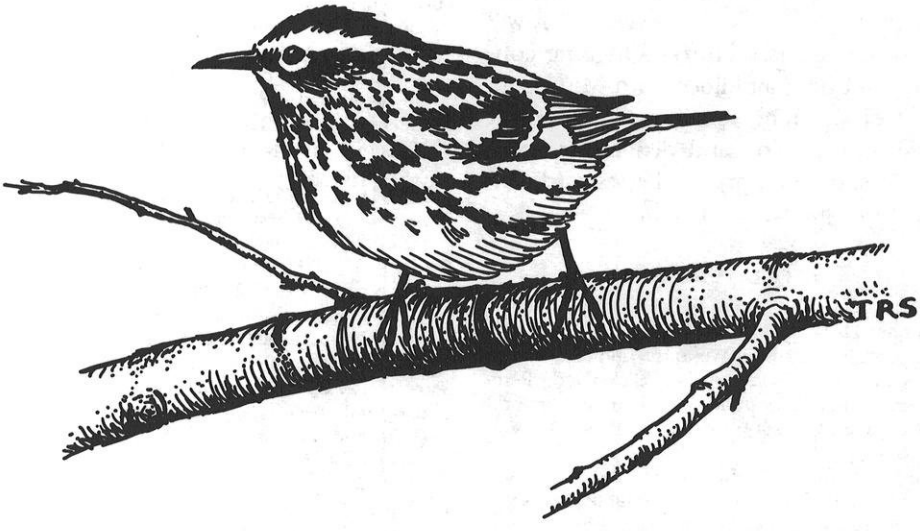

Black-and-white Warbler *by Thomas R. Schultz*

The Townsend's Solitaire in Wisconsin

Why is this western thrush being reported with increasing frequency in Wisconsin and what does it do while wintering here?

by Kenneth I. Lange

Townsend's Solitaire (*Myadestes townsendi*) has been reported with increasing frequency in Wisconsin in recent years, hence this review of its status. Townsend's Solitaire nests in western North America from Alaska through western Canada and the western states, south into the Sierra Madre of Mexico (Bent 1964:328–330); its easternmost nesting locality apparently is the Black Hills of western South Dakota, approximately 650 miles from Wisconsin.

This species wanders east of the breeding range all the way to New Brunswick, Nova Scotia, and Newfoundland, where it has been reported from 25 October–6 April, and New England, where it has been reported from 20 October–16 March (Godfrey 1986:423–424, Bowen 1979). Closer to home, Townsend's Solitaire has been noted in Ontario from 18 September–28 April, and in Minnesota ("most records") from mid October–March (Speirs 1985:617, Eckert 1983:36).

Wisconsin Records

Table 1 lists all the Wisconsin Townsend's Solitaire records through spring 1987 that are known to the author. Three of these birds are museum specimens: the 1910 Columbia County solitaire, an adult, sex unknown; the Dodge County solitaire, a male with an incompletely ossified skull, hence an immature; and the Sawyer County solitaire, an adult male.

First noted in Wisconsin in 1910, this species was not reported again until 1942 and the 1950s (3 records). There were 4 records in the 1960s, still not a significant increase, but then in the latter part of the 1970s and into the 1980s, the reports of this species increased notably; its status in Minnesota—"now almost regular" (Eckert 1979)—could apply to Wisconsin as well.

Fall, Winter, and Spring.—All Wisconsin solitaires, with one exception (and one other not listed in Table 1 but to be discussed herein), have been found within the period, 9 October–14 May.

More birds have been found in Sauk County's Devil's Lake State Park than any other locality. First noted in February 1980, Townsend's Solitaire has since been found at Devil's Lake in every

Table 1. Townsend's Solitaire records for Wisconsin, arranged chronologically.

Date	Location	Source
20 Feb. 1910	Columbia Co.	Ward (1912)
Dec. 1942	St. Croix Co.	*Passenger Pigeon* 5:3
6 Dec. 1952	Dodge Co.	*Passenger Pigeon* 15:65,91
1 Mar. 1953	Brown Co.	*Passenger Pigeon* 16:51
29 Dec. 1955–31 Mar. 1956	Sheboygan	*Passenger Pigeon* 18:57,81,90; 18:135
9 Oct. 1961	Sawyer Co.	Milwaukee Public Museum (specimen)
10 Apr. 1963	Chippewa Co.	*Passenger Pigeon* 25:157,173
30 Nov. 1963	Manitowoc	*Passenger Pigeon* 26:90,101; 26:152
21 Nov. 1968	Dane Co.	*Passenger Pigeon* 31:280,297
8 Feb.–16 Mar. 1973	Milwaukee	*Passenger Pigeon* 35:167; 36:29
14 May 1975	LaCrosse Co.	*Passenger Pigeon* 38:47
11 August 1975	Price Co.	*Passenger Pigeon* 38:122,128
26 Jan.–9 Apr. 1976	Brown Co.	*Passenger Pigeon* 38:149; 39:196
9 Oct. 1978	Douglas Co.	*Passenger Pigeon* 41:139–140; 41:171
3 May 1979	Dane Co.	*Passenger Pigeon* 42:39,50
Various dates for the period	Sauk Co.	*Passenger Pigeon* 42:146
20 Feb. 1980–6 Apr. 1987	Sauk Co.	*American Birds* 41:436
26 Oct. 1980–3 Jan. 1981	Manitowoc Co.	*Passenger Pigeon* 43:5,16; 43:131,145
1 Nov. 1980	Appleton	*Passenger Pigeon* 43:131–132
17–19 Dec. 1983	Racine Co.	*Passenger Pigeon* 46:2,15; 46:155
1 Dec. 1984	Columbia Co.	*Passenger Pigeon* 47:148
11–14 Jan. 1985	Bayfield Co.	*Passenger Pigeon* 47:148
24 Nov. 1985–5 Jan. 1986	Door Co.	*Passenger Pigeon* 48:2,16; 48:170
3 Jan.–26 Feb. 1987	Buffalo Co.	*Passenger Pigeon* 49:2,16; in press

winter except 1981–82 and 1982–83, when it might have been missed. A favorite locality is the south face of the east bluff (Figure 1), but it has also been found on the west face of the east bluff, the west bluff, and in an area called Steinke Basin, including the former Johnson farm, east of the east bluff. The only other Wisconsin counties with more than one winter record are Columbia, Dane, Manitowoc, and Brown.

Nesting Season.—On 11 August 1975, Maybelle Hardy noticed an unusual bird at her feeder in Price County. It was approximately catbird-size, with "white outer tail feathers, white eye ring, gray but very speckled with white, white splotches on wings, not wing bars just patches" (Hardy 1976); she identified it as an immature Townsend's Solitaire. This bird, if correctly identified, poses a dilemma. Did it wander into Wisconsin soon after fledging, or was it raised in Wisconsin? An adult was seen in La-Crosse County on 14 May of this year. Apparently it is not known how long the young stay in the nest nor at what rate they develop (Bent 1964:321). In the Black Hills, solitaires "probably" begin nesting in early May, an egg-laying female was collected in mid May, and recently hatched young have been seen as early as 2 June (Johnsgard 1979:348).

Solitaires were noted in Devil's Lake State Park in the winter of 1984–85 from 6 November–20 February, then, unexpectedly, an adult was found in the park in 1985 on 18 June by Scott R. Swengel. Was this solitaire merely lingering especially late, or was it a nesting bird? It certainly would be possible for solitaires to nest or attempt nesting in Devil's Lake State Park without being detected.

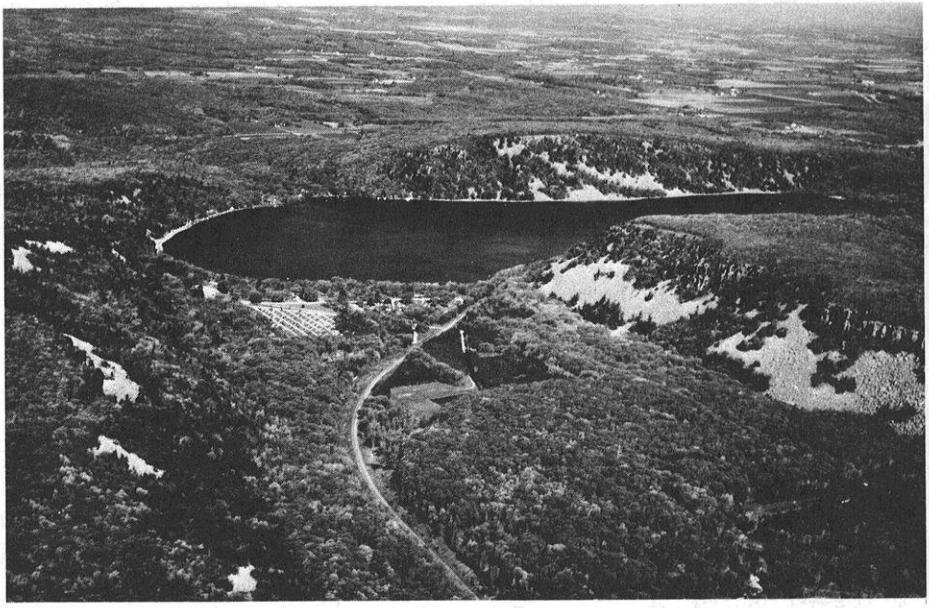

Figure 1. A favorite area for Townsend's Solitaire in Devil's Lake State Park is the east bluff, especially its south face, seen to the right in this aerial photograph.

Numbers.—It is impossible to say, of course, exactly how many solitaires are present in Wisconsin in a given winter, but some indication of numbers can be inferred from the reports available for certain years (e.g., the winter of 1984–85). In this winter, up to 3–4 solitaires were noted regularly on the south face of the east bluff in Devil's Lake State Park, while at the same time one was found (1 December) in the Rocky Run Fisheries Area in Columbia County and another (11–14 January) in Bayfield County. The actual number of solitaires in Wisconsin over the entire winter undoubtedly was greater than these records would indicate.

Voice

In Wisconsin this species has been heard singing its rich warbling song (with less intensity than in the nesting season) from 6 November–22 March in Devil's Lake State Park.

The most common call of the solitaire in Wisconsin has been described as "piping" (Scott Swengel, pers. comm.) or "whistling" (Karl Legler, pers. comm.); it has a metallic quality and to my ear sounds like "eeek," as it has been rendered in certain guides, for example in Farrand (1983).

The "eeek" call and the song can be heard on *A Field Guide to Western Bird Songs*, 1975 (produced by William W. H. Gunn and Peter Paul Kellogg for the Laboratory of Ornithology, Cornell University, Ithaca, New York). The first vocalization on this field guide sounds like a shortened version of the song. Swengel heard this vocalization on different dates in Devil's Lake State Park. Presumably this is the "three-five note song" given by one or both birds during

fights (Salomonson and Balda 1977:151).

Diet

This species consumes a variety of animal and plant food. Throughout its range, fruits eaten include the following: red cedar, yew, mistletoe, poison-ivy, sumac, hackberry, madrona, mountain ash, rose, wild cherry, serviceberry, haw, pyracantha, waxwork, honeysuckle, elderberry, privet, kinnikinnick, and pinyon pine seeds (Bent 1964:322, Burleigh 1972:303, Lockerbie 1939). In addition the Townsend's Solitaire eats a variety of invertebrates, and it has been called the "flycatching thrush." Table 2 lists the food items known or suspected of being consumed by the Townsend's Solitaire in Wisconsin.

In Devil's Lake State Park this species commonly eats the fruits of red cedar, mountain ash, and buckthorn. These fruits are picked while the bird is perched or in hovering flight, generally at the periphery of branches, especially in red cedar. Ground feeding of fallen berries must also occur here, although this was not actually observed. Solitaires kept in outdoor cages for periods of 6–14 days in spring and fall in Arizona and supplied with ample water consumed an average of 204 juniper berries (*Juniperus monosperma*) per day (Salomonson and Balda 1977), while in another study (Lederer 1977a) 50 berries per day was cited as a "reasonably adequate number" for a free flying solitaire.

A note on the specimen tag of the Dodge County solitaire states that three "fruits" of false Solomon's-seal were found in the gizzard.

Flycatching was noted in Devil's Lake State Park on warmer days when chironomid gnats and possibly other insects were flying. The solitaires appeared to be catching the insects both in direct flight and while hovering at the branches or trunks of trees. Swengel observed one on 12 November 1984 fly to a vertical tree trunk as if to land, nuthatch fashion, but then it rebounded off the trunk with its feet and flew to a perch.

On 11 March 1980 I watched one swipe its bill through a patch of snow on a branch of a fallen tree. It appeared to be eating the snow. Lederer (1981:463) refers to "snow-eating" to uncover berries, "although much of the removed snow was eaten."

Behavior

This species has been studied in winter in California (Lederer 1977a, 1977b, 1981; Poddar and Lederer 1982), Arizona (Salomonson and Balda 1977), New Mexico (George 1987), and Colorado (Strong 1983). The comments that follow are based on the California, Arizona, and New Mexico studies.

Table 2. Diet of the Townsend's Solitaire in Wisconsin.

Food Item	Source
"berries"	*American Birds* 27:621
Fruits of red cedar (*Juniperus virginiana*)	This paper
Fruits of mountain ash (*Sorbus americana*)	This paper
Fruits of buckthorn (*Rhamnus cathartica*)	This paper
Fruits of false Solomon's-seal (*Smilicina racemosa*)	University of Wisconsin Zoology Museum
Probably chironomid gnats (and other insects)	This paper

General Behavior.—The studies cited show that a solitaire spends more of its time in perching than in any other activity; lesser amounts of time are spent in feeding activities, calling, singing, and interactions with other solitaires and other birds. This species' habit of establishing territories is especially interesting.

Territorial Behavior.—These studies also demonstrate that both male and female solitaires usually establish and defend territories to ensure a dependable supply of berries through the season. In some areas not all birds may be territorial, instead adopting a "sneaky" strategy and attempting to interlope on the territories of the other birds. The territories range in size from less than an acre to approximately 13 acres, generally with an inverse relationship between the density of the berries or the numbers of avian competitors, such as the American Robin, and the size of the territory. However, if the net gain of energy becomes greatest when the bird is nonterritorial, solitaires do not maintain territories.

The behavior of solitaires in winter can thus be viewed in terms of territorial defense. The calling and singing of this species, for example, serve as "territorial advertisement," its flights typically function as "boundary patrols," and its chases (and fights) are in response to intruders.

On 22 March 1987, on the former Johnson farm a mile northeast of Devil's Lake, I watched two solitaires in tandem flights, presumably territorial, from one hardwood tree to another. The birds ranged between the glacial moraine at the northwestern corner of the property to the eastern end of the kettle-hole area, a linear distance of approximately ¾ of a mile. One bird was singing from hardwoods, and seemed to be the same bird that was following, not leading, in the flights. Both were feeding on the fruits of a buckthorn tree, but at different times. Solitaires may also chase other species of birds, particularly smaller competitors for the same food source, for example the Cedar Waxwing. In Devil's Lake State Park on 9 December 1984, a flock of about 25 waxwings made two diving passes at a solitaire, and the solitaire left a perch to fly at the waxwings and chase them away from the red cedars. At the same time a male Northern Cardinal was ignored (Frank Freese, personal communication). Interaction between larger competitors for the same food source, for example the American Robin, and solitaires was not observed, but robins are dominant in any robin-solitaire encounter. Competition between these species for the same berries is usually avoided by the solitaires exploiting the fruits in the outer branches where the heavier robins cannot reach them as easily (Lederer 1977a).

Summary

Townsend's Solitaire was first noted in Wisconsin in February 1910, next in December 1942, then in 2 winters in the 1950s, 4 winters in the 1960s, 5 winters in the 1970s, and 5 of the first 7 winters of the 1980s. These winter dates span the period, 9 October–14 May. In addition an adult has been seen in June and an immature in August. The latter bird, if correctly identified, is an especially interesting record, as it implies either very early post-breading dispersal into Wisconsin or a Wisconsin nesting. Townsend's Solitaire has been found in 14 counties, with more records from Sauk County's Devil's Lake State Park than from any other locality.

Acknowledgments

Scott R. Swengel supplied copies of his Devil's Lake State Park field notes, and Frank Freese and Karl Legler supplied information on their Devil's Lake State Park solitaire observations. Sam Robbins, Jr., alerted the author to the Sawyer County solitaire, and Nathan Kraucunas, Assistant Curator of Birds and Mammals, Milwaukee Public Museum, verified the specimen and also the 1910 specimen from Columbia County. Frank A. Iwen and John E. Dallman, Curators at the University of Wisconsin Zoology Museum, assisted with the solitaire specimen in their collections.

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The 1987 Wisconsin Christmas Bird Counts

1987 was a banner year for Christmas Bird Counts around the state. Record high counts and new species were recorded in several areas.

by William L. Hilsenhoff

The 1987 Christmas Bird Counts were perhaps the best we have ever experienced in Wisconsin. More than a fifth of the counts recorded 50 or more species, only one count failed to find 20 species, and only five counts reported fewer than 25 species. A phenomenal 91 species were recorded at Madison, followed by 76 at Poynette, 68 at Sauk City, 66 at Newburg, 62 at Milwaukee, and 61 at Racine. The 139 species that were found statewide were second only to the record 141 in 1974. Mild weather in late November and early December induced individuals of many migratory species to linger into the Christmas Count period, and left much open water for ducks and other water birds. Significant snowfall over most of the state prior to the count period further improved the counts by forcing birds to roadsides, feeders, and stream banks where they could be readily found and counted. Rain, sleet, and snow on December 19, when a third of the counts were made, was the only negative factor.

There were only 79 counts this year, the first time in 7 years that fewer than 80 counts were made, but participation in the counts was excellent with total party-hours exceeding those in any previous year. There were new counts at Pensaukee, Owen, and Bridgeport, and the return of a count at Beetown, but seven counts that were made last year were not repeated in 1987. Three other counts were submitted but not included because either they severely overlapped existing counts or lacked the essential number of hours of field observation. Locations of counts are shown in Figure 1, and details of the counts are listed in Table 1.

The Counts

The following is a list of the 79 counts. The name of the count (in boldfaced type) is followed by the count's number (corresponding to Figure 1), the description of the center of the count circle, and the name and address of the count's compiler. **Amery** (9); Joel; Bernard Klugow, Box 13, Brule, WI 54820; (715) 372-4858. **Amherst** (41); Jct. Hwys. A and B; David Borchardt, Box 208, Amherst, WI

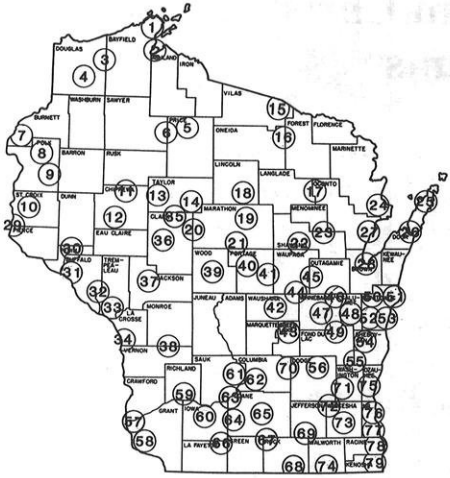

Figure 1. Locations of the 1987 Wisconsin Christmas Bird Counts.

54406; (715) 824-3971. **Appleton** (46); Jct. Hwys. 10 and 45; David Fell, 982 Westfield Lane, Neenah, WI 54956; (414) 727-1108. **Arcadia** (32); Hwy J 1.5 miles S of Arcadia; Thomas Roskos, Rt. 1, Box 201A, Arcadia, WI 54612; (608) 323-7072. **Arpin** (39); Jct. Hwy. D and Spruce Rd. 5 miles SSW of Vesper; Don Follen Sr., 9201 Rock Inn Road, Arpin, WI 54410; (715) 652-2510. **Ashland** (2); Jct. Hwys. 2 and 118; Dick Verch, Biology Department, Northland College, Ashland, WI 54806; (715) 682-4531. **Baraboo** (61); Jct. City View Rd. and Hwy. A; Kenneth Lange, Devil's Lake State Park, Baraboo, WI 53913; (608) 356-8301. **Bayfield** (1); T 50 N, R 5 W, S-22; Albert Roy, 906 Water St., Ashland, WI 54806; (715) 682-5334. **Beetown** (58); Beetown; Terrance Ingram, 8384 N. Broadway Road, Apple River, IL 61001; (815) 594-2592. **Beloit** (68); N end Big Hill Park; John & Edith Brakefield, Rt. 2, Box 294, Evansville, WI 53536; (608) 876-6242. **Black River Falls** (37); Jct. Norman Rd. and Hwy. 54; Dorothy Harmer, Rt. 1, Box 70, Black River Falls, WI 54615; (715) 284-4098. **Blanchardville** (66); 2.5 miles SW of Blanchardville; David Willard, Bird Division, Field Museum of Natural History, Roosevelt Rd. at Lakeshore Dr., Chicago, IL 60605; (312) 922-9410 ext. 269. **Bridgeport** (57); 2 miles SE of Bridgeport; Sam Robbins, 14 S. Roby Rd., Madison, WI 53705; (608) 233-3581. **Brule** (3); Jct. Hwys B and 27; Bernard Klugow, Box 13, Brule, WI 54820; (715) 372-4858. **Caroline** (22); 2 miles W of Caroline; Mark Peterson, Box 53, Caroline, WI 54928; (715) 754-2661. **Chippewa Falls** (12); Jct. Hwys. 178 and S; C.A. Kemper, Box 818, Chippewa Falls, WI 54729; (715) 723-3815. **Clyde** (60); Standart; Bill Sievert, 8430 W. Capitol Dr., Milwaukee, WI 53222. **Cooksville** (67); Cooksville; John Wilde, Rt. 1, Box 429. Evansville, WI 53536; (608) 882-5352. **Dancy** (21); 3 miles NW of Dancy; Don Hoehn, 1605 Hemlock, Marshfield, WI 54449; (715) 384-8830. **Durand** (30); Jct. Hwys. 25 and DD 3 miles N of Durand; C.A. Kemper, Box 818, Chippewa Falls, WI 54729; (715) 723-3815. **Ephraim** (25); Hwy. A 3 miles S of Jct. with Hwy 42; Roy & Charlotte Lukes, 3962 Hillside Rd., Egg Harbor, WI 54209. **Fifield** (5); Fifield Post Office; Thomas Nicholls, 2160 Draper Ave., Roseville, MN 55113; (612) 636-2592. **Fond du Lac** (49); Jct. Tower and Cody Roads; Thomas Schultz, Rt. 2, Box 23, Green Lake, WI 54941; (414) 294-3021. **Fort Atkinson** (69); Jct. Main St. and Sherman Ave.; Richard Wanie, W5920 Lee Dr., Fort Atkinson, WI 53538; (414) 563-6274. **Fremont** (44); Jct. Hwys. I and HH 4 miles S of Fremont; Daryl Tessen, 2 Pioneer Park Place, Elgin, IL 60123. **Gilman** (13); 1 mile W of Miller Dam; Janice Luepke, B-894 Eau Pleine Rd., Spencer, WI 54479; (715) 659-3910.

Table 1. Details of the counts.

Name of Count	Date	Hours	Sky	Snow (in)	Wind Dir.	Wind Vel. (mph)	Low Temp. (°F)	High Temp. (°F)	Observers at Feeders	Observers in the Field	Parties	Party Hours	Owl Hours
Amery	12/19	12.5	Cloudy-Snow	4	SW	1–5	21	30	5	4	4	27	2
Amherst	12/19	12	Cloudy	2	WNW	15–30	15	20	2	15	9	31	4
Appleton	12/19		Cloudy-Snow	11	SE	5–18	26	33	3	10	6	27	0
Arcadia	1/2	10	Fair	4	SW	5	−10	23	0	4	2	15	1
Arpin	12/26	15	Fair	4	W	2–5	0	25	7	4	1	8	1
Ashland	12/19	8	PCl-Cloudy	4	Calm		15	22	0	9	4	32	0
Baraboo	12/29	10.25	Cloudy	8	Var.	5–10	25	30	1	6	3	19.75	0
Bayfield	12/17	8	Cloudy-PCl	5	Calm		18	25	0	9	7	41	0
Beetown	12/19	9.5	Rain	2	S	5–10	31	35	0	4	4	38	0
Beloit	12/17	9	Partly Cloudy	6	NW	0–5	15	20	4	18	8	39	1.5
Black River Falls	1/2	10	Fair	5	SW	15	−3	10	34	13	6	12.5	1.5
Blanchardville	12/17	11	Fair	7	Calm		14	24	0	11	5	33	3
Bridgeport	12/17	11.75	Fair	7	Calm-NW	5	8	27	0	8	4	35.25	6.5
Brule	12/26	13	Fair	9	SW	8–12	−1	26	11	10	6	28	4
Caroline	12/26	10	Partly Cloudy	9	SW	0–10	−5	25	15	1	1	8	0.5
Chippewa Falls	12/26	9	Fair	4	W	0–5	−1	30	0	9	5	41	1
Clyde	12/31	10	Fair	9	NW	15–20	15	25	0	2	1	9	1
Cooksville	1/1	11	Fair	11	W	8–15	−11	10	3	4	2	15.5	1
Dancy	12/21	9	Snow-Cloudy	4		8–10	10	28	0	12	3	24	0
Durand	12/19	9	Cloudy-Snow	3	NE	0–5	14	31	0	7	3	23.5	0
Ephraim	12/19	9	Cloudy-Snow	6	SE	5	30	35	32	28	15	57	0
Fifield	12/29	8.5	Fair	8	SW	0–5	8	23	12	2	2	12	0
Fond du Lac	12/20	8	PCl-Fair	7	WNW	5–15	25	30	2	10	3	17.5	0
Fort Atkinson	12/26	9.5	Partly Cloudy	3	NW	2–6	14	24	1	13	5	30.5	0
Fremont	12/26	9.5	PCl-Fair	6	SW	0–10	0	21	0	2	1	9.5	0.5
Gilman	12/27	12	Fair	6	SE	0–5	5	35	3	9	4	31.25	3
Grantsburg	12/19	8	Cloudy	7	NW	0–4	6	28	0	10	8	41.25	0
Green Bay	12/19	10.75	Cloudy	9	E	0–10	18	33	9	27	14	68	7
Green Lake	1/2	8.5	Fair	3	SSW	10–20	−1	10	0	15	4	23	0
Hales Corners	12/20	10.5	Partly Cloudy	3	W	10–25	28	38	0	4	0	13.25	1.5
Hartford	12/29	10	Cloudy-PCl	5		0–15	16	30	2	11	4	29.5	3
Holcombe	12/30	9	Fair-Cloudy	3	WSW	0–10	22	34	0	8	3	24.5	0
Horicon	12/19	9	Cloudy	6	ENE	0–10	28	34	0	11	4	32	0
Hudson	1/1	8.5	Fair	2	SSW	8–10	−10	−5	1	4	1	6	0
Kenosha	12/30	10	Cloudy-MCl	9	SW	6	26	31	0	3	1	10	0
Kettle Moraine	12/27	10.5	PCl-MCl	7	NW	0–5	16	28	2	9	3	20	0.5
Kickapoo Valley	1/1	9	Fair	6	SW	5–10	−9	9	0	7	5	32	0
LaCrosse	12/19	10	PCl-Fog	6	NW	3–5	20	34	0	24	11	83.5	11
Lake Geneva	1/2	15	Fair	19	SW	5–8	11	21	0	9	4	28	1
Lakewood	12/27	8.5	Fair-Cloudy	10	NW	5–15	6	29	0	1	1	8.5	0
Luck	12/19	8	Cloudy-Snow	7	NE	5	5	24	15	8	5	28	2
Madison	12/19	15	Cloudy-Rain	12	S	0–8	30	37	18	64	29	228	32
Medford	1/1	11.25	Fair	8	W	12–16	−12	8	4	13	6	44.75	5
Merrill	1/2	9	Fair-PCl	9	SSW	5–15	−6	17	0	5	3	25.5	0
Milwaukee	12/19	10.5	Cloudy-Rain	8	SW	5–8	25	37	11	26	13	79.25	1
Mount Horeb	12/27	16	Partly Cloudy	5	W	5	13	32	9	32	18	78	5.25
Nelson	1/2	9.25	Fair	3	WSW	5–20	4	20	0	13	6	49	0
Newburg	12/19	12.5	Cloudy-Sleet	7	SE	0–10	30	36	30	75	27	238.5	32
New Richmond	12/19	8.75	Cloudy	1	E	2–7	14	31	1	4	2	16	0
Oconomowoc	12/20	11	Cloudy-Fair	5	W	0–30	28	32	3	23	6	35.5	1
Oshkosh	12/19	10.25	Cloudy-Snow	8	SE	8–16	26	35	3	17	10	64.5	0
Owen	12/20	12.5	Fair	12	NW	8–18	28	32	4	10	4	30.75	5.5
Oxbo	12/19	12	Cloudy	6	Calm		15	32	6	9	6	35	3
Pensaukee	1/3	13	MCl-Cloudy	11	SW	5–15	3	26	1	2	1	8	1
Peshtigo	12/26	8.25	Fair	7	NW	1	18	28	0	3	2	16.5	0
Phelps	12/17	8	Cloudy	6	Calm		8	20	1	5	5	18	0
Plymouth	12/19	9	Cloudy	5	S	7–14	27	34	6	14	8	29	0
Poynette	1/2	13.75	Fair	10	S	5–20	−7	20	13	30	11	83.75	6.5
Racine	12/19	9	Cloudy	8	SSE	5–20	33	38	2	21	7	46.5	3.5
Randolph	12/25	9	Partly Cloudy	6	Calm		28	34	0	2	1	9	0
Richland Center	12/19	10	Cloudy	4	S	5–10	29	33	5	32	19	85	1
Sauk City	12/26	12	Cloudy	4	W	5–10	15	30	0	34	13	105.25	7.75
Shawano	12/19	10	Cloudy	8	S	0–5	25	30	21	6	5	28	1
Shiocton	12/23	9.5	Cloudy	7	Se	0–4	27	35	7	11	4	29	1
Solon Springs	12/30	12	Fair-Snow	6	S	10–15	13	18	11	4	3	22	2
Spencer	12/19	11	Cloudy-Snow	6	E	5–10	22	32	9	12	5	37	3.5
Stevens Point	12/19	9.25	Cloudy-Snow	2	SWE	5	19	31	9	9	39	55	2
Stockbridge	12/20	8.75	Cloudy-Fair	12	Calm				1	4	4	20	0
Sturgeon Bay	12/26	8	Fair	6	Calm		25	35	1	2	1	8	0
Three Lakes	12/29	8	Fair	12	N	0–5	15	25	2	3	3	12	0
Trempealeau	12/26	10.5	Fog-Fair	5	Calm		18	31	6	17	5	78.5	2
Waukesha	12/19	14	Cloudy	8	SE	5	30	34	4	16	7	59	9
Wausau	12/27	8.5	Fair-Cloudy	6	NE	5–15	12	33	2	8	4	22	0
Wautoma	12/31	11	Cloudy-PCl	9	W	25–35	10	23	34	9	6	20	0.25
Willard	12/22	11	Fog-Fair	8	SW	0–5	22	34	1	12	5	33	2.25
Woodland Dunes NW	1/2	11	Fair-PCl	9	NW	5–8	9	12	2	3	2	11	1
Woodland Dunes NE	1/3	11	Fair-PCl	5	WSW	5–10	17	23	9	12	7	37	1
Woodland Dunes SW	12/19	10.5	Fair-Cloudy	14	SW	0–5	27	30	1	7	5	19	1
Woodland Dunes SE	12/20	11	Rain-Fair	10	SW	5–8	28	30	2	9	6	24.5	2
TOTAL									403	953	491	2953.5	190

Grantsburg (7); Jct. Hwys. 70 an 48; Clarence Wagman, Box 166, Grantsburg, WI 54840; (715) 463-5371. **Green Bay** (28); Jct. Allouez and S. Webster Avenues; John Jacobs, Neville Public Museum, 210 Museum Pl., Green Bay, WI 54303; (414) 436-3767. **Green Lake** (43); Jct. Hwy. J and Swamp Road; Thomas Schultz, Rt. 2, Box 23, Green Lake, WI 54941; (414) 294-3021. **Hales Corners** (77); Jct. Hwy 41 and Puetz Rd. (Milwaukee Co. only); John Idzikowski, 418 E. Plainfield Ave., Milwaukee, WI 53207; (414) 481-6840. **Hartford** (71); Jct. Hwys. 60 and 83; Judy Haseleu, 337 W. State St., Hartford, WI 53027; (414) 673-5865. **Holcombe** (11); Chippewa-Rusk county line 1 mile E of Hwy. 27; C.A. Kemper, Box 818, Chippewa Falls, WI 54729; (715) 723-3815. **Horicon** (56); Jct. Main Ditch and Main Dike in Refuge; Dottie Thompson, Horicon National Wildlife Refuge, W 4279 Headquarters Rd., Mayville, WI 53050; (414) 387-2658. **Hudson** (29); Afton, MN; Boyd & Helen Lien, 5148 29th Ave. S., Minneapolis, MN 55417; (612) 729-5982. **Kenosha** (79); Jct. Hwys. 158 and HH (Kenosha Co. only); Ron Hoffmann, Box 886, Kenosha, WI 53141; (414) 654-5854. **Kettle Moraine** (55); Hwy. DD W of Auburn L.; Bill Volkert, Rt. 3, Campellsport, WI 53010; (414) 533-8939. **Kickapoo Valley** (38); Jct. Hwys. T and 131; Eric Epstein, Rt. 2, Box 100, Norwalk, WI 54648; (608) 823-7837. **La-Crosse** (34); LaCrosse Courthouse; Frederick Lesher, 509 Winona St., LaCrosse, WI 54603; (608) 783-1149. **Lake Geneva** (74); 42° 15'Lat., 88° 30' Long.; G.M. Culp, Rt. 3, Box 1, Lake Geneva, WI 53147. **Lakewood** (17); Jct. Hwys. T and FR 2117; John Woodcock, 1718 Cedar Grove Dr., Apt. 3A, Manitowoc, WI 54220; (414) 684-0447. **Luck** (8); Jct. 180th St. and 180th Ave.; Howard Jorgenson, Rt. 2, Luck, WI; (715) 472-2769. **Madison** (65); State Capitol; Randy Hoffman, 305 Fifth St., Waunakee, WI 53597; Al Shea, 2202 Manor Green Dr., Madison, WI 53711 (608) 849-4502. **Medford** (14); 2.5 miles NE of Whittlesey; Nick Risch, W5172 Allman Ave., Medford, WI 54451; (715) 748-6177. **Merrill** (18); NE corner of S-31 NW of Merrill; Alan Rusch, 3342 Westview Lane, Madison, WI 53713; (608) 274-1224. **Milwaukee** (76); Jct. Port Washington Rd. and Hampton Ave.; Jim Frank, 4339 W. Laverna Ave., Mequon, WI 53092; (414) 242-2443. **Mount Horeb** (64); Mount Horeb; Warren Gaskill, 10405 Bell Rd., Black Earth, WI 53515; (608) 767-3642. **Nelson** (31); 1 mile S of Jct. Hwys. I and D; C.A. Kemper, Box 818, Chippewa Falls, WI 54729; (715) 723-3815. **Newburg** (75); Jct. Hwy. 33 and Lakeland School Rd.; David Borneman, Riveredge Nature Center, P.O. Box 26, Newburg, WI 53060; (414) 675-6888. **New Richmond** (10); 2 miles E of Boardman; Joseph Merchak, Rt 3, Box 137C, River Falls, WI 54022; (715) 386-2082. **Oconomowoc** (72); Hwy 67, 2 miles N of Oconomowoc; Edward Peartree, 36516 Lisbon Rd., Oconomowoc, WI 53066; (414) 567-4086. **Oshkosh** (47); Jct. Hwys. 21 and 41; Thomas Ziebell, 1601 Rainbow Dr., Oshkosh, WI 54901; (414) 235-0326. **Owen** (35); Hwy. D 2.5 miles N of Hwy. 29; Nick Risch, W5172 Allman Ave, Medford, WI 54451; (715) 748-6177. **Oxbo** (6); Jct. Hwys. EE and 70; Maybelle Hardy, Rt. 1, Box 263, Park Falls, WI 54552; (715) 762-3178. **Pensaukee** (27); Pensaukee; Thomas Erdman, 4093 Hwy. S, Route 2, Oconto, WI 54153; (414) 834-3416. **Peshtigo** (24); Harmony Corners; Harold Lindberg, 311 Emery Ave., Peshtigo, WI 54157; (715) 582-4117. **Phelps** (15); Jct. FR 2139 and

FR 2533, 2 miles S of Phelps; Bill Reardon, 2547 Hwy 70 E, Eagle River, WI 54521; (715) 479-8055. **Plymouth** (54); Jct. Hwys. 23 and C; Harold Koopman, 415 Caroline St., Plymouth, WI 53073; (414) 892-8101. **Poynette** (62); Jct. Hwys. 51 and CS; Mark & Sue Martin, Goose Pond Sanctuary, W7468 Prairie Lane, Arlington, WI 53911; (608) 635-4160. **Racine** (78); Hwy. H 0.5 miles S of Hwy. K (Racine Co. only); Gerald DeBoer, 2406 Kinzie Ave., Racine WI 53405; (414) 637-0393. **Randolph** (70); Hwy P midway between Cambria and Randolph; Charles Gilmore, 115 Meadowood Dr., Randolph, WI 53956; (414) 326-3221. **Richland Center** (59); Jct. Hwys. O and OO SE of Richland Center; Robert Hirschy, University of Wisconsin Center-Richland, Richland Center, WI 53581; (608) 647-3042. **Sauk City** (63); 2.5 miles SE of Witwen; Kenneth Lange, Devil's Lake State Park, S 5975 Park Rd., Baraboo, WI 53913; (608) 356-8301. **Shawano** (23); 3 miles S and 1 mile E Jct. Hwys. 22 and 29; Mark Peterson, Box 53, Caroline, WI 54928; (715) 754-2661. **Shiocton** (45); Jct. Hwys. M and 54; James Anderson, Rt. 1, Rogers Rd., New London, WI 54961; (414) 779-6433. **Solon Springs** (4); Jct. Hwys. M and 53; Bernard Klugow, Box 13, Brule, WI 54820; (715) 372-4858. **Spencer** (20); Jct. Hwys. F and 153; Janice Luepke, B-894 Eau Pleine Rd., Spencer, WI 54479; (715) 659-3910. **Stevens Point** (40); Old Main Building, U. .–Stevens Point; Nancy Stevenson, 1890 Red Pine Lane, Stevens Point, WI 54481; (715) 341-0084. **Stockbridge** (48); Kloten Swamp; Ronald Zahringer, N5514 Long Road, Hilbert, WI 54129; (414) 439-1044. **Sturgeon Bay** (26); Sturgeon Bay; Adrian Freitag, 940 N. 3rd Ave., Sturgeon, Bay, WI 54235; (414) 743-2978. **Three Lakes** (16); 6 miles E of Three Lakes; Bill Reardon, 2547 Hwy. 70 E, Eagle River, WI 54521; (715) 479-8055. **Trempealeau** (33); NE corner of Trempealeau; Thomas Hunter, 575 Jay St., Trempealeau, WI 54661. **Waukesha** (73); Jct. Hwy. D and Brookhill Rd. (old Hwy. ZZ); John Bielefeldt, N3066 Hardscrabble Rd., Dousman, WI 53118; (414) 495-8397. **Wausau** (19); Jct. Grand Ave. and Thomas St.; Duane Goetsch, 3005 Heron Ave., Wausau, WI 54401; (715) 845-2651. **Wautoma** (42); Mount Morris; Delbert Greenman, Rt. 1, Box 263, Redgranite, WI 54970; (414) 787-3036. **Willard** (36); 1 mile E and 1.5 miles S of Willard; Janice Luepke, B-894 Eau Pleine Rd., Spencer, WI 54479; (715) 659-3910. **Woodland Dunes NW, NE, SW, and SE** (50–53); All in Manitowoc Co. as drawn on a map; Bernard Brouchoud, Woodland Dunes Nature Center, P.O. Box 763, Manitowoc, WI 54220.

General Results

Results of the counts are reported in Tables 2 through 7, in which counts are grouped by region from northwest to southeast; Table 8 lists rare species. In Table 7 numbers of the more common species are compared with the average numbers for the previous 10 years, after correction for differences in participation (total party-hours). Sixty-five percent of the species were more abundant than in the previous 10 years, with 10 species being at least twice as abundant. Twenty-nine species were found in record numbers, several of them occurring in numbers that greatly exceeded any previous total. Highlighting the counts were several rarities. New to the Wisconsin Christmas Counts was a Lark Sparrow that was seen at Racine. A Sandhill Crane at Steven's Point, a Thayer's Gull at Milwaukee, a Mountain Bluebird

Table 2. The number of individuals of each species found on 14 or more counts in northwest Wisconsin.

Species	Bayfield	Ashland	Brule	Solon Springs	Fifield	Oxbo	Grantsburg	Luck	Amery	New Richmond	Holcomb	Chippewa Falls	Gilman	Medford
Canada Goose	0	6	0	8	0	0	197	0	0	598	0	15	0	0
American Black Duck	0	70	3	7	0	0	0	0	3	0	0	5	0	0
Mallard	0	120	3	7	0	0	10	0	252	110	0	314	0	0
Common Goldeneye	11	3	7	4	0	0	0	0	0	3	0	13	0	0
Common Merganser	19	1	2	0	0	0	0	0	0	0	0	0	0	0
Bald Eagle	1	3	7	2	1	5	8	1	3	2	2	0	1	2
Northern Harrier	0	0	0	0	0	0	2	0	0	0	0	0	0	0
Sharp-shinned Hawk	0	0	0	0	0	0	0	0	0	1	0	0	2	0
Cooper's Hawk	0	0	0	1	0	0	0	0	1	0	0	1	0	1
Red-tailed Hawk	0	0	0	0	0	0	2	1	5	4	3	18	2	4
Rough-legged Hawk	0	2	0	0	0	8	6	0	1	1	3	6	30	20
American Kestrel	0	0	0	0	0	0	1	0	0	3	1	3	0	1
Gray Partridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ring-necked Pheasant	0	0	0	0	0	0	5	1	1	1	0	0	2	6
Ruffed Grouse	18	6	11	3	4	18	2	1	11	0	13	3	17	27
American Coot	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Snipe	0	1	0	0	0	0	0	0	0	1	0	0	0	0
Ring-billed Gull	0	23	0	0	0	0	0	0	0	0	0	0	0	0
Herring Gull	120	87	0	0	0	0	0	0	0	0	0	0	0	0
Rock Dove	10	135	5	6	41	0	246	22	107	177	152	247	193	105
Mourning Dove	0	46	0	0	11	0	2	2	3	32	1	26	0	136
Eastern Screech Owl	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Great Horned Owl	0	0	1	1	0	0	0	1	1	1	0	1	16	1
Barred Owl	1	0	4	0	0	3	0	0	3	0	0	0	3	2
Belted Kingfisher	0	1	1	0	0	0	0	0	0	1	1	0	0	0
Red-headed Woodpecker	0	0	0	0	0	0	0	3	1	0	1	0	0	0
Red-bel. Woodpecker	0	0	0	0	0	0	11	11	7	3	6	12	1	3
Downy Woodpecker	32	2	16	18	15	22	32	45	24	19	16	46	25	62
Hairy Woodpecker	6	6	12	25	19	32	22	30	14	6	14	25	36	38
Northern Flicker	0	0	0	0	0	0	0	3	0	1	0	0	0	0
Pileated Woodpecker	3	1	3	2	4	5	10	9	3	0	1	2	8	3
Horned Lark	0	0	0	0	0	0	0	0	16	37	0	7	5	18
Blue Jay	62	49	65	111	76	80	239	104	68	66	71	223	146	183
American Crow	5	80	12	18	60	13	126	23	95	141	416	805	219	886
Common Raven	21	23	67	73	28	31	17	1	0	0	0	0	35	18
Black-cap. Chickadee	170	138	210	242	388	182	299	153	288	91	453	310	453	908
Red-breasted Nuthatch	12	5	14	51	53	19	1	8	8	0	3	3	26	15
White-br. Nuthatch	19	14	11	30	20	18	81	81	17	26	28	74	44	36
Brown Creeper	0	0	6	1	1	0	0	8	1	0	0	1	0	6
Golden-cr. Kinglet	0	0	0	0	1	0	0	1	0	0	1	0	0	5
American Robin	0	12	0	0	0	0	0	1	1	3	0	1	0	1
Cedar Waxwing	0	0	0	0	0	0	0	0	0	18	0	27	0	3
Northern Shrike	1	1	1	1	0	0	0	0	2	1	3	2	5	7
European Starling	30	503	2	0	45	0	424	71	94	419	210	599	405	197
Northern Cardinal	0	0	0	1	2	0	2	35	8	17	11	68	4	24
American Tree Sparrow	0	0	1	0	2	0	11	64	4	97	22	113	8	12
Song Sparrow	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Swamp Sparrow	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White-thr. Sparrow	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Dark-eyed Junco	0	0	0	0	1	0	36	71	22	74	10	173	1	23
Lapland Longspur	0	0	0	0	0	0	0	0	4	88	0	0	1	3
Snow Bunting	20	0	12	0	*	1	30	0	116	0	150	125	114	293
Red-winged Blackbird	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Common Grackle	0	1	0	0	2	0	0	0	0	0	0	0	0	4
Brown-headed Cowbird	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pine Grosbeak	87	96	26	20	54	9	2	0	0	0	0	0	69	19
Purple Finch	11	9	16	3	16	6	38	31	22	16	7	1	3	3
Red Crossbill	0	5	0	0	25	0	15	0	0	0	0	3	21	8
White-w. Crossbill	9	64	0	7	36	15	25	0	0	0	0	6	25	35
Common Redpoll	30	192	87	23	5	58	35	10	86	0	0	0	55	20
Pine Siskin	76	136	450	437	447	230	340	144	32	13	626	357	920	698
American Goldfinch	45	47	96	7	49	30	253	119	40	73	191	387	88	133
Evening Grosbeak	62	136	212	304	200	434	470	31	0	0	169	37	438	766
House Sparrow	43	68	2	2	255	0	714	262	600	459	392	1040	696	1534
Total Species	29	40	37	33	31	24	36	33	38	38	31	44	41	49

* Found within 3 days of the count day but not on the day of the count.

Table 3. The number of individuals of each species found on 14 or more counts in northeast Wisconsin.

Species	Phelps	Three Lakes	Lakeland	Merrill	Wausau	Spencer	Dancy	Caroline	Shawano	Peshtigo	Ephraim	Sturgeon Bay	Pensaukee	Green Bay
Canada Goose	0	0	0	0	0	0	0	0	1	0	126	2	*	2106
American Black Duck	0	0	0	1	0	0	0	4	6	2	3	11	0	463
Mallard	0	0	0	403	350	0	0	195	3	10	83	187	*	4116
Common Goldeneye	0	0	0	0	2	0	0	0	33	12	385	46	2	*
Common Merganser	0	0	0	0	0	0	4	0	0	0	62	2	6	510
Bald Eagle	3	0	0	0	0	0	3	0	2	0	*	0	0	0
Northern Harrier	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Sharp-shinned Hawk	0	0	0	1	0	1	0	0	0	0	2	0	0	0
Cooper's Hawk	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Red-tailed Hawk	0	0	0	0	0	10	1	2	6	1	0	0	0	29
Rough-legged Hawk	0	1	1	5	1	5	0	5	5	1	1	1	0	8
American Kestrel	0	0	0	1	0	7	2	0	7	0	1	0	2	37
Gray Partridge	0	0	0	0	0	0	0	0	14	0	0	0	0	49
Ring-necked Pheasant	0	0	0	0	0	0	0	0	0	0	0	1	0	8
Ruffed Grouse	8	2	0	4	6	23	0	1	2	3	8	0	*	1
American Coot	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Common Snipe	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ring-billed Gull	0	0	0	0	0	0	0	0	0	0	3	0	0	5
Herring Gull	0	0	0	0	0	0	0	0	0	13	1690	27	3	638
Rock Dove	0	0	16	67	60	1040	197	57	456	15	319	32	46	1500
Mourning Dove	0	0	1	128	404	143	111	54	497	53	202	17	253	833
Eastern Screech Owl	0	0	0	0	0	0	0	0	0	0	0	0	*	0
Great Horned Owl	0	0	0	0	0	8	0	0	3	0	0	0	3	12
Barred Owl	1	0	0	0	0	1	0	0	0	0	1	1	2	1
Belted Kingfisher	0	0	0	0	0	0	0	0	1	1	1	1	0	*
Red-headed Woodpecker	0	0	0	0	0	0	0	5	5	0	1	0	0	1
Red-bel. Woodpecker	0	0	0	2	1	8	2	9	9	2	8	0	*	7
Downy Woodpecker	15	12	5	13	16	43	7	23	48	14	55	1	6	36
Hairy Woodpecker	7	5	1	12	6	13	1	10	35	7	57	2	9	18
Northern Flicker	0	0	0	0	0	0	0	1	2	0	*	0	0	3
Pileated Woodpecker	3	1	1	0	1	1	0	0	8	1	5	0	2	0
Horned Lark	0	0	0	0	0	32	0	0	23	0	9	0	0	162
Blue Jay	16	16	9	56	39	167	63	113	251	103	252	11	26	113
American Crow	1	2	17	142	75	213	135	43	247	83	297	38	11	173
Common Raven	29	8	5	9	0	0	0	0	0	3	3	0	2	0
Black-cap. Chickadee	91	68	63	226	108	313	59	214	275	134	496	21	32	152
Red-breasted Nuthatch	0	3	6	5	1	0	0	9	16	2	25	0	0	5
White-br. Nuthatch	8	5	3	19	9	53	7	63	83	8	70	1	7	72
Brown Creeper	0	0	1	0	0	0	0	0	6	0	1	0	1	3
Golden-cr. Kinglet	0	1	2	0	0	0	0	0	1	0	5	0	0	0
American Robin	0	0	0	0	2	1	0	0	0	0	*	0	*	2
Cedar Waxwing	0	0	0	0	0	0	0	1	0	0	21	0	0	7
Northern Shrike	1	1	0	0	1	6	1	0	1	1	4	0	*	1
European Starling	0	3	29	105	229	457	316	28	750	126	506	63	135	1192
Northern Cardinal	0	0	0	3	8	16	22	49	41	4	50	4	3	59
American Tree Sparrow	0	0	0	2	1	42	35	45	67	18	44	1	68	84
Song Sparrow	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Swamp Sparrow	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White-thr. Sparrow	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dark-eyed Junco	0	0	0	6	36	40	21	138	100	18	89	2	*	111
Lapland Longspur	0	0	0	15	0	18	0	0	0	0	0	0	3	100
Snow Bunting	0	312	300	760	0	255	70	0	213	0	183	50	16	1125
Red-winged Blackbird	0	0	0	0	0	0	0	0	0	0	2	0	3	6
Common Grackle	0	0	0	1	0	0	3	0	1	0	0	0	4	14
Brown-headed Cowbird	0	1	0	0	0	0	0	0	0	0	0	0	0	11
Pine Grosbeak	9	4	0	14	0	0	6	0	3	6	15	0	0	0
Purple Finch	0	0	0	0	0	0	0	57	15	0	25	0	12	4
Red Crossbill	30	4	0	2	0	0	11	0	0	0	*	0	0	0
White-w. Crossbill	7	50	26	8	0	12	0	10	0	0	0	0	0	0
Common Redpoll	3	0	40	0	0	36	7	4	4	0	*	0	*	0
Pine Siskin	148	260	42	356	32	105	17	114	370	15	448	2	146	113
American Goldfinch	6	19	7	138	74	42	110	254	724	48	224	24	223	170
Evening Grosbeak	20	109	95	132	12	1	99	65	91	2	274	8	15	0
House Sparrow		30	0	191	412	1999	399	135	677	82	212	43	13	1920
Total Species	20	25	21	32	26	36	29	32	47	31	55	30	31	54

*Found within 3 days of the count day but not on the day of the count.

Table 4. The number of individuals of each species found on 14 or more counts in westcentral and central Wisconsin.

Species	Hudson	Durand	Nelson	Arcadia	Trempealeau	LaCrosse	Owen	Willard	Black River Falls	Kickapoo Valley	Arpin	Stevens Point	Amherst	Wautoma
Canada Goose	331	0	0	0	*	296	0	0	0	0	0	2	0	0
American Black Duck	1	0	0	0	0	3	0	0	0	0	0	9	0	0
Mallard	131	0	6	20	39	883	0	0	0	0	0	762	0	133
Common Goldeneye	10	2	21	0	0	7	0	0	0	0	0	0	0	0
Common Merganser	6	5	36	0	0	805	0	0	0	0	0	5	0	0
Bald Eagle	2	3	24	4	6	23	3	0	6	1	0	2	0	0
Northern Harrier	0	0	0	0	1	0	0	0	0	0	*	0	1	1
Sharp-shinned Hawk	0	1	1	0	0	2	0	0	0	0	0	*	0	1
Cooper's Hawk	0	0	0	0	0	0	0	1	0	0	*	0	0	2
Red-tailed Hawk	1	12	52	18	22	17	10	13	8	44	9	2	3	2
Rough-legged Hawk	0	11	14	4	3	3	17	8	2	5	7	4	0	4
American Kestrel	0	2	7	3	7	9	3	1	0	4	2	*	1	0
Gray Partridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ring-necked Pheasant	0	0	0	1	1	0	1	4	0	0	0	1	0	13
Ruffed Grouse	1	3	12	0	4	26	9	8	6	8	3	4	1	7
American Coot	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Common Snipe	0	0	4	0	0	0	0	0	0	2	0	0	0	1
Ring-billed Gull	0	0	0	0	0	20	0	0	0	0	0	0	0	0
Herring Gull	0	0	0	0	0	0	0	0	0	0	0	3	0	0
Rock Dove	39	209	605	175	74	293	773	222	102	85	104	346	401	65
Mourning Dove	6	73	35	25	22	130	165	74	8	14	26	130	98	86
Eastern Screech Owl	0	0	0	1	0	4	0	0	0	0	1	0	0	0
Great Horned Owl	0	1	3	2	3	5	7	8	2	1	7	0	8	1
Barred Owl	0	1	0	2	3	8	3	0	3	0	1	0	0	0
Belted Kingfisher	1	1	0	0	3	3	0	0	0	4	*	2	0	0
Red-headed Woodpecker	0	0	2	2	0	0	1	2	0	0	1	2	1	1
Red-bel. Woodpecker	1	17	34	12	9	29	12	6	24	27	15	5	5	15
Downy Woodpecker	10	27	73	16	29	66	78	47	72	36	36	49	33	52
Hairy Woodpecker	1	9	36	8	19	22	35	29	46	13	30	15	15	24
Northern Flicker	0	0	0	0	1	1	*	1	0	0	0	0	0	0
Pileated Woodpecker	1	6	7	0	3	6	2	4	6	1	2	6	1	0
Horned Lark	0	77	0	0	0	25	30	24	2	35	*	61	74	0
Blue Jay	14	136	396	153	128	188	137	255	258	118	91	225	124	205
American Crow	66	212	317	189	139	251	292	167	79	249	52	469	144	244
Common Raven	0	0	0	0	0	0	2	5	4	0	0	0	2	0
Black-cap. Chickadee	51	202	362	66	110	417	338	446	301	138	371	457	114	319
Red-breasted Nuthatch	0	0	0	2	2	5	4	3	6	1	6	5	1	9
White-br. Nuthatch	12	25	77	16	47	123	50	66	76	40	54	82	32	84
Brown Creeper	0	2	4	0	4	20	0	0	1	4	0	1	0	0
Golden-cr. Kinglet	0	0	0	0	0	0	0	0	0	11	1	0	0	0
American Robin	0	1	0	0	2	211	0	1	1	0	0	1	1	2
Cedar Waxwing	0	4	20	10	*	1	0	0	0	0	0	0	3	*
Northern Shrike	0	1	1	2	0	0	6	4	1	2	2	2	1	1
European Starling	83	273	391	331	330	253	441	550	77	125	71	245	61	33
Northern Cardinal	14	78	294	203	72	182	40	85	104	116	41	54	24	91
American Tree Sparrow	2	0	259	211	111	317	166	209	17	217	140	82	140	80
Song Sparrow	0	0	0	0	2	0	0	3	0	1	0	0	0	0
Swamp Sparrow	0	0	0	0	0	0	0	0	0	0	0	1	0	0
White-thr. Sparrow	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dark-eyed Junco	73	387	640	368	402	441	28	149	592	466	84	208	200	811
Lapland Longspur	0	0	0	0	0	0	76	175	0	0	0	0	0	0
Snow Bunting	0	7	0	0	0	0	1159	554	25	0	*	585	435	53
Red-winged Blackbird	0	0	15	0	7	8	0	0	0	0	0	0	0	0
Common Grackle	3	0	10	0	0	2	2	0	2	0	3	0	0	0
Brown-headed Cowbird	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Pine Grosbeak	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purple Finch	48	11	44	10	30	15	6	0	93	12	17	5	32	34
Red Crossbill	0	0	0	0	0	0	0	0	0	0	0	0	0	1
White-w. Crossbill	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Redpoll	0	0	0	0	0	0	3	37	4	0	0	35	0	0
Pine Siskin	63	68	3	0	41	2	127	203	289	26	47	226	127	114
American Goldfinch	27	41	325	23	135	108	137	236	463	232	197	559	399	583
Evening Grosbeak	0	0	1	0	0	0	63	382	707	6	78	77	18	160
House Sparrow	28	884	2338	632	565	585	1953	2117	254	821	499	637	289	188
Total Species	29	37	38	30	41	56	39	36	38	40	32	44	33	38

*Found within 3 days of the count day but not on the day of the count.

Table 5. The number of individuals of each species found on 14 or more counts in eastcentral Wisconsin.

Species	Green Lake	Fremont	Shiocton	Appleton	Oshkosh	Stockbridge	Fond du Lac	Woodland Dunes NW	Woodland Dunes NE	Woodland Dunes SW	Woodland Dunes SE	Plymouth	Kettle Moraine	Horicon
Canada Goose	4527	1	14	36	51	*	55	0	0	1456	21	194	0	23000
American Black Duck	36	20	0	60	28	0	60	0	0	0	12	17	0	0
Mallard	182	325	5	1912	466	0	542	0	10	97	87	253	0	0
Common Goldeneye	128	5	0	328	126	0	0	0	53	1	37	11	0	0
Common Merganser	98	0	0	87	1910	0	0	0	46	0	11	0	0	0
Bald Eagle	4	2	1	0	2	0	0	0	0	0	0	0	0	0
Northern Harrier	2	0	0	0	1	0	0	0	1	0	0	0	0	3
Sharp-shinned Hawk	0	0	1	1	0	*	0	0	1	0	0	2	0	0
Cooper's Hawk	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Red-tailed Hawk	14	10	41	14	14	7	3	0	3	2	3	13	6	8
Rough-legged Hawk	3	5	8	1	1	0	0	0	4	9	0	2	0	9
American Kestrel	2	6	20	13	25	10	15	0	3	10	2	11	2	12
Gray Partridge	0	0	22	8	0	8	15	0	5	7	0	48	0	0
Ring-necked Pheasant	1	18	2	41	42	0	1	0	2	0	9	1	0	12
Ruffed Grouse		0	0	0	0	0	1	3	1	4	1	1	0	0
American Coot	10	0	0	3	2	0	0	0	0	0	0	0	0	0
Common Snipe	0	0	0	0	0	*	0	0	0	0	0	2	0	0
Ring-billed Gull	8	0	0	5	35	*	25	2	3	0	60	0	2	0
Herring Gull	66	0	0	96	129	88	0	0	1149	6	162	18	0	0
Rock Dove	232	495	1024	313	502	317	267	5	64	361	39	260	218	305
Mourning Dove	22	281	847	250	1008	16	73	5	238	60	163	128	43	72
Eastern Screech Owl	0	0	1	0	1	1	0	0	0	0	0	0	0	0
Great Horned Owl	3	7	0	3	5	*	0	3	2	3	0	3	2	3
Barred Owl	0	2	1	0	1	0	0	2	0	0	0	2	0	1
Belted Kingfisher	0	0	0	0	0	0	0	0	0	0	1	1	1	0
Red-headed Woodpecker	0	1	0	0	0	1	0	0	0	0	1	2	0	0
Red-bel. Woodpecker	11	5	18	6	10	5	0	0	1	3	0	13	5	2
Downy Woodpecker	28	18	49	22	52	21	8	4	14	12	15	45	11	12
Hairy Woodpecker	8	9	21	11	11	8	5	6	7	3	5	28	10	1
Northern Flicker	0	6	1	1	*	0	0	0	0	0	1	*	1	0
Pileated Woodpecker	0	1	1	0	0	0	0	0	1	0	0	1	0	0
Horned Lark	42	5	22	0	106	64	121	0	0	32	14	78	3	32
Blue Jay	45	41	161	32	119	43	34	8	44	43	30	80	70	28
American Crow	144	101	149	158	97	32	6	7	147	68	82	316	101	4
Common Raven	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Black-cap. Chickadee	94	76	206	71	85	42	42	39	149	55	62	85	100	46
Red-breasted Nuthatch	2	2	5	2	5	0	1	0	23	1	0	4	4	0
White-br. Nuthatch	24	22	57	28	68	19	6	1	23	22	13	25	21	7
Brown Creeper	2	2	3	5	9	1	0	0	1	0	0	1	0	0
Golden-cr. Kinglet	0	2	0	14	1	0	1	9	2	2	0	8	1	0
American Robin	2	0	0	11	3	1	2	0	1	0	1	3	0	1
Cedar Waxwing	0	0	0	19	0	*	0	0	0	0	7	4	0	0
Northern Shrike	3	2	7	0	1	0	0	0	1	0	0	3	2	1
European Starling	27	463	1545	698	1372	234	340	10	1270	222	223	1670	147	359
Northern Cardinal	74	11	67	50	73	11	14	6	57	17	27	45	30	16
American Tree Sparrow	465	243	289	68	247	13	99	2	58	19	23	125	25	299
Song Sparrow	0	1	2	0	0	0	0	0	2	2	3	1	1	2
Swamp Sparrow	0	0	0	0	0	*	0	0	0	0	0	2	0	0
White-thr. Sparrow	*	0	0	0	1	0	1	0	0	0	0	0	0	1
Dark-eyed Junco	447	156	366	88	364	39	91	29	133	42	88	190	218	53
Lapland Longspur	0	0	0	0	90	3	0	0	0	0	0	5	0	0
Snow Bunting	0	5	133	3	48	785	85	0	0	150	150	25	0	153
Red-winged Blackbird	0	0	2	8	*	0	0	0	0	1	0	2	1	170
Common Grackle	0	2	1	10	2	2	0	0	0	1	1	1	2	10
Brown-headed Cowbird	0	0	0	3	0	0	0	0	0	0	0	5	0	37
Pine Grosbeak	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purple Finch	27	0	0	4	0	4	8	0	4	4	0	40	2	0
Red Crossbill	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White-w. Crossbill	0	0	4	0	0	0	0	0	3	0	0	0	0	0
Common Redpoll	0	0	3	0	0	0	16	0	0	0	0	3	0	0
Pine Siskin	8	13	25	73	122	34	72	16	58	9	17	71	8	0
American Goldfinch	219	121	415	63	83	54	65	22	84	24	21	206	4	23
Evening Grosbeak	4	10	26	0	0	0	0	2	23	0	2	32	6	0
House Sparrow	104	551	1847	365	3319	908	808	77	476	943	272	1880	491	178
Total Species	50	41	41	45	50	29	33	22	47	37	43	57	34	33

*Found within 3 days of the count day but not on the day of the count.

Table 6. The number of individuals of each species found on 14 or more counts in southwest and southcentral Wisconsin.

Species	Bridgeport	Beetown	Richland Center	Clyde	Baraboo	Poynette	Sauk City	Mount Horeb	Madison	Blanchardville	Cooksville	Beloit	Fort Atkinson	Randolph
Canada Goose	0	0	0	0	158	275	17	2570	187	0	19	59	*	479
American Black Duck	0	0	0	0	0	68	8	0	51	5	2	0	17	0
Mallard	7	80	0	0	15	475	333	5	3602	0	44	324	7	0
Common Goldeneye	0	0	0	0	81	198	133	0	153	0	3	7	1	0
Common Merganser	6	0	0	0	59	476	229	0	632	0	1	0	0	0
Bald Eagle	33	83	6	0	1	7	38	1	*	1	0	0	0	0
Northern Harrier	1	0	4	0	0	5	3	3	3	3	0	3	0	1
Sharp-shinned Hawk	0	0	0	0	1	4	5	1	4	1	*	0	1	0
Cooper's Hawk	0	0	0	0	1	2	5	0	3	0	*	0	3	0
Red-tailed Hawk	45	35	37	3	13	45	112	85	29	53	10	4	24	8
Rough-legged Hawk	16	7	3	0	4	21	25	2	5	9	*	0	3	1
American Kestrel	12	10	16	0	4	12	42	8	14	12	8	12	16	4
Gray Partridge	0	43	0	0	0	116	0	1	1	0	0	0	0	0
Ring-necked Pheasant	.	0	0	0	0	16	1	4	14	16	5	2	0	1
Ruffed Grouse	5	1	7	0	6	18	17	31	1	11	0	0	0	0
American Coot	0	0	0	0	0	2	1	0	930	0	0	0	0	0
Common Snipe	8	0	6	0	0	4	0	1	3	2	0	1	0	0
Ring-billed Gull	12	1	0	0	0	0	72	0	301	0	0	2	0	6
Herring Gull	1	0	0	0	0	6	1400	0	1051	0	0	1	2	0
Rock Dove	404	392	643	0	81	331	1039	197	1309	573	209	527	185	138
Mourning Dove	32	30	69	1	270	240	359	145	1432	179	32	264	156	85
Eastern Screech Owl	0	0	0	0	0	5	16	0	106	4	1	2	0	0
Great Horned Owl	11	1	1	0	0	26	48	4	45	34	*	3	1	0
Barred Owl	3	0	1	0	0	2	11	0	1	3	1	0	0	0
Belted Kingfisher	4	7	2	0	0	1	1	2	11	3	0	0	2	0
Red-headed Woodpecker	1	1	3	0	0	6	0	0	4	0	0	0	1	1
Red-bel. Woodpecker	67	17	44	0	12	38	60	41	41	24	5	9	3	3
Downy Woodpecker	60	22	78	3	27	94	154	95	214	82	25	37	50	6
Hairy Woodpecker	30	2	38	2	10	34	50	40	58	28	5	11	4	2
Northern Flicker	1	1	8	0	2	3	3	1	5	1	1	0	0	0
Pileated Woodpecker	11	2	8	0	2	2	11	6	0	2	0	0	0	0
Horned Lark	16	77	10	0	5	117	22	21	34	96	56	75	5	4
Blue Jay	135	69	314	2	49	311	388	304	439	182	73	68	47	26
American Crow	85	124	551	7	200	459	914	276	973	161	45	394	206	23
Common Raven	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Black-cap. Chickadee	212	88	343	11	64	455	671	364	746	264	70	64	111	17
Red-breasted Nuthatch	6	0	2	0	1	21	38	3	15	3	1	0	6	0
White-br. Nuthatch	92	18	121	6	38	115	183	160	214	90	9	27	17	3
Brown Creeper	5	2	4	0	3	3	13	2	74	5	*	6	3	0
Golden-cr. Kinglet	14	0	5	0	3	24	8	4	58	17	0	0	4	0
American Robin	1	0	3	0	0	6	*	2	108	1	0	4	1	0
Cedar Waxwing	8	0	2	0	75	5	0	0	46	25	*	0	3	5
Northern Shrike	1	1	1	0	0	4	4	1	1	0	1	1	3	*
European Starling	1082	719	623	2	167	640	1033	416	6330	1132	206	590	314	234
Northern Cardinal	264	173	673	4	46	185	317	192	502	264	118	132	62	12
American Tree Sparrow	125	51	315	0	92	1281	765	162	2615	655	80	519	57	135
Song Sparrow	14	10			2	21	26	12	144	65	7	27	13	0
Swamp Sparrow	0	1	0	0	2	6	5	2	28	18	0	1	2	0
White-thr. Sparrow	0	0	0	0	1	2	1	1	17	0	0	0	0	0
Dark-eyed Junco	910	580	837	1	320	3216	1880	1189	2020	1108	437	1709	254	159
Lapland Longspur	0	0	0	0	0	2	0	0	4	0	0	0	0	0
Snow Bunting	105	0	0	0	0	189	0	0	1	8	0	0	0	6
Red-winged Blackbird	0	4	0	0	0	1	68	7	23	8	0	0	0	0
Common Grackle	0	0	0	0	0	3	6	58	24	0	1	0	0	5
Brown-headed Cowbird	0	0	0	0	0	3	1	8	11	3	0	0	0	0
Pine Grosbeak	0	0	0	0	0	5	0	0	0	0	0	0	0	0
Purple Finch	19	8	14	0	17	50	42	2	39	36	10	0	12	0
Red Crossbill	0	0	0	0	0	1	50	0	14	2	0	0	0	0
White-w. Crossbill	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Redpoll	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Pine Siskin	58	45	12	0	69	156	310	61	343	1	16	0	33	0
American Goldfinch	293	15	547	0	124	523	377	218	517	166	129	50	39	62
Evening Grosbeak	0	0	4	0	2	4	2	0	1	0	0	0	0	0
House Sparrow	1745	1064	2347	0	292	1635	1735	1021	4100	1889	511	1217	486	164
Total Species	51	42	42	11	40	76	68	53	91	46	37	38	43	27

*Found within 3 days of the count day but not on the day of the count.

Table 7. The number of individuals of each species found on 14 or more counts in southeast Wisconsin and total counts for the state with % change from 10-year average.

Species	Hartford	Oconomowoc	Waukesha	Lake Geneva	Newburg	Milwaukee	Hales Corners	Racine	Kenosha	Number of Counts	Total Birds	Percent Change
Canada Goose	0	1831	239	666	411	986	770	591	86	38	42386	+ 10
American Black Duck	0	152	35	3	31	370	65	32	2	36	1665	+ 20
Mallard	0	855	242	95	366	3974	560	1315	242	50	24546	+ 7
Common Goldeneye	7	13	0	30	71	283	264	174	975	39	3831	+ 7
Common Merganser	0	0	0	0	3	11	2	9	23	29	5060	+116
Bald Eagle	0	1	0	0	0	0	0	0	0	39	300	+ 36
Northern Harrier	0	0	1	0	2	0	1	0	0	21	43	− 8
Sharp-shinned Hawk	0	2	1	0	3	2	0	0	0	24	42	+ 32
Cooper's Hawk	0	2	1	0	1	0	1	0	0	17	28	+ 31
Red-tailed Hawk	12	20	21	1	48	12	7	10	4	64	1077	+ 26
Rough-legged Hawk	0	0	1	1	2	0	1	1	1	58	338	+ 33
American Kestrel	9	6	12	1	35	17	5	29	6	57	526	+ 30
Gray Partridge	0	2	0	0	23	0	0	0	0	15	262	− 7
Ring-necked Pheasant	1	8	2	3	23	9	6	13	20	44	327	− 42
Ruffed Grouse	0	0	0	0	6	0	0	0	0	52	398	− 1
American Coot	0	127	75	8	2	1	2	1	*	15	1166	+197
Common Snipe	0	0	6	0	4	0	0	0	0	15	46	+ 79
Ring-billed Gull	19	11	9	0	309	4071	120	502	659	26	6285	+199
Herring Gull	0	0	13	61	59	704	45	1138	889	29	9665	0
Rock Dove	459	662	213	29	1380	443	73	538	324	75	23295	+ 9
Mourning Dove	171	271	516	76	1399	708	64	688	92	72	14333	+126
Eastern Screech Owl	1	0	17	1	13	2	2	15	1	22	197	+109
Great Horned Owl	0	3	33	3	54	9	3	6	*	51	416	+ 81
Barred Owl	1	1	1	0	25	1	0	0	0	36	104	+ 48
Belted Kingfisher	0	0	5	0	6	1	0	1	1	31	72	+ 23
Red-headed Woodpecker	0	0	3	1	1	0	0	1	*	30	57	− 78
Red-bel. Woodpecker	3	11	4	2	39	6	1	2	1	64	793	+ 26
Downy Woodpecker	6	62	40	13	225	55	8	27	2	79	2988	+ 23
Hairy Woodpecker	6	17	16	0	85	13	1	2	3	78	1360	+ 6
Northern Flicker	0	1	2	2	13	3	1	1	3	31	75	− 38
Pileated Woodpecker	0	0	0	0	1	0	0	0	0	47	171	+ 28
Horned Lark	25	185	12	95	208	0	7	33	28	49	2287	+187
Blue Jay	32	51	159	16	338	25	3	62	17	79	9121	+ 5
American Crow	93	203	396	148	461	618	144	220	83	79	15442	− 52
Common Raven	0	0	0	0	0	0	0	0	0	21	386	− 33
Black-cap. Chickadee	91	172	288	28	981	396	19	126	54	79	17016	+ 19
Red-breasted Nuthatch	9	0	7	1	25	10	3	1	3	61	537	− 14
White-br. Nuthatch	26	42	56	10	237	45	6	21	2	79	3568	+ 14
Brown Creeper	5	2	4	0	7	2	1	0	1	45	238	+ 11
Golden-cr. Kinglet	0	0	4	0	14	8	2	4	3	34	241	+ 14
American Robin	0	6	20	0	11	29	5	8	3	41	477	+ 41
Cedar Waxwing	0	*	1	0	40	2	*	0	*	25	357	− 75
Northern Shrike	0	0	1	0	7	0	*	0	*	50	108	− 24
European Starling	461	385	740	506	2839	2028	483	1005	127	76	40844	− 78
Northern Cardinal	78	66	113	20	517	165	10	91	5	72	6336	+ 74
American Tree Sparrow	145	75	741	53	1267	166	131	226	219	70	14542	+ 15
Song Sparrow	3	2	5	2	26	8	10	19	2	32	439	+199
Swamp Sparrow	0	0	0	0	5	1	1	2	2	16	79	+ 90
White-thr. Sparrow	0	0	0	0	1	3	1	2	2	14	37	− 41
Dark-eyed Junco	242	354	388	294	1955	412	76	433	319	71	27218	+ 56
Lapland Longspur	0	0	0	0	1	0	0	0	2	17	590	+216
Snow Bunting	0	0	0	0	0	0	0	1	52	43	8862	+149
Red-winged Blackbird	0	0	6	0	2	1	9	61	4	26	421	− 91
Common Grackle	1	2	4	8	18	1	2	1	4	39	222	− 38
Brown-headed Cowbird	0	1	1	0	2	6	0	3	0	16	97	− 64
Pine Grosbeak	0	0	0	0	0	0	0	0	*	17	444	− 30
Purple Finch	0	47	20	0	11	11	*	0	2	56	1085	− 23
Red Crossbill	0	0	0	0	0	0	0	0	0	15	192	+ 36
White-w. Crossbill	0	0	0	0	0	0	0	0	0	17	342	− 9
Common Redpoll	0	0	0	0	0	0	0	0	3	26	799	− 77
Pine Siskin	2	38	58	22	115	53	3	43	33	74	10407	+300
American Goldfinch	28	279	132	46	535	236	14	63	162	78	13047	+ 47
Evening Grosbeak	0	0	12	0	1	0	0	0	0	49	5804	− 23
House Sparrow	783	1439	702	582	3944	1145	152	715	13	76	63870	+ 12
Total Species	29	44	58	38	66	62	56	61	59			

*Found within 3 days of the count day but not on the day of the count.

Table 8. Species found on fewer than 14 counts.

Species	No. of Counts	No. of Birds	Count and Number Seen
Common Loon	3	11	(Baraboo), Madison 3, Lake Geneva 1, Kenosha 7
Pied-billed Grebe	2	2	Owen 1, Oconomowoc 1
Horned Grebe	4	6	Madison 2, Milwaukee 2, Racine 1, Kenosha 1
Double-cr. Cormorant	4	9	Ashland 2, Ephraim 1, Green Bay 5, LaCrosse 1
Great Blue Heron	6	6	(Ashland), Hudson 1, Trempealeau 1, Wautoma 1, Kettle Moraine 1, Madison 1, (Newburg), Kenosha 1
Black-cr. Night Heron	1	1	Green Bay 1
Tundra Swan	7	1032	Bayfield 4, Chippewa Falls 1, LaCrosse 600, Green Lake 170, (Oshkosh), (Stockbridge), (Plymouth), Sauk City 1, (Madison), Oconomowoc 226, (Newburg), Hales Corners 30
Mute Swan	6	29	Solon Springs 9, Shawano 2, Stevens Point 4, Green Lake 2, Sauk City 1, (Fort Atkinson), Waukesha 11
Snow Goose	4	7	Ephraim 2, Stevens Point 1, Appleton 1, (Sauk City), Madison 3
Wood Duck	12	23	Chippewa Falls 2, Caroline 1, Green Bay 1, Trempealeau 2, LaCrosse 2, Kickapoo Valley 1, Green Lake 1, Sauk City 2, Madison 2, Cooksville 2, Racine 5, Kenosha 2
Green-winged Teal	1	4	Poynette 4
Northern Pintail	6	6	Green Lake 1, Oshkosh 1, Woodland Dunes SW 1, Waukesha 1, Milwaukee 1, Hales Corners 1
Blue-winged Teal	2	2	Green Bay 1, Madison 1
Northern Shoveler	3	105	Green Bay 18, Green Lake 2, Madison 85
Gadwall	6	512	Green Lake 12, Poynette 4, Madison 470, Fort Atkinson 1, Waukesha 22, (Milwaukee), Hales Corners 3
American Wigeon	6	56	Caroline 1, (Green Lake), Plymouth 2, Madison 39, Fort Atkinson 3, (Milwaukee), Racine 2, Hales Corners 9
Canvasback	9	275	LaCrosse 45, Green Lake 2, (Oshkosh), Bridgeport 120, Madison 41, Cooksville 2, Oconomowoc 3, Milwaukee 4, Racine 16, Kenosha 42
Redhead	6	29	Ephraim 9, LaCrosse 1, Green Lake 10, Madison 6, Racine 1, Kenosha 2
Ring-necked Duck	3	11	Fremont 1, Green Lake 6, Madison 4
Greater Scaup	6	5690	Ephraim 1, Newburg 76, Milwaukee 5500, Hales Corners 79, Racine 7, Kenosha 27
Lesser Scaup	13	122	Trempealeau 1, Green Lake 8, Oshkosh 8, Woodland Dunes NE 5, Plymouth 2, Poynette 1, Madison 51, Hartford 2, Lake Geneva 27, Newburg 1, Milwaukee 12, Hales Corners 3, Racine 1, (Kenosha)
Harlequin Duck	1	3	Racine 3
Oldsquaw	8	1561	Ephraim 520, Sturgeon Bay 8, (Oshkosh), Woodland Dunes NE 60, Woodland Dunes SE 9, Newburg 11, Milwaukee 42, Hales Corners 189, (Racine), Kenosha 722
Black Scoter	1	3	Racine 3
Bufflehead	13	298	Ephraim 92, Sturgeon Bay 14, Oshkosh 1, Woodland Dunes SE 3, Sauk City 3, Madison 1, Oconomowoc 1, Lake Geneva 11, Newburg 9, Milwaukee 49, Hales Corners 18, Racine 85, Kenosha 11
Hooded Merganser	8	15	Durand 1, LaCrosse 1, Stevens Point 1, (Fond du Lac), Woodland Dunes SE 1, Madison 6, Newburg 2, Milwaukee 1, Hales Corners 2, (Racine)
Red-br. Merganser	11	229	Chippewa Falls 1, Ephraim 33, Oshkosh 2, Woodland Dunes NE 4, Woodland Dunes SE 7, Madison 14, Newburg 45, Milwaukee 28, Hales Corners 11, Racine 50, Kenosha 34
Ruddy Duck	9	20	Ephraim 1, Green Lake 5, (Oshkosh), Woodland Dunes NE 1, Woodland Dunes SE 6, Poynette 1, Sauk City 1, Madison 1, Milwaukee 3, Racine 1
Red-shouldered Hawk	6	7	Durand 1, Trempealeau 1, Black River Falls 1, (Green Lake), Beetown 1, Poynette 2, Sauk City 1
Northern Goshawk	13	18	Brule 1, Holcombe 1, Chippewa Falls 1, Medford 2, Spencer 2, Pensaukee 1, Green Bay 1, Nelson 1, LaCrosse 1, Black River Falls 1, Oshkosh 1, Mount Horeb 4, Madison 1, (Kenosha)
Golden Eagle	3	4	Grantsburg 1, Kickapoo Valley 2, Bridgeport 1
Merlin	3	3	Kettle Moraine 1, Madison 1, Waukesha 1
Gr. Prairie Chicken	3	72	Spencer 25, Dancy 6, Arpin 41
Sharp-tailed Grouse	3	7	Brule 2, Solon Springs 4, Oxbo 1
Wild Turkey	12	373	LaCrosse 3, Arcadia 5, Kickapoo Valley 22, Plymouth 8, Kettle Moraine 7, Bridgeport 24, Beetown 14, Richland Center 207, Poynette 6, Sauk City 32, Mount Horeb 40, Blanchardville 5
Northern Bobwhite	8	111	Trempealeau 10, Kickapoo Valley 6, Wautoma 1, Richland Center 68, Poynette 3, Mount Horeb 20, Madison 1, (Randolph), Kenosha 2
Virginia Rail	2	2	Poynette 1, Waukesha 1
Sandhill Crane	1	1	Stevens Point 1
Killdeer	7	10	LaCrosse 1, Wautoma 2, Oshkosh 1, Bridgeport 1, Beetown 2, Sauk City 1, Fort Atkinson 2, (Kenosha)
American Woodcock	1	1	Mount Horeb 1, (Kenosha)
Little Gull	1	2	Racine 2
Bonaparte's Gull	3	240	Milwaukee 76, Hales Corners 110, Racine 54, (Kenosha)
Thayer's Gull	1	1	Milwaukee 1
Glaucous Gull	1	1	Woodland Dunes SE 1

Table 8. (*Continued*)

Species	No. of Counts	No. of Birds	Count and Number Seen
Snowy Owl	6	6	Brule 1, Solon Springs 1, Ephraim 1, Pensaukee 1, (Green Bay), Owen 1, (Oshkosh), Plymouth 1
Long-eared Owl	6	7	LaCrosse 1, Appleton 1, Plymouth 1, Poynette 1, Sauk City 1, Beloit 2
Short-eared Owl	4	5	Gilman 1, Poynette 1, Madison 1, Newburg 2
N. Saw-whet Owl	2	2	Gilman 1, LaCrosse 1
Yellow-b. Sapsucker	6	9	Trempealeau 1, Black River Falls 3, Poynette 2, Sauk City 1, Madison 1, Kenosha 1
Black-b. Woodpecker	3	3	Brule 1, Oxbo 1, Waukesha 1
Gray Jay	7	55	Brule 5, Solon Springs 3, Fifield 13, Oxbo 21, Medford 2, Phelps 4, Three Lakes 7
Boreal Chickadee	2	3	Brule 1, Three Lakes 2
Tufted Titmouse	13	84	New Richmond 1, Chippewa Falls 14, (Shawano), Black River Falls 4, Kickapoo Valley 2, Bridgeport 14, Beetown 2, Richland Center 12, Poynette 7, Sauk City 10, Mount Horeb 10, Madison 4, Beloit 2, Oconomowoc 2
Winter Wren	4	6	Appleton 1, Woodland Dunes NW 1, Woodland Dunes NE 1, Madison 3
Eastern Bluebird	2	6	Plymouth 1, Mount Horeb 5
Mountain Bluebird	1	1	Hales Corners 1
Hermit Thrush	2	3	Madison 1, Milwaukee 2
Varied Thrush	3	3	Medford 1, Shawano 1, Woodland Dunes NE 1, (Madison)
Gray Catbird	2	2	Newburg 1, Milwaukee 1
Brown Thrasher	9	14	Ephraim 1, Sturgeon Bay 1, Green Bay 2, Baraboo 1, Mount Horeb 3, Madison 3, Waukesha 1, Newburg 1, Milwaukee 1
Bohemian Waxwing	10	638	Bayfield 9, Ashland 406, Luck 1, Chippewa Falls 57, Gilman 7, Medford 1, Merrill 1, Wausau 27, (Caroline), Ephraim 79, Stevens Point 50, (Stockbridge)
Yellow-rumped Warbler	2	2	New Richmond 1, Madison 1
Common Yellowthroat	2	2	Ashland 1, Madison 1
Rufous-sided Towhee	4	7	(Peshtigo), LaCrosse 1, Woodland Dunes SW 4, Poynette 1, (Madison), Hales Corners 1
Field Sparrow	5	10	Bridgeport 2, Poynette 4, Sauk City 1, Madison 1, Cooksville 2
Vesper Sparrow	1	1	Bridgeport 1
Lark Sparrow	1	1	Racine 1
Fox Sparrow	5	12	Fifield 1, Mount Horeb 1, Madison 4, Milwaukee 5, Kenosha 1
Lincoln's Sparrow	2	2	Madison 1, Racine 1
White-crowned Sparrow	2	2	Beloit 1, Kenosha 1
Eastern Meadowlark	1	1	Sauk City 1
meadowlark species	13	34	(Ephraim), Sturgeon Bay 2, Durand 1, Kickapoo Valley 1, Fremont 1, Green Lake 3, Shiocton 1, Woodland Dunes SW 2, Woodland Dunes SE 15, Beetown 2, Richland Center 2, Poynette 1, Beloit 1, Kenosha 2
Yellow-h. Blackbird	1	1	Horicon 1
Rusty Blackbird	7	21	Medford 2, Spencer 1, Shawano 1, Owen 1, Amherst 1, Sauk City 4, Merrill 11
Brewer's Blackbird	2	11	Poynette 3, Fort Atkinson 8
House Finch	10	36	Shawano 1, Green Bay 1, (Stevens Point), Wautoma 2, Oshkosh 4, Fond du Lac 1, Sauk City 1, Madison 6, Cooksville 1, Milwaukee 10, Racine 9
Accipiter species	1	1	Kickapoo Valley 1
Teal species	1	2	Waukesha 2

at Hales Corners, and House Finches on 10 counts were only the second Christmas Count records for these species. Other rarities were 2 Little Gulls at Racine and Lincoln's Sparrows at Madison and Racine (fourth year on counts), 3 Black Scoters at Racine (fifth year), 3 Harlequin Ducks at Racine and Double-crested Cormorants on four counts (seventh year), an American Woodcock at Mount Horeb and a Yellow-headed Blackbird at Horicon (eighth year), and Common Yellowthroats at Ashland and Madison (tenth year). Seen within three days of a count, but not on the day of the count, were a Least Bittern at Madison and a Purple Sandpiper at Racine. Other rare or uncommon species are reported in Table 8. One Merlin and a Rose-breasted Grosbeak were not included because documentation could not be obtained. A summary of the occurrence of the more common species follows.

Species Accounts

Waterfowl.—Almost all species were found in above normal numbers be-

cause of the abundance of open water. Record numbers were recorded for Common Loons, Double-crested Cormorants, Tundra Swans, Mute Swans, American Wigeons, Harlequin Ducks, and Common Mergansers. The 1032 Tundra Swans were about seven times the previous high total. American Black Duck numbers continued to improve, but were still well below numbers reported 20 years ago.

Hawks and Eagles.—Numbers of common hawks and the Bald Eagle were about 30% above the 10-year average, except for the Northern Harrier and Northern Goshawk, which were less common. Most species were found much farther north than usual. Numbers of Red-tailed Hawks were the highest ever recorded on Wisconsin Christmas Bird Counts.

Grouse, Pheasants, etc.—Populations of Ring-necked Pheasants continued well below normal, in spite of the snow cover, which usually causes higher numbers to be found. Numbers of Gray Partridges and Ruffed Grouse were also somewhat below normal, the latter probably because deep snow makes them more difficult to flush. Numbers of Northern Bobwhites continued to improve, and Wild Turkeys have become common in many areas, with a record 373 found on 12 counts.

Gulls and Other Waterbirds.—Although Herring Gull numbers equaled the 10-year average, the mild weather caused record numbers of Ring-billed Gulls to linger in Wisconsin. Lingering Bonaparte's Gulls were also numerous on three southern Lake Michigan counts. Belted Kingfishers remained in greater numbers than usual, and the 46 Common Snipes were a new Christmas Count record.

Owls.—It was an excellent year for the common owls, although the large numbers of Screech, Great Horned, and Barred Owls probably is a reflection of more time being spent listening for owls before dawn and increased use of tape recorders to attract them. Numbers of Snowy, Long-eared, and Short-eared Owls were distinctly below normal.

Woodpeckers.—Red-headed Woodpecker numbers were 78% below the 10-year average because of a failure of the acorn crop. Numbers of Common Flickers were down 38%, but all other common woodpeckers were more abundant than usual.

Jays, Crows, Chickadees, Nuthatches, etc.—Numbers of Common Ravens and American Crows were well below average. Red-breasted Nuthatches, while common in the north, were down in numbers statewide, suggesting that most did not migrate. Blue Jays, Black-capped Chickadees, White-breasted Nuthatches, Brown Creepers, and Golden-crowned Kinglets were all more numerous than usual, and Tufted Titmouse numbers were the highest they have been since 1982.

Thrushes, Shrikes, and Waxwings.—Numbers of Northern Shrikes were somewhat below normal, and Cedar Waxwings were very scarce in most areas. American Robins were widespread and more numerous than usual. Bohemian Waxwings invaded many areas of northern Wisconsin, but they were not seen south of Stevens Point. Record numbers of lingering Brown Thrashers were seen.

Sparrows.—It was a fantastic year for sparrows, probably because many delayed their migration due to the warm weather. Record numbers of Song and Swamp Sparrows were recorded, with numbers of the former being twice those of the previous record. Dark-eyed Juncos were also exceptionally numerous, appearing in record numbers. Tree Sparrows were very common, and species of sparrows infrequently seen on Christmas Counts were also more prevalent than in most years. Only the White-throated Sparrow was less abundant than usual.

Open Country Birds.—The snow forced these species to roadsides and manure spreads where they could be easily counted, and the mild weather caused migratory species to linger. This resulted in record numbers of Horned Larks and Snow Buntings, and above normal numbers of Lapland Longspurs and meadowlarks.

Blackbirds.—Numbers of all species were well below normal, perhaps because of the early corn harvest and because snow covered spilled feed.

Finches.—American Goldfinches and Pine Siskins both occurred in record numbers, with the latter being especially common in the north where there was an excellent crop of cones on hemlocks. Red Crossbill numbers were also above normal, but all other winter finches occurred in below normal numbers. Pine Grosbeaks, Evening Grosbeaks, Common Redpolls, and White-winged Crossbills were fairly common in the northern half of the state, but did not invade the south. House Finch populations showed signs of exploding, with 36 being found on ten counts scattered throughout the eastern half of the state. Considering that this species had not been found on a Christmas Count before last year, it seems likely that they may soon become one of our more common birds.

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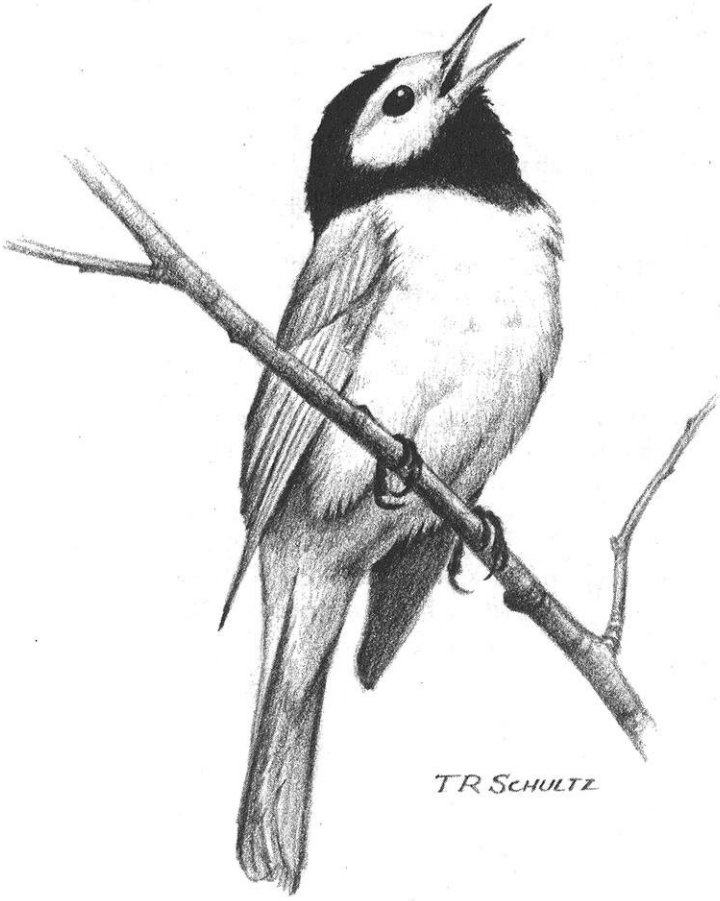

Hooded Warbler *by Thomas R. Schultz*

When is a Bird's Habitat Not Habitat?

by Stanley A. Temple

Birds are very particular about the habitats they choose to live in, and experienced birders are well aware of the general habitat affinities of local species. Reference to any of the plethora of field guides to birds also provides a more or less complete description of where each bird is likely to be found. According to Peterson (1980), for example, the Hooded Warbler's habitat is "woodland undergrowth, laurels, wooded swamps;" Bull and Farrand (1977) describe it as "mature, moist forests with luxuriant undergrowth," and Robbins et al. (1983) describe it as "deciduous woods with abundant undergrowth." In all cases the emphasis is on the condition of the vegetation, and a trusting bird watcher might easily conclude that any woods with the right type of vegetation would provide suitable habitat for Hooded Warblers. The birder who went searching for a Hooded Warbler in southern Wisconsin would not, however, find one quickly if the only clue to where to look was vegetation. For many birds, like the Hooded Warbler, there is another important habitat characteristic, in addition to vegetation, that determines whether or not a species will occur in an area. This habitat characteristic is the size of the habitat patch. Research into why birds should respond to size of a habitat patch as well as its vegetation has been popular over the past decade, and Wisconsin has been the site of much of this research.

Fragmentation of Bird Habitats

Perhaps the most pervasive type of habitat alteration taking place today is habitat fragmentation: the steady transformation of once large and continuous tracts of natural habitat into smaller and more isolated patches or fragments surrounded by disturbed areas (Temple and Wilcox 1986). Figure 1 shows how this process has affected the forest cover in one southern Wisconsin township (Curtis 1959). As is readily apparent, an extensive unbroken tract of forest has been reduced to a small number of tiny, scattered woodlots. The same trend applies, to some extent, to most natural habitats in Wisconsin. Even the remaining extensively forested tracts of northern Wisconsin are being fragmented by

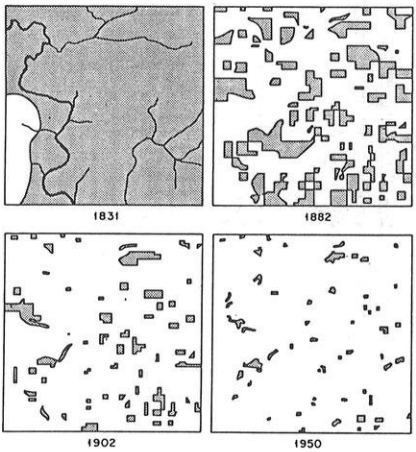

Figure 1. Fragmentation of the forest cover in a southern Wisconsin township since the time of settlement (from Curtis 1959).

continued road building and logging. Similarly, the once extensive prairies of Wisconsin are now reduced to small, isolated fragments.

From the point of view of bird habitat, the vegetation in small forest fragments is not significantly different from the vegetation in large forest tracts. A Hooded Warbler, for example, could find a territory containing the right combination of mature woods and thick undergrowth in a 20-acre woodlot as well as in a 20,000-acre forest. In a recent study, Ambuel and Temple (1983) verified that the characteristics of the vegetation that are important to forest birds in southern Wisconsin were not influenced by the size of the woods, over a range of sizes from 7–6000 acres. Even small woodlots appear to offer suitable habitat for forest birds, at least with respect to vegetation. Nonetheless, birds don't seem to see things quite this way. There is abundant evidence that many forest birds are influenced by the size of a woods, as well as by its vegetation.

Bird Distributions in Habitat Fragments

Several studies of Wisconsin forest birds have confirmed that the size of a woods has a dramatic influence on the types of birds that will be found there (Bond 1957, Howe and Jones 1977, Tilghman 1977, Ambuel and Temple 1983). Some species occur in woods of all sizes. As long as the woods are large enough to accommodate the normal home range and territory requirements of the species, these birds are likely to settle in and occupy the available habitat. On the other hand, there is a group of birds that normally do not occur in a woods unless it is quite large, many times the area needed for a pair's home range and territory. These birds are said to be "area sensitive." They tend to reject, as habitat, forests below a fairly large minimum size. Ambuel and Temple (1983) and Temple (1986) describe the distribution of forest songbirds among southern Wisconsin woodlots; they found some birds are area sensitive, while others are not. The Red-headed Woodpecker, for example, is not area sensitive; it was commonly found as a breeder in woods, regardless of size. In contrast, the Pileated Woodpecker was never found breeding in woods of less than 250 acres. The Hairy Woodpecker was somewhat intermediate; it was found in only about half of the smaller woods, but it was present in every woods of 250 acres or more.

One result of this area-sensitivity of some forest songbirds is that small woods do not have as many breeding songbird species as larger woods. For southern Wisconsin, the trend for larger woods to have more species is

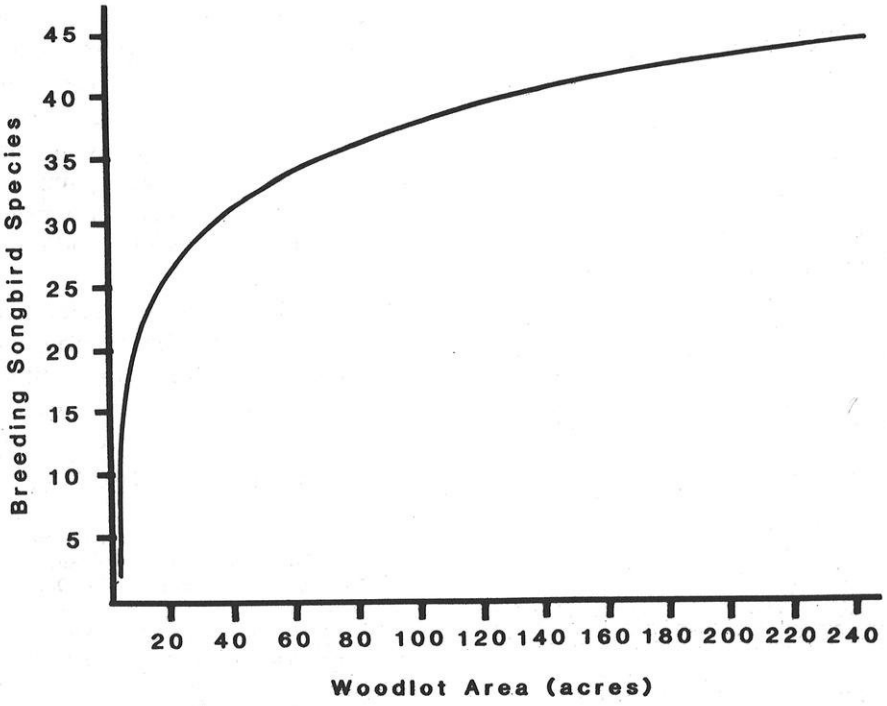

Figure 2. The average number of breeding songbird species in southern Wisconsin woodlots of various sizes.

shown in Figure 2 (adapted from Ambuel and Temple 1983). Basically, there is almost a doubling of the number of breeding songbird species for every ten-fold increase in woodlot area.

Implications for Birdwatching

It should be clear that the area-sensitivity of some birds and the widespread fragmentation of natural habitats result in the need to amend the habitat descriptions found in field guides. In addition to describing the vegetation characteristics of the species' preferred habitat, some indication of the species' habitat-size requirement is also in order. The Hooded Warbler's habitat in southern Wisconsin might, therefore, be best described as mature deciduous woods over 240 acres in size that have dense undergrowth. With this description, birdwatchers would not have to waste time searching in small woodlots and could zero in on the relatively few large forests in southern Wisconsin where the chances of finding a Hooded Warbler are best. Table 1 lists the area-sensitive songbirds of southern Wisconsin and gives the approximate minimum size of a woodlot in which there is at least a 50% chance of finding each bird breeding.

Table 1. Area-sensitive songbirds of southern Wisconsin forests and their approximate minimum size requirements for 50% occupancy.

Species	Minimum size of woodlot that has at least a 50% chance of supporting a breeding population
Hairy Woodpecker	40 acres
Pileated Woodpecker	240 acres
Acadian Flycatcher	240 acres
Least Flycatcher	160 acres
Tufted Titmouse	80 acres
Blue-gray Gnatcatcher	80 acres
Veery	60 acres
Wood Thrush	20 acres
Yellow-throated Vireo	40 acres
Chestnut-sided Warbler	160 acres
Cerulean Warbler	200 acres
American Redstart	240 acres
Ovenbird	80 acres
Mourning Warbler	160 acres
Hooded Warbler	240 acres
Scarlet Tanager	40 acres

Implications for Conservation

Area-sensitive birds require relatively large tracts of habitat, and their occurrence in an area depends on whether or not their habitat exists in large enough patches. In southern Wisconsin the remaining deciduous forest habitat is greatly fragmented. The average size of a woodlot in southern Wisconsin is about 47 acres, well below the minimum size required for most area-sensitive forest birds. The preservation of remaining large forest tracts—especially areas like those in the Baraboo Hills being preserved by The Nature Conservancy and the Department of Natural Resources (Mossman and Lange 1982)—is an important priority. Large tracts of natural habitat are an endangered resource in southern Wisconsin, and the birds that depend on these large parcels are declining (Ambuel and Temple 1982, Temple and Cary 1988). In the early 1900's, for example, Schorger (1931) noted that the American Redstart, an area-sensitive species, was "second only to Yellow Warblers in point of numbers" and that "every woodland contains at least one or more nesting pairs." Today, American Redstarts are rare in southern Wisconsin and found only in the region's larger woods.

A bird's habitat is not habitat when it occurs in patches that are too small. Area-sensitive birds require habitat of a particular size as well as type.

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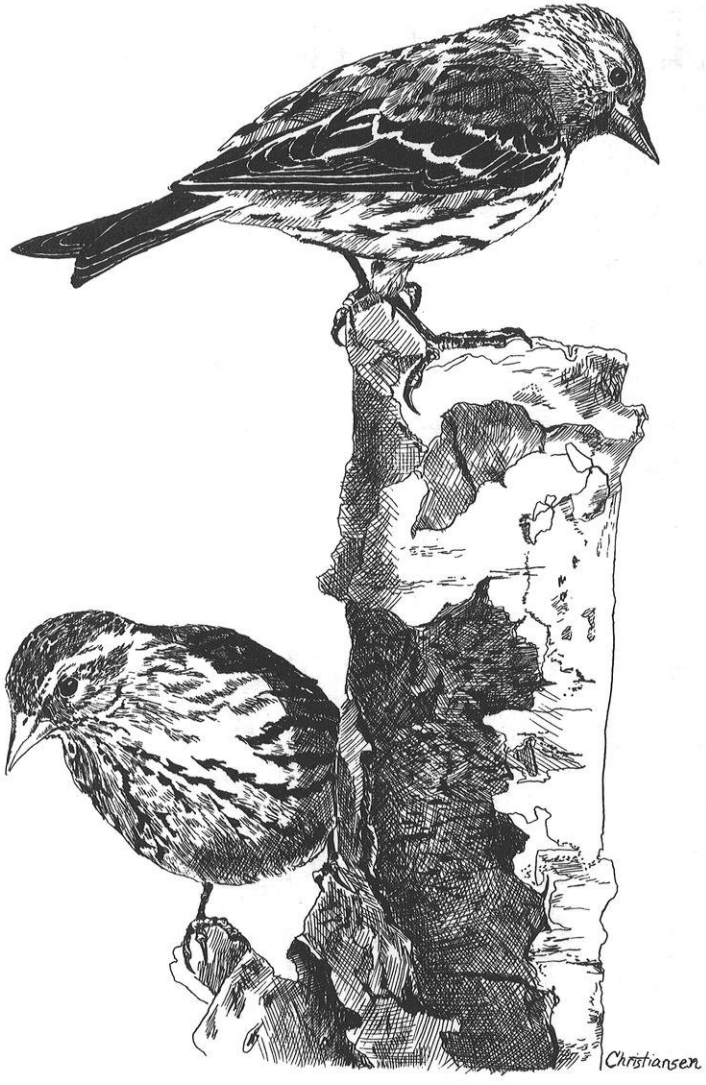

Pine Siskins *by Karen Birgit Christiansen*

Wisconsin's Bird Habitats: Introducing a New Series

by Michael J. Mossman and Paul E. Matthiae

This is the first in a series of articles on the birds of various environments or "habitats" in Wisconsin, with an emphasis on breeding species. This information should be useful to birdwatchers, who are often interested in knowing what species they can expect to find in a particular habitat. Knowledge of the habitat requirements of birds is equally important from the standpoint of conservation, for it can be a crucial factor in guiding land-use decisions.

Wisconsin's list of breeding birds currently comprises some 237 species, the highest tally of any state east of the Mississippi River (DeSante and Pyle 1986). In the North American Breeding Bird Survey (Robbins et al. 1986), Wisconsin ranks among those states and provinces with the highest number of bird species recorded per roadside route. This rich avifauna results from a number of factors, probably the most important of which is the state's location at the juncture of 3 major North American ecosystems or biomes: eastern deciduous forest, mixed hardwood-coniferous forest, and prairie. In addition to the influences of these biomes, a myriad of other factors such as topography, soil type, wetland features, and various human modifications of the landscape combine to produce a unique and interesting variety of bird habitats. The major natural-habitat divisions of Wisconsin are mapped and described in Figure 1.

Although this series will describe the birds of both natural and altered habitats, it focuses on relatively undisturbed natural areas. Natural areas represent the scattered remnants of our presettlement past; they include the native communities of plants and animals that have escaped human disturbance and still function as parts of relatively natural ecosystems. Although many of Wisconsin's breeding bird species have adapted to the dramatic changes that have occurred in the landscape since european settlement, some species depend largely on natural areas in which to nest and raise their young, for example the Worm-eating, Cerulean, Kentucky, and Hooded Warblers (southern hardwood forests), Yellow-bellied Flycatcher (lowland coniferous forest), LeConte's Sparrow (sedge meadow),

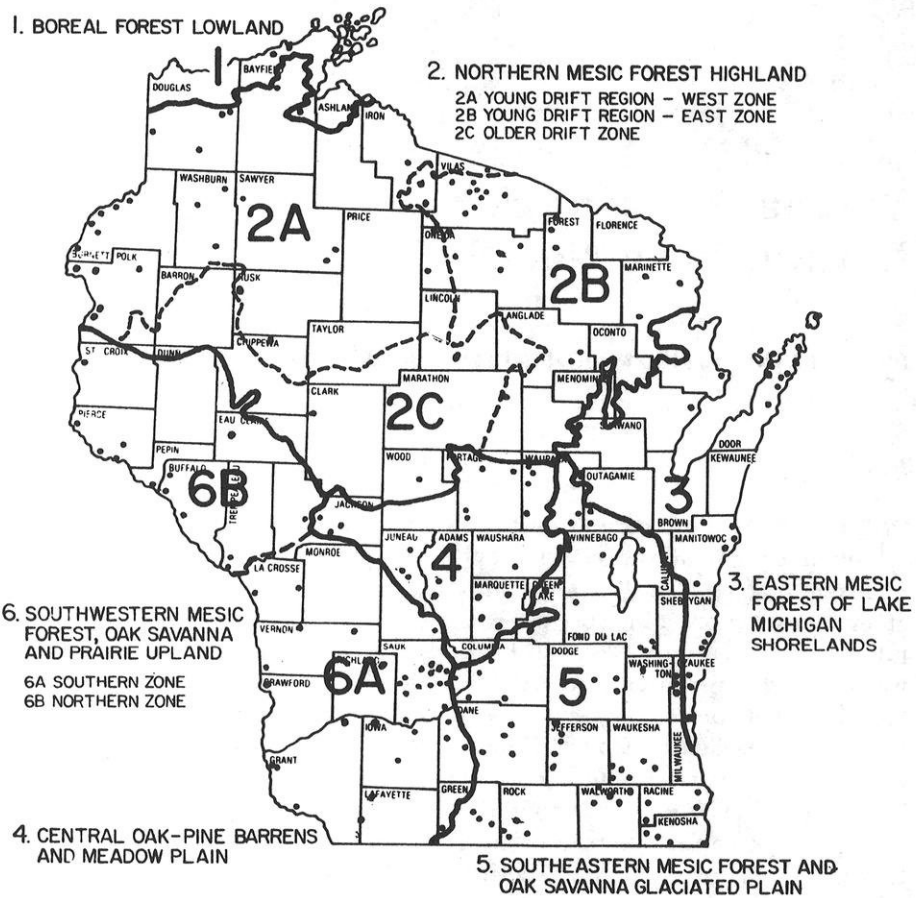

Figure 1. Natural divisions of Wisconsin with the locations of State Natural Areas.

and Red-necked Grebe ("prairie" bulrush marsh). Continued threats to natural areas dictate that we identify those species currently dependent on natural conditions, and that we identify critical habitat features that might be restored to support these sensitive species. Natural areas not only help to protect our full heritage of plant and animal species in their natural state, but they are also important sites for restoration work.

One important aspect of this series is that it begins to describe the breeding bird components of Wisconsin's native plant and animal communities, which have heretofore been defined almost exclusively on the basis of vegetational features and floral lists. Because birds depend on specific features of their breeding habitats, such as particular vegetational structures and prey populations, they can serve as indicators of habitat quality—in particular, the quality of sites being considered for protection as natural areas. With baseline information on what constitutes the avifauna of each natu-

ral community, we can better ensure the selection and protection of those areas with the most "intact" communities. This is done by evaluating bird-survey data from candidate sites in the same way that botanical information has traditionally been compared with the baseline data presented in Curtis' (1959) *The Vegetation of Wisconsin.*

Each of the ensuing articles in this series will describe the vegetation, distribution, and breeding birds of a different community type or of a group of closely related types, and discuss the habitat features that appear to be important for certain bird species. Wintering birds will be discussed when appropriate, and special articles will concentrate on important migration areas. Authors will list specific examples of the community type and describe the best sites in detail, including directions for visiting.

Wisconsin's Natural Biotic Communities

It is through visits to natural areas across the state that you will be exposed to Wisconsin's bird habitats. Twelve terrestrial communities and groups of communities will be described, together with several aquatic and special interest areas. These communities are largely based upon John T. Curtis' descriptions of Wisconsin's plant communities as defined in his book, *The Vegetation of Wisconsin* (Table 1).

Prairies.—Once occupying two million acres but now consisting of little more than 2,000 acres, the prairies are home for grassland birds. This bird community, though declining because of the loss of pasture lands and prairie and frequent mowing of hayfields, can be observed in a number of prairie remnants that are still large enough to support a typical bird community. Dry and dry-mesic prairies will be considered together, as will wet-mesic and wet prairies, and the closely related fen community. Mesic (moderately moist and well drained) prairies were once the most common grassland in Wisconsin. Today, the remnants are too small and scattered to support grassland bird populations.

Southern dry, dry-mesic and mesic forests.—Dry and dry-mesic forests, dominated by white, bur, black and red oaks, will be considered together, while the southern mesic forest (Figure 2), dominated by sugar maple, basswood, and sometimes beech, will be treated separately. Once regionalized in large patches of tens of thousands to a million acres in size and distributed from southeastern to west central Wisconsin, these communities persist today mostly as small isolated woodlots. Only a few tracts of public and private forest reach thousands of acres in size.

Southern floodplain forests.—These forests, consisting of the southern wet-mesic and wet forest communities, contains a rich avifauna where tracts large enough to maintain sufficient forest interior persists. Common trees are silver maple, cottonwood, green ash, and swamp white oak. Never a very large component of presettlement landscapes, these communities tend to be linear in configuration, following major water courses. Because of logging, grazing, drainage, and damming, the floodplain forests have been dramatically reduced in size and quality.

Table 1. Native plant communities of Wisconsin (from Curtis 1959).

Community	Approximate Original Acreage	Original % of land surface
Southern Dry-Forest	971,000	2.8
Southern Dry-Mesic Forest	416,000	1.2
Southern Mesic Forest	3,432,500	9.8
Southern Wet-Mesic Forest	336,000	1.0
Southern Wet Forest	84,000	0.2
Northern Dry Forest	340,000	1.0
Northern Dry-Mesic Forest	1,930,000	5.5
Northern Mesic Forest	11,750,000	33.6
Northern Wet-Mesic Forest	560,000	1.6
Northern Wet Forest	1,680,000	4.8
Boreal Forest	672,500	1.9
Dry Prairie	105,000	0.3
Dry-Mesic Prairie	630,500	1.8
Mesic Prairie	840,500	2.4
Wet-Mesic Prairie	420,000	1.1
Wet Prairie	105,000	0.3
Sand Barrens	—	—
Bracken Grassland	—	—
Oak Opening	5,500,000	15.7
Oak Barrens	1,800,000	5.1
Pine Barrens	2,340,000	6.7
Cedar Glade	<75,000	<0.1
Shrub-Carr	<75,000	<0.1
Alder Thicket	<75,000	<0.1
Fen	<75,000	<0.1
Southern Sedge Meadow	1,000,000	2.9
Northern Sedge Meadow	115,000	0.3
Open Bog	110,000	0.3
Beach	<75,000	<0.1
Lake Dune	<75,000	<0.1
Exposed Cliff	<75,000	<0.1
Shaded Cliff	<75,000	<0.1
Emergent Aquatics	<75,000	<0.1
Submerged Aquatics	<75,000	<0.1

Only a few sites retain their presettlement condition and structure.

Oak and pine barrens.—Despite commonly held beliefs, the northern two-thirds of Wisconsin, at the time of settlement, was not a vast unbroken forest of hardwoods, hemlock, and giant white pine. Rather, it was broken into a number of plant communities. Oak and pine barrens were open savanna-like areas with scattered trees and shrubs. Once occupying over 4 million acres, these communities were maintained largely by the occurrence of natural wild fires. Since settlement most of these barrens that escaped agricultural development have been lost to forest encroachment, a result of fire prevention and control. Today, only a few examples remain, largely in areas managed for Sharp-tailed Grouse or on sites maintained as State Natural Areas. A related community that will be considered together with barrens is oak opening. Although it dominated much of the southern Wisconsin landscape at the time of settlement, only a few small tracts have survived fire control and the plow.

Figure 2. A southern mesic forest, Fond du Lac County.

Northern dry and dry-mesic forest.—These forests, dominated by jack, red, and white pine, and Hill's and red oaks, occupied over 2 million acres of the northern forest region at settlement (Figure 3). Today, remnants are interspersed within the much larger northern mesic forest community, separated by changes in soil type. Because of the lack of natural fire and a combination of historical and modern forest management practices, these communities have diminished in both size and quality of composition. We will describe several remnants that retain presettlement character and their associated avifauna.

Northern mesic forest.—These forests, dominated by sugar maple, yellow birch, basswood, and in some cases hemlock and beech, will be discussed separately. This community, which today ranges across the northern third of Wisconsin in a nearly continuous forest of 9 million acres, is proportionately among the most disturbed. Historic and modern forestry, agriculture, urbanization, and rural recreational settlement have greatly altered

Figure 3. A northern dry-mesic forest, Oneida County.

the structure and age of this community. Today, lacking old growth structure and averaging about 85 years of age, this community has few remnants in which to study the dynamics of the forest-interior birds.

Northern wet-mesic and wet forests.—These communities together occupied over a million acres of the northern forest region at settlement. The wet-mesic type consisted of white cedar, balsam fir, hemlock, yellow birch, and black ash. The wet forest was dominated by black spruce, tamarack, white cedar, and balsam fir. While a number of these communities in the southern part of their Wisconsin range have been drained, most of the northern sites remain intact. Logging and high deer

populations have caused changes in the structure and species composition of some of these sites.

Northern and southern sedge meadows.—These communities are dominated by various sedge species but also typically include a variety of other wet-ground forbs and grasses (Figure 4). Although northern and especially southern meadows have been reduced and degraded by drainage, artificial flooding, grazing, and conversion to other land uses, some large tracts of both types have survived intact. Our tour of bird habitats will also take us to other wetland communities dominated by dense shrubs: the southern shrub-carr composed mainly of willows and dogwoods, and the more northern alder thicket.

Boreal forests.—These forests were never well represented in Wisconsin. In the past, as now, they clung to the Lake Superior and northern Lake Michigan shoreline areas. Stands of fir, spruce, cedar, white pine, and white birch were extensively logged. Today, this community is found in only a few locations and, therefore, provides little of the habitat associated with the extensive boreal forest of northern Minnesota, Michigan, and Canada. Our remnants will, however, prove to be unique bird haunts.

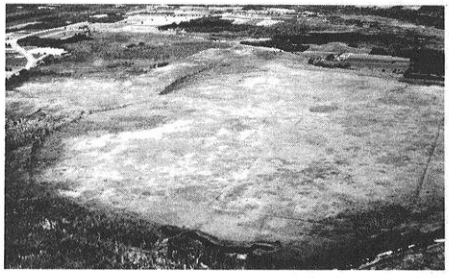

Figure 4. An extensive sedge meadow, Marquette County.

Other articles in this series will address aquatic communities, waterfowl and crane staging areas, and other minor terrestrial communities, such as the unique northern relics of the driftless area of southwestern Wisconsin.

The Wisconsin Natural Areas Program

We owe much to Wisconsin's early conservationists, who in 1951 recognized the problem of dwindling natural areas and established Wisconsin's Scientific Areas System, the first state natural areas preservation program in the United States. In recent years this program has been incorporated into the Wisconsin Department of Natural Resources' (WDNR) Bureau of Endangered Resources (BER), and it has been renamed the Wisconsin Natural Areas Program. It is guided by an advisory board, the Natural Areas Preservation Council.

The mission of the program is to locate and preserve a system of State Natural Areas that will protect examples of all types of biotic communities and other significant natural features native to the state. The areas are used for education, research, and most importantly to secure long-term protection of the state's biotic diversity for the benefit of future generations. They are not intended for intensive recreational uses, like picnicking or camping. These precious areas are often the last refuges for rare and endangered plants and animals. Unique and significant geological and archaeological features are frequently included within their

boundaries. Because these areas still function as relatively natural ecosystems, they provide a standard by which human modifications of the landscape can be evaluated.

High-quality natural areas are identified and evaluated by BER staff and the Council. Preservation is accomplished by designating tracts already in public ownership through cooperative management agreements or by acquiring privately owned tracts, often in close cooperation with The Nature Conservancy. Once protected, many sites are actively managed; for example, prairies must be burned to prevent encroachment by trees and shrubs. These formidable tasks succeed only through substantial assistance from a number of individuals, public agencies, and private organizations, especially The Nature Conservancy. Today, there are 216 official State Natural Areas in this system (Figure 1), including the Wisconsin Society for Ornithology's (WSO) Honey Creek site.

Sources of Data

Information for "Wisconsin Birding: The Habitat Way" comes mainly from data collected in the WDNR's Natural Areas Breeding Bird Survey program, which was initiated jointly with the WSO in 1971. The survey provides data on the abundance of nearly all Wisconsin breeding bird species at specific sites of interest, especially State Natural Areas and other potentially valuable natural areas. The results of these surveys can be used for several purposes:

1. To provide site-specific inventory data useful in evaluating the impacts of proposed developments or management activities.

2. To correlate bird species with habitat types and help determine habitat features necessary for maintaining breeding populations of each species.

3. To better determine the status and specific locations of breeding populations of bird species, especially those that are endangered, threatened, or of special concern.

4. To evaluate the ecological integrity of the plant and animal communities on specific natural areas and, thus, help establish preservation and management priorities.

5. To monitor breeding bird populations over the long term on natural areas that experience little habitat change, and to determine the effects on bird populations of natural vegetational succession, natural catastrophes, and management options.

The field surveys of this ongoing program are carried out by volunteers and WDNR cooperators. Until 1978, cooperators used a variety of survey methods, but since that time nearly all terrestrial surveys have used the "walk-5/stand-5" method: recording all birds seen or heard, while alternating 5-minute periods of walking and standing along a prescribed route. This simple procedure has been used successfully in other studies of Wisconsin bird communities (Bond 1957, Beals 1960, Mossman and Lange 1982). It allows a simple, quantitative comparison among bird communities and of the relative abundance of particular bird species among different sites. Surveys of aquatic sites have most often been done by canoe. Whenever possible, surveys are run between 1 June and 4 July, and during the period beginning ½ hour before sunrise and ending 4 hours after sunrise. Bird numbers are reported on standard

data sheets, along with wind and sky codes, temperature, and time at the beginning and end of the survey. Cooperators are encouraged to record bird data by habitat when a particular survey area comprises more than one community type. Cooperators also include a map and description of the survey route, and comments on unusual findings, bird-habitat associations, evidence of breeding, and site conditions, such as evidence of recent or past disturbance. Permanent routes have been established for many of the State Natural Areas. Detailed survey instructions are available from BER.

The survey program has been coordinated by Evelyn Batchelor (1971–78), Bill Tans (1978), Mossman (1979–86), and Randy Hoffman (1987–88). Coordinators have completed several summary reports, (Mossman 1983, 1984, Hoffman 1988), and a major analysis and program evaluation (Mossman 1980).

Since 1971, over 100 cooperators have conducted counts on a total of 193 (90%) of Wisconsin's 216 State Natural Areas (Figure 5), and on over 300 other natural and managed sites. Many areas have been surveyed more than once, and 4 have been surveyed every year, 1971–87. Data are maintained in manual files, and are computer-indexed by site name, county, legal description, date, observer, and habitat type.

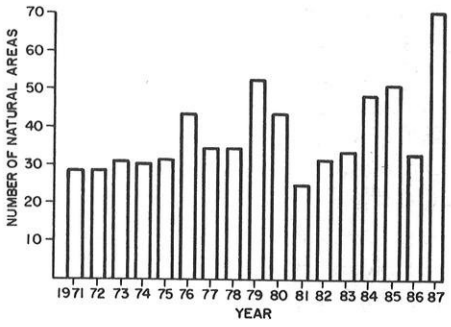

Figure 5. Number of State Natural Areas surveyed for breeding birds.

Survey results have been used frequently in BER's impact assessment procedures and master-plan evaluations, as well as in helping set preservation priorities for unprotected sites. Hundreds of records of critical species have been contributed to BER's Natural Heritage and Endangered Species programs. Information on population trends has been analyzed only in a preliminary manner, for example in showing an increase in Blue-winged Warblers and a decrease in Golden-wings in the Baraboo Hills (Mossman and Lange 1982). Mossman (1982) and Mossman and Lange (1982) used portions of the survey data to determine habitat distributions of Wisconsin bird species, and to analyze the structure and relationships of breeding bird communities. During 1983, the program emphasized data collection from unprotected sites, and in 1987 it began to focus more on long-term monitoring, as part of a larger plan to monitor all major biota on State Natural Areas (Hoffman 1987).

In addition to the Natural Areas Breeding Bird Survey data, "Wisconsin Birding: The Habitat Way" will incorporate information from other published studies on Wisconsin birds and from other sources, such as WDNR's grassland bird study and colonial-bird nesting studies.

Summary

Natural areas provide habitat for a rich variety of birds, including many

rare and unusual species. Furthermore, they are important in determining bird habitat needs and in providing a standard against which to evaluate human modifications of the landscape. The WDNR, The Nature Conservancy, and other agencies currently protect 216 State Natural Areas and many other relatively undisturbed sites representing all of Wisconsin' natural communities. Breeding-bird survey data from these and other managed sites will be used in this series to describe the communities and habitat associations of Wisconsin's birds, with an emphasis on breeding species. Besides providing information useful for birdwatching, we hope this ecological perspective will help foster a greater awareness of the importance of bird habitats, increase knowledge of specific habitat needs, and further the appreciation of natural and wisely managed lands in Wisconsin.

Acknowledgments

The Natural Areas program and Breeding Bird Survey rely on the energy, dedication, and expertise of volunteer and agency cooperators too numerous to list. We extend a sincere thanks to them all and hope that this series will help demonstrate the value of their efforts. Special appreciation is due the WSO, Evelyn Batchelor for helping initiate the survey program, and Stanley Temple for encouraging the publication of this series.

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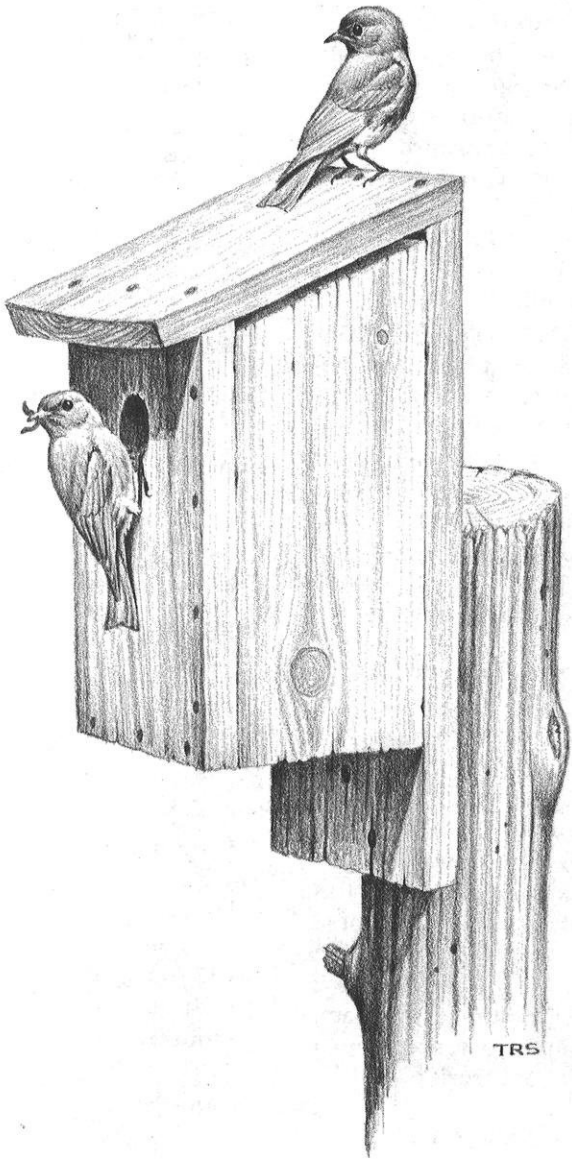

Eastern Bluebirds *by Thomas R. Schultz*

Improving Backyard Habitat for Birds

by Scott R. Craven

There are few antidotes for "cabin fever" that work as well as the arrival of spring seed catalogues during January and February. With them comes the vision of warm temperatures, colorful flowers, bird song, and a harvest of garden produce. Planning the upcoming season's horticultural activities can really pick up the spirits during our dreary late winter months. Why not consider birds and other wildlife in your plans for both annual gardens and long-term landscape plantings?

Actually, gardening for wildlife, especially birds, has become a very popular activity. According to a 1985 survey conducted by the U.S. Fish and Wildlife Service, 9.7 million Americans, age 16 and older, maintain plantings for wildlife, and 11.6 million maintain "natural areas." An amazing 82.6 million Americans feed wild birds, and 23.7 million feed other wildlife as well. Much of the current interest can be traced to an article in the April-May 1973 issue of *National Wildlife* magazine entitled "Invite Wildlife to Your Backyard." The story followed the 30–40 year transition of a sod-covered suburban yard into a tree and shrub dominated wildlife haven of exceptional beauty.

To attract wildlife you need to understand the basic requirements for food, water, cover, and space of the particular species that interests you. By meeting these needs through plantings, provision of food and water, or placement of nesting structures, it is quite possible to attract many species to your yard. Alternatively, you might choose to maintain or create a particular habitat type—an oak woods or a small prairie, for example—and, thus, attract species associated with that habitat. Providing artificial food, erecting nest structures, and other techniques will be treated in subsequent columns. For now, we will concentrate on landscaping and gardening for wildlife.

A variety of situations could lead to an opportunity for substantial habitat improvement—a new home lot with no landscaping, an established yard with space no longer needed as a play area for the children, or perhaps just a basic desire to do more for songbirds. No matter what your situation might be, the basic approach is the same.

Begin with a plan! This is absolutely essential! Draw a basic map of your yard or property on a piece of graph paper. Make sure it is to scale and includes property lines, buildings, and other permanent features. Think about your needs for privacy, a garden plot, a play area, a patio, or other features. Then begin to develop planting ideas for the areas that are left or where habitat plantings can serve a dual role such as a row of conifers for both privacy and nesting cover (e.g., Figure 1). It is quite feasible to integrate many different goals in a single plan.

An important component of the plan is the selection of plant materials. Such decisions are based on growth form, mature size, horticultural characteristics (soil, moisture, light, etc.), value to wildlife (food production, cover value, etc.), and side benefits such as fall foliage color, spring flowers, or edible fruits. Poor choices or improper landscape design will only result in more work later on when you find out trees were planted too close together or a large conifer is blocking your neighbor's solar water-heater panels! Basic landscape design is also important. Foundation plantings around the house, low shrubs as a transition from lawn to taller trees, or specimen trees are basic landscaping principles. Professional help is available from landscape designers, nurseries, and garden centers. The University of Wisconsin Extension Program has prepared a helpful guide for do-it-yourselfers: *Planning and Designing Your Home Landscape* (UWEX Bulletin G1923).

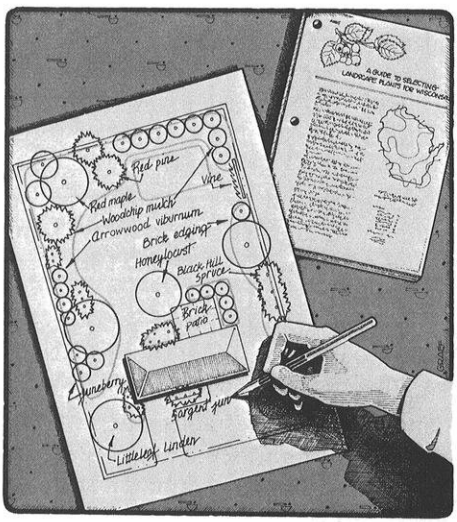

Figure 1. An example of a plan for a backyard habitat-improvement project.

Another component of your plan should be a timetable based on available time and money and how impatient you are to see results. I would strongly suggest a diary as a way to measure your progress and record the changes in wildlife observations that result from your efforts. Periodic photographs of your project provide a nice perspective on its development.

What plants should be used and what birds are likely to respond? An excellent question for which I can only provide a brief answer and refer you to more detailed references. Songbirds likely to frequent backyard habitats in urban and suburban areas (depending on your location in Wisconsin) are listed in Table 1.

The selection of plant materials, as noted earlier, may be influenced by many factors. However, every landscape planting needs a few conifers for winter "green" foliage, winter cover, and excellent nesting habitat. Spruce, arborvitae (white cedar), junipers, yew, pines, and firs are all useful. Serviceberries (*Amelanchier* sp.) make an excellent selection for food-producing small trees and shrubs. The various

Table 1. Habitat preference of the 15 most abundant and 16 less common breeding songbirds of urban and suburban areas (from *Landscape Plants That Attract Birds*—UWEX).

Species	Dense Trees	Few Trees	Shrubs	Open
American Robin		X	X	
Common Grackle		X		
House Wren			X	
Mourning Dove		X	X	
Blue Jay	X	X	X	
Gray Catbird		X	X	
Northern Oriole		X		
Chipping Sparrow		X		
Northern Flicker	X	X		
Northern Cardinal		X	X	
Rose-breasted Grosbeak	X	X		
American Goldfinch			X	
Cedar Waxwing		X		
White-breasted Nuthatch	X	X		
Scarlet Tanager	X			
Tree Swallow				X
Eastern Bluebird				X
Warbling Vireo		X		
Red-eyed Vireo	X			
Brown Thrasher		X	X	
Yellow Warbler			X	X
Indigo Bunting			X	X
Eastern Wood-pewee	X			
Song Sparrow			X	X
Downy Woodpecker	X	X		
Great Crested Flycatcher	X			
Black-capped Chickadee	X			
Wood Thrush	X			
Eastern Phoebe		X		
Yellow-billed Cuckoo	X	X		
Red-headed Woodpecker	X	X		

hawthorns and crab apples make excellent nesting cover and often retain fruits into the winter months. Among the shrubs, the dogwoods are a fine choice. Red-osier dogwood, with its red twigs and white berries, makes an interesting contrast against a backdrop of conifers. Viburnums, elders, chokeberry, buffaloberry and winterberry are also useful shrubs. Trumpetvine, Virginia creeper, and various grapes are good choices for vines. Avoid Tartarian honeysuckle, multiflora rose, buckthorn, and autumn olive which tend to become weedy and invasive.

Ruby-throated Hummingbirds are a favorite with backyard wildlife gardeners. They can be attracted with the popular hummingbird feeders and with plantings. A wide variety of orange, yellow, and especially red, tubular flowers are favored. Flowers such as scarlet petunia, bee balm, scarlet salvia, scarlet runnerbeans, cardinal flower, and scarlet morning glory may be incorporated into flower beds. Shrubs such as trumpet honeysuckle, weigela, or trumpet creeper vine also attract these marvelous birds. Other plants are also available, and increasingly seed catalogues and nurseries note the relative attractiveness of their plants to hummingbirds.

There are several "cautions" you

should be aware of at the outset of a plan to landscape with wildlife in mind. For one thing, patience is a virtue! Some woody vegetation grows painfully slowly. Five years is often necessary for shrub growth, and 20–40 years may be needed for many conifers and hardwood trees. You can reduce the time by planting older stock or fast-growing hybrids, but that will increase cost. Second, your neighbors may not share your enthusiasm for natural areas or the animal life they attract. If you suspect a problem may develop, initiate a public-relations campaign at the outset of your project. Third, there will be substantial work and cost involved in an ambitious project. However, the results are certainly worth the effort! Fourth, different yards or properties have vastly different potentials because of existing vegetation, soil type, topography, size, neighboring habitats, and other factors. Be sure your goals are realistic given some of these limitations (or opportunities!).

Perhaps the major problem area is the potential for wildlife damage or nuisance problems. Many problems can be very annoying and involve costly damage. Abundant cottontail rabbits can destroy some of the very plantings designed to attract wildlife, gray squirrels may take up residence in your attic, a downy woodpecker can cause thousands of dollars in damage to home siding, and a territorial male robin may repeatedly attack your windows. The list could go on and on. The key is anticipation and knowledge. ALL of these problems can be prevented IF you take the time to learn about them and how to prevent them. The task may involve harmless repellents, minor structural changes to your home, increased tolerance, or other action on your part but backyard wildlife and people can coexist. There are numerous helpful brochures on common problem species available through UWEX or the DNR, and I will cover some of these problems in subsequent columns.

I hope this brief treatment of a popular and involved subject served to whet your appetite for more detailed columns in the future. There is also much additional help available to you. Many nurseries and seed suppliers are capitalizing on the boom in demand for wildlife planting. They can provide recommendations on plant materials and landscape design.

The National Wildlife Federation offers a "Gardening with Wildlife Kit" for backyard wildlife enthusiasts. It contains landscape design plans and templates, an extensive bibliography, booklets on backyard wildlife and bird-watching, a diary, seeds and other samples, and many other useful materials. The kit makes an excellent starting point if you are considering the Federation's "Backyard Wildlife Habitat" certification program. A prepaid ($5.00) application is required. An introductory packet is then available to you, and you can order the complete kit for $16.95 (plus $2.00 postage and handling). Write to: The National Wildlife Federation, 1412 Sixteenth St., N.W., Washington,D.C. 20036.

The University of Wisconsin-Extension has several informative and attractive booklets for the backyard birder. *Landscape Plants that Attract Birds* (Publication G1609-$1.00) describes some habitat improvement basics and then lists some 75 trees, shrubs, and vines categorized by size and growth form, value to birds, and horticultural notes. The booklet emphasizes Wisconsin species rather than

exotics. A companion publication that also includes some tips on plantings is *Bird Feeding: Tips for Beginners and Veterans* (Publication G3176-$1.00). UWEX publications are available at any county Extension office or by mail from: Agricultural Bulletin Room, 30 North Murray St., Rm. 245, Madison, WI 53715. A new guide on landscaping for wildlife by Caroll Henderson will be available shortly from the Minnesota DNR. It will complement another very popular Minnesota publication *Woodworking for Wildlife.* Details will appear in a future *Passenger Pigeon.*

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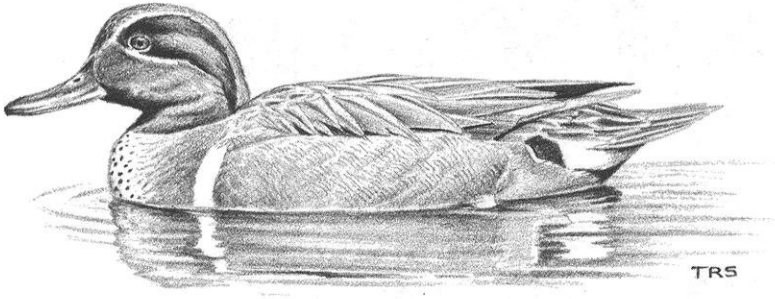

Green-winged Teal *by Thomas R. Schultz*

The Spring Season: 1987

by William K. Volkert

Following the winter that never was, the coming of spring seemed a dubious and uneventful affair. We experienced the driest February on record; and, in fact, all of winter produced little snow. March began with highs in the 30's and 40's across the state. By the 6th virtually all of the snow cover had disappeared from the southern part of the state. On March 7, temperatures were in the 70's throughout Wisconsin, with cranes, snipe, woodcock, Killdeer, and bluebirds arriving. On the 8th, temperatures were in the 60's and 70's, but by afternoon a very strong cold front passed through, dropping temperatures 20 to 30 degrees in less than one hour. On the following night, some areas in the north experienced below zero temperatures. Four to six inches of snow fell in the southern part of the state on the 13th and 14th, but temperatures recovered to the 60's and 70's by the 22nd. Most all of the lakes were open in the southern half of the state by this time, many of them thawing between early and mid-March. This was about 2 weeks earlier than normal and allowed waterfowl to arrive early in the season. The month ended with a cold-snap. Temperatures were down to −8°F in the north, and we had snow in many parts of the state. Overall, temperatures averaged 6 degrees above normal for the month with lots of easterly winds.

April began cold, with snow in the north and temperatures down to 15 and 20°F. From the 6th to the 9th, temperatures climbed to the 60's and 70's across the state, and there were reports of American Kestrels in migration. April 10th, temperatures reached 80°F, but they declined for the following week. On the 17th and 18th, it was in the 80's for the entire state. From the 21st to the 25th it remained mild but dry, with temperatures in the 50's and 60's. On the 26th it was again in the 70's in the north and 80's in the south, and the month ended rather mild. April was a hot, windy and very dry month.

The month of May began somewhat mild, with some frosty nights up north on the 5th and 6th. From the 8th to 11th, temperatures were in the 80's and 90's throughout the state. For the following week, it remained in the 70's

and 80's, but continued dry. From the 18th to 26th it became cool and wet, breaking the spring drought. The leaves on the trees began to unfurl rapidly with the coming of the rain. By the third week of May the trees were almost fully leafed out across much of the state. From the 27th to the end of the month it remained very summer-like with temperatures in the 80's and 90's. Thus, came to an end the spring season and its bird migration.

The lack of winter snow and the resulting dry conditions left few flooded fields and mudflats. This made for a poor showing of shorebirds around the state. However, this was somewhat compensated for, at least locally, by the drawdown of Beaver Dam Lake in Dodge County, which attracted a wide variety of plovers and sandpipers by the tens of thousands. There appeared to be no well defined passerine waves. Both April and May had nearly continuously warm weather and few fronts. Birds appeared to move through rather rapidly and many observers reported seeing few warblers and shorebirds. Also, the trees leafed out early again, possibly concealing those songbirds that were present. Some observers expressed concern over the lack of passerines, wondering if this was related to our seasonal weather conditions or the deforestation of the birds wintering grounds in the tropical rainforests. This will only be determined through long-term observations to see if these birds make a better show of themselves in future seasons in our region, or continue to be seen less abundantly despite favorable weather patterns and sighting opportunities.

But, if passerines and shorebirds as a group appeared rather sparse, then this was also a year for some exceptional sightings. Some of the season's rarities include Western Grebe, the first state record of Clark's Grebe, first record of White-faced Ibis, second record of Black-shouldered Kite, fourth record of Black-necked Stilt, Ruff, Curlew Sandpiper, Least Tern, Eurasian Wigeon, Chuck-wills-widow and an established and spreading population of the House Finch. Also sighted during the period were a Whooper Swan, accepted as an escaped bird, and Trumpeter Swan, accepted as a reintroduced species. The latter 2 birds are the only records not listed in the following summary.

Altogether, 305 species were reported for the period throughout the state. Reports came from 66 counties with 74 observers reporting. As stated earlier, a tremendous number of species were sighted around our state, but there is some well-founded concern about the number of individual birds that comprise these populations. Are they holding their own, or are some showing significant declines? Many observers reported that this season produced a good increase and wider distribution of Eastern Bluebirds and Dickcissels. What about the others? Only our continued vigilance over the long run can answer that. I'm hoping that our observers will be as conscious of the numbers of birds they are seeing, as well as the species that they report.

Reports (March 1–May 31, 1987)

Red-throated Loon.—Present from the beginning of the period until May 1 in Manitowoc County (J. Steffen sighted 20 birds on April 16). Also reported in Ozaukee County on April 10 (M. Bontly sighted 6 birds), and April 12 (Jeff Baughman sighted 2 birds); in Milwau-

kee County on April 10 (B. Cowart and W. Woodmansee sighted 4 birds); and in Douglas County from April 21 to May 27 (R. Johnson).

Common Loon.—First reported in Ozaukee County, March 7 (Jeff Baughman). On April 4, 25 birds were sighted in Dane County (D. Tessen).

Pied-billed Grebe.—Present at the beginning of the period in Dane County (J. Sutton). On April 16, 35 birds were sighted in Jefferson County (K. Etter Hale).

Horned Grebe.—First reported in Ozaukee County, March 7 (Jeff Baughman). Maximum numbers for the period include 75 birds in Manitowoc County, April 16 (J. Steffen) and 124 birds in Douglas County, April 25 (R. Johnson). Last reported in Columbia County, May 30 (A. and S. Shea).

Red-necked Grebe.—First reported in Winnebago County, March 22 through the end of the period (T. Ziebell). Also reported in Columbia County as follows: April 4 (Jeff Baughman); April 9 to May 28 (A. and S. Shea); May 21 (M. Martin sighted 2 birds on Harvey Road ponds); and May 6 (E. Hansen); in Douglas County, April 10 (R. Johnson sighted 9 birds); Forest County, April 15 (D. Tessen); Bayfield County, April 28 (S. Swengel); Dunn County, May 19 to 21 (J. Polk) and May 23 (D. Tessen); and in Burnett County, May 21 (J. Hoefler).

Eared Grebe.—One bird was reported in Dunn County on May 23 (D. Tessen) and on May 31 (Jeff Baughman).

Western Grebe.—First reported in Ozaukee County, April 4 (D. Tessen). Also reported in Burnett County, May 10 (J. Hoefler); and in Douglas County, May 7 (R. Johnson sighted 4 birds).

Clark's Grebe.—With the recent designation of this to "full species status," this becomes Wisconsin's first record, being sighted in Douglas County, May 7 (R. Johnson). This bird was sighted among the flock of Western Grebes at the mouth of the St. Louis River. Accepted as hypothetical by the Records Committee; see "By the Wayside."

American White Pelican.—Reported as follows: in Bayfield County 18 birds were sighted on May 19 (D. Verch); 17 birds were sighted on May 20 (A. Roy); and one bird was seen on May 24 (D. Tessen). In Douglas County, 4 birds were sighted from Wisconsin Point (G. DeBoer).

Double-crested Cormorant.—First reported on April 12, in Ozaukee County (Jeff Baughman) and Door County (R. and C. Lukes) where "hundreds" were sighted. Reported during the period in 29 other counties.

American Bittern.—First reported in Waukesha County, April 3 (R. Smith). In Door County, it was reported that they have been seeing fewer and fewer each year (R. and C. Lukes). Is this related to habitat loss?

Least Bittern.—First reported in Green Lake County, May 10 (T. Schultz). Also sighted in Bayfield, Columbia, Dane, Dodge, Marathon, Monroe, Ozaukee, Racine, Taylor, Vilas, and Winnebago Counties.

Great Blue Heron.—Reported at the beginning of the period in Dane County (B. Hilsenhoff and J. Sutton). One bird was reported over-wintering at Wingra Springs in the U.W. Arboretum (E. Hansen), possibly the same bird.

Great Egret.—First reported in Trempeleau County, March 31 (T. Hunter). Unusual sightings include Bayfield County, May 10 (A. Roy) and Milwaukee County, May 23 (B. Cowart). Also reported in the following counties: Burnett, Columbia, Crawford, Dane, Dodge, Dunn, Eau Claire, Fond du Lac, Grant, Green Lake, Marathon, Monroe, Polk, Portage, Sheboygan, St. Croix, Waukesha, and Winnebago.

Snowy Egret.—Reported in Dodge County, April 17 (Jeff Baughman) and Brown County, May 10 (D. Tessen).

Little Blue Heron.—Reported in LaFayette County, May 23 (D. Tessen).

Cattle Egret.—First reported in Brown County, April 22 (M. Peterson sighted 2 birds). Also reported in Columbia County as follows: April 27 (R. Hoffman); May 9 (A. and S. Shea); May 13 (M. Peterson sighted 2 birds); in Jackson County, April 28 (T. Risch); Dane County, May 2 (Jeff Baughman, B. Hilsenhoff and T. Schultz); Brown County, May 10 (D. Tessen sighted 3 birds); Chippewa County, May 17 (J. Polk); Douglas County, May 24 (D. Tessen); Wood

County, May 30 (D. Follen); and the Horicon NWR staff reported 5 birds at the marsh during the period.

Green-backed Heron.—First reported in Chippewa County, April 23 (J. Polk).

Black-crowned Night Heron.—First reported in Jefferson County, March 27 (S. Robbins). The Horicon NWR staff reports 1,000+ birds during the period.

Yellow-crowned Night Heron.—Reported in Dane County, from April 26 to May 9 (A. and S. Shea sighted 2 birds on April 29).

White-faced Ibis.—This is the first verifiable record for Wisconsin. Two previous sightings remain questionable, and until now this species was listed as hypothetical. As many as 4 birds were sighted at Horicon Marsh this spring with 3 birds conclusively identified as White-faced Ibis. These birds were seen by dozens of birders from throughout Wisconsin and surrounding states. Reports came in as follows: April 23 (Jeff Baughman and B. Volkert); April 25 (J. Haseleu and J. Polk); April 30 (J. Frank); May 1 (F. Lesher); May 2 (W. Mueller and D. Tessen); and May 3 (L. Semo). Accepted by the Records Committee. See "By the Wayside."

Ibis (Plegadis sp.).—An unidentified ibis species was sighted at the Mead W.A. on May 1 (Larry Semo).

Tundra Swan.—Reported at the beginning of the period in Dane County (B. Hilsenhoff). On March 21, 3,500 birds were sighted in Outagamie County (D. Tessen). Last reported in Douglas County on May 29 at Wisconsin Point (L. Semo).

Mute Swan.—Reported at the beginning of the period in Ashland (D. Verch) and Racine (G. DeBoer) Counties. Other reports came in from the following counties: Ashland, Bayfield, Door, Douglas, Dunn, Portage, Rock, Walworth, and Waukesha.

Greater White-fronted Goose.—Reported in Burnett County, at Crex Meadows, on March 20 (L. Semo).

Snow Goose.—Reported at the beginning of the period in Dane County (B. Hilsenhoff). Also reported in Clark, Columbia, Dodge, Door, Douglas, Monroe, Portage, and Vilas Counties.

Canada Goose.—Reported at the beginning of the period in Barron, Bayfield, Burnett, Columbia, Dane, Dodge, Door, Jefferson, Green Lake, Kenosha, Manitowoc, Milwaukee, Polk, Portage, Outagamie, Racine, Sheboygan, Trempeleau, Walworth, and Winnebago Counties. A good migration was noted by several observers from April 16 to 19.

Wood Duck.—Present at the beginning of the period in Dane, Milwaukee, and Ozaukee Counties.

Green-winged Teal.—First reported on March 7 in Columbia and Walworth Counties (D. Tessen).

American Black Duck.—Present at the beginning of the period in the following counties: Ashland, Bayfield, Chippewa, Dane, Door, Dunn, Manitowoc, Milwaukee, Portage, Racine, and Winnebago.

Mallard.—Present at the beginning of the period throughout the state in 23 counties.

Northern Pintail.—Present at the beginning of the period in Racine County (G. DeBoer).

Blue-winged Teal.—First reported in Walworth County, March 15 (P. Parsons).

Cinnamon Teal.—One bird was reported for the period in Dane County, at the Nine Springs Ponds, as follows: May 23 to 26 (F. Freese) and May 23 (E. Hansen).

Northern Shoveler.—Reported at the beginning of the period in Fond du Lac County (B. Volkert) and in Dane County (B. Hilsenhoff, A. and S. Shea, and J. Sutton).

Gadwall.—Present at the beginning of the period in Dane County (E. Hansen, B. Hilsenhoff, and A. and S. Shea). Still present at the end of the period in Green Lake County.

Eurasian Wigeon.—Reported in Rock County as follows: March 14 to April 4 (D. Tessen); March 19 (B. Cowart and J. Polk); March

28 (E. Hansen), and April 5 (W. Mueller). Also reported in Dane County, April 5 (L. and G. Belanger).

American Wigeon.—Present at the beginning of the period in Dane County (J. Sutton). On March 14, 40 birds were reported in Columbia County, and 60 birds were sighted in Rock County (D. Tessen).

Canvasback.—Reported at the beginning of the period in Racine County (G. DeBoer). On April 3, 180 birds were sighted in Jefferson County (K. Etter Hale).

Redhead.—First reported in Waukesha County, March 4 (R. Smith). On March 14 about 100 birds were sighted in both Columbia and Rock Counties (D. Tessen).

Ring-necked Duck.—Present at the beginning of the period in Dane County (J. Sutton). On March 7, observers first sighted this species in the following counties: Chippewa, Columbia, Dane, Jefferson, Rock, Trempeleau, Walworth, and Waukesha. On March 13, 313 birds were sighted in Jefferson County (K. Etter Hale).

Greater Scaup.—Present at the beginning of the period in Door (R. and C. Lukes) and Milwaukee (S. Diehl) Counties. Last reported in Milwaukee County, May 10 (D. Tessen).

Lesser Scaup.—Present at the beginning of the period in Dane County (B. Hilsenhoff and A. and S. Shea) and Fond du Lac County, in the northern Kettle Moraine (B. Volkert). Last reported in Ashland County, May 23 (D. Verch).

Oldsquaw.—Present at the beginning of the period in Door, Manitowoc, Milwaukee, Ozaukee, and Racine Counties. One was reported in Columbia County, March 22 at the DM ponds (D. Tessen). Last reported in Ozaukee County, May 13 (Jeff Baughman and S. Swengel).

Black Scoter.—First reported in Bayfield County, April 29 (S. Swengel sighted 7 birds). Also reported in Ozaukee County, May 2, and Douglas County, May 24 (D. Tessen).

Surf Scoter.—First reported in Douglas County, from April 25 to May 27 (R. Johnson). Also reported for the same county as follows: May 20 (L. Semo), May 24 (A. and S. Shea), and May 24 and 25 (D. Tessen). Reported in Ozaukee County, May 2 (D. Tessen).

White-winged Scoter.—First reported in Ozaukee County, March 22 (Jeff Baughman). Also reported in Ozaukee County, May 2 (D. Tessen); and in Douglas County, May 25 (L. Semo).

Common Goldeneye.—Reported at the beginning of the period in the following counties: Ashland, Bayfield, Chippewa, Dane, Door, Manitowoc, Milwaukee, Portage, Racine, Sauk, Sheboygan, and Winnebago. Present at the beginning of the period in Door (R. and C. Lukes) and Douglas (L. Semo) Counties.

Bufflehead.—Reported at the beginning of the period in Door, Manitowoc, Ozaukee, Racine, Sheboygan, and Winnebago Counties. Last reported in Manitowoc County, May 30 (D. Tessen).

Hooded Merganser.—Present at the beginning of the period in Ozaukee County (Jeff Baughman).

Common Merganser.—Present at the beginning of the period in the following counties: Chippewa, Dane, Door, Douglas, Manitowoc, Racine, and Sauk. Reported at the end of the period in Douglas County (L. Semo).

Red-breasted Merganser.—Present at the beginning of the period in Door (R. and C. Lukes); Manitowoc (C. Sontag and J. Steffen) and Racine (G. DeBoer) Counties. On April 29, 1,000 birds were sighted in Milwaukee County (M. Bontly). Present at the end of the period in Ashland County (D. Verch).

Ruddy Duck.—Present at the beginning of the period in Milwaukee County (Jeff Baughman).

Turkey Vulture.—First reported on March 23 in Dane (B. Hilsenhoff) and Monroe (E. Epstein) Counties. Northerly counties for the period include: Ashland, Barron, Bayfield, Douglas, and Dunn. On March 28, 37 birds were sighted in Sauk County (D. Tessen).

Black-shouldered Kite.—This is only the second record for this species for Wisconsin. It was discovered during the annual convention in

Wood County (May 16), and was sighted and enjoyed by many observers. This record was accepted by the Records Committee. See "By the Wayside."

Osprey.—First reported in Iron County, April 9 (M. Butterbrodt). During the period it was reported from 32 counties across the state. It was also reported nesting in Green Lake and Marathon Counties in May.

Bald Eagle.—Present at the beginning of the period in the following counties: Barron, Burnett, Chippewa, Douglas, Forest, Iron, Jackson, Marinette, Polk, Sauk, and Trempeleau. During the period it was also reported from 16 other counties.

Northern Harrier.—Present at the beginning of the period in Barron, Clark, Dane, Dodge, Jackson, and Green Lake Counties. During the period it was also reported from 30 other counties from around the state.

Sharp-shinned Hawk.—Present at the beginning of the period in Door, Green Lake, Jackson, and Walworth Counties.

Cooper's Hawk.—Present at the beginning of the period in Crawford, Dane, Door, Green Lake, Iron, and Jackson Counties. During the period it was also reported from 19 other counties.

Northern Goshawk.—Present at the beginning of the period in Ashland, Door, Fond du Lac, and Ozaukee Counties. On April 10, an active nest was found in Monroe County (E. Epstein). One bird was sighted in Milwaukee County, May 26 (B. Cowart). Present at the end of the period in Ashland and Door Counties.

Red-shouldered Hawk.—Present at the beginning of the period in Polk (J. Hudick) and Portage (L. Semo) Counties. Reported during the period in 19 other counties.

Broad-winged Hawk.—First reported in Barron County, April 1 (A. Goff).

Swainson's Hawk.—One bird was reported in Clark County, March 7 (N. Risch).

Red-tailed Hawk.—Present during the period throughout the state.

Rough-legged Hawk.—Last reported in Manitowoc County, May 22 (J. Steffen).

Golden Eagle.—Reported from the beginning of the period to March 2 in Monroe County (E. Epstein). Also reported in Dane County, March 19 (J. Sutton) and in Sauk County, May 24 (S. Swengel).

American Kestrel.—Present during the period throughout the state.

Merlin.—A good number of sightings this spring were reported in the following counties: March 24, Ashland (S. Swengel); March 27, Eau Claire (J. Polk); April 3, Taylor (N. Risch); April 5, Jackson (T. Risch); April 7, Door (R. and C. Lukes); April 15 to the end of the period, Ashland (D. Verch); April 15, Oneida (D. Tessen); April 23, Ashland (S. Robbins); April 25 and May 19, Douglas (R. Johnson), April 27, Jackson (D. Harmer); April 29, Fond du Lac (B. Volkert); May 1, Clark and Marathon (S. Robbins); May 9, Milwaukee (B. Cowart); May 10, Dodge (S. Diehl); May 10, Burnett (J. Hoefler); May 10, Chippewa (J. Polk); and May 15, Manitowoc (J. Steffen).

Peregrine Falcon.—Reported as follows: April 8 to the end of the period, Sauk County (S. Swengel); April 19, Buffalo County (F. Lesher); April 28, Burnett County (J. Hoefler); May 17, Eau Claire County (J. Polk); May 17, Juneau County (D. Tessen); May 24, Douglas County (D. Tessen); May 27, Douglas County (R. Johnson); May 28, Milwaukee County (S. Diehl); and May 29, Manitowoc County (J. Steffen).

Gray Partridge.—Reported during the period in Columbia, Dane, Dodge, Door, Fond du Lac, LaFayette, Manitowoc, Marinette, Ozaukee, Shawano, and Walworth Counties.

Ring-necked Pheasant.—Reported during the period in 34 counties across the state.

Ruffed Grouse.—Reported during the period in 40 counties throughout the state.

Greater Prairie Chicken.—Reported during the period in the following counties: Burnett, Clark, Marathon, Portage, Taylor, and Wood.

Sharp-tailed Grouse.—Reported during

the period in Burnett, Douglas, Taylor, and Vilas Counties.

Wild Turkey.—Some question remains about the origins of the birds in the most northerly counties. However, the reintroduction of this species into the southern part of the state has resulted in a tremendous increase and spread of the population throughout much of its original range. Reports came in from the following counties: Crawford, Dane, Fond du Lac, Grant, Jackson, LaFayette, Marinette, Monroe, Sauk, Taylor (in the Chequemagon Forest), Washington, and Wood.

Northern Bobwhite.—Reported during the period in the following counties: Crawford, Dunn, Eau Claire, Green Lake, Jackson, Jefferson, LaFayette, Marquette, Rock, Sauk, and Walworth.

Yellow Rail.—An injured bird was found in Milwaukee County, April 27 and brought to the Wildlife ARC (S. Diehl); sightings were reported for Burnett County as follows: May 3 (J. Hoefler); May 23 and 24 (D. Tessen) and May 31 (Jeff Baughman sighted 2 birds).

King Rail.—First reported on May 9 in Racine (G. DeBoer) and Winnebago (D. Tessen) Counties. Also reported in Columbia County as follows: May 13 (T. Schultz); May 13 to the end of the period (Jeff Baughman sighted 6 birds); May 21 (M. Martin sighted 3 birds); May 26 (R. Hoffman); and May 28 (A. and S. Shea). Most of these sightings were indicated as coming from the Harvey Road ponds.

Virginia Rail.—First reported in Dodge County, April 11 (J. Haseleu).

Sora.—First reported in Dane County, April 9 (K. Lange).

Common Moorhen.—First reported in Fond du Lac County, April 24 (T. Schultz). Also reported during the period in Columbia, Dane, Dodge, Grant, Walworth, and Winnebago Counties.

American Coot.—Present at the beginning of the period in Dane, Marinette, Walworth, and Winnebago Counties. On April 19, 200 birds were sighted in Burnett County (J. Hoefler).

Sandhill Crane.—Present at the beginning of the period in Dane (J. Sutton); Walworth (P. Parsons), and Winnebago (T. Ziebell) Counties.

Black-bellied Plover.—First reported in Dodge County, April 20 (T. Schultz). On May 16, 30 birds were sighted in Burnett County (J. Hoefler). Present at the end of the period in Manitowoc County (Jeff Baughman and C. Sontag).

Lesser Golden Plover.—First reported in Dodge County, April 20 (T. Schultz). On May 16, 12 birds were sighted in Dodge County (J. Frank). Last reported in Jefferson County, May 19 (D. Cedarstrom).

Semipalmated Plover.—First reported in Marathon County, March 23 (N. Risch). Present at the end of the period in Manitowoc (C. Sontag) and Sheboygan (Jeff Baughman) Counties.

Piping Plover.—One bird was reported in Douglas County, May 21 (R. Johnson).

Killdeer.—Present at the beginning of the period in Fond du Lac (Jeff Baughman), Green Lake (T. Schultz), and Milwaukee (M. Bontly) Counties.

American Avocet.—One bird was reported at the end of the period in Manitowoc County (C. Sontag).

Black-necked Stilt.—One bird was sighted at the DM ponds near Arlington, in Columbia County. It was reported on May 24 (B. Cowart and D. Williams) and on May 25 (M. Martin and D. Tessen). This is Wisconsin's 4th state record accepted by the Records Committee. See "By the Wayside."

Greater Yellowlegs.—First reported in Chippewa County, March 24 (J. Polk). On May 2, a mixed flock of 2–3,000 greater and lesser were sighted in Dodge County (T. Schultz). Last reported in Douglas County, May 24 (D. Tessen).

Lesser Yellowlegs.—First reported in Dane County, March 20 (J. Sutton). On April 30, 500 birds were sighted in Dodge County (J. Frank). Last reported in Burnett County, May 24 (D. Tessen).

Solitary Sandpiper.—First reported on April 20, in Eau Claire (J. Polk) and Taylor (N. Risch) Counties. On May 4, 25 birds were sighted in LaCrosse County (F. Lesher). Last reported in Manitowoc County, May 21 (C. Sontag).

Willet.—First reported in Milwaukee County, May 9 (J. Frank). Also reported on May 13, in Milwaukee County (W. Woodmansee) and Manitowoc County (Jeff Baughman and T. Schultz sighted 6 birds); May 21 and 22, Ashland County (D. Verch); May 27, Douglas County (R. Johnson); May 27 and 28, Bayfield County (S. Swengel); and May 29, Manitowoc County (C. Sontag).

Spotted Sandpiper.—First reported in Barron County, April 21 (A. Goff).

Upland Sandpiper.—First reported in Wood County, April 21 (T. Ziebell). Also reported during the period in Ashland, Barron, Bayfield, Burnett, Clark, Door, Douglas, Eau Claire, Iron, LaCrosse, LaFayette, Manitowoc, Milwaukee, Monroe, Ozaukee, Portage, Shawano, Taylor, Washington, and Winnebago Counties.

Whimbrel.—First reported in Manitowoc County, May 13 (Jeff Baughman and T. Schultz). Also from the same county, May 14 to the end of the period, with 35 birds being sighted on May 17 (C. Sontag); May 14, Racine County (S. Thiessen); May 19, Douglas County (R. Johnson); May 21, Douglas County (L. Semo); and May 30, Manitowoc County (D. Tessen).

Hudsonian Godwit.—First reported in Dane County, May 5, where 5 birds were sighted at Nine Springs ponds (D. Fallow). Also reported during the period as follows: May 12, Columbia County (A. and S. Shea); May 13, Fond du Lac County (Jeff Baughman); May 13, Dodge County (T. Schultz sighted 7 birds); May 14, Manitowoc County (C. Sontag sighted 3 birds); May 14, Racine County (G. DeBoer); May 15, Columbia County (D. Tessen); May 16 and 22, Chippewa County (J. Polk); May 17, Wood County (D. Tessen); May 19, Jefferson County (D. Cedarstrom); May 20, Dunn County (J. Polk); May 20, Ashland County (D. Verch); and May 24, Burnett County (D. Tessen).

Marbled Godwit.—First reported in Burnett County, May 13 (J. Hoefler). Also reported in Ashland County, May 19 and 29 (D. Verch sighted 2 birds).

Ruddy Turnstone.—First reported in Dane County, April 26 (A. and S. Shea). On May 30, 1,000 birds were sighted in Manitowoc County (D. Tessen). Last reported in Manitowoc County at the end of the period, with 950 birds being sighted (C. Sontag).

Red Knot.—First reported on May 22, Douglas County (L. Semo) and Manitowoc County, through the end of the period (C. Sontag sighted 6 birds). Also reported in Douglas County, May 23 and 27 (R. Johnson sighted 5 birds); and May 24 and 25 (D. Tessen); Columbia County, May 24 (A. and S. Shea); Bayfield County, May 26 (S. Swengel); and Manitowoc County, May 30 (D. Tessen sighted 10 birds).

Sanderling.—First reported on May 10, in Manitowoc County (D. Tessen). Present at the end of the period in the same county (C. Sontag).

Semipalmated Sandpiper.—First reported in Fond du Lac County, May 2 (Jeff Baughman). On May 25, 120 birds were sighted in Dane County (S. Thiessen). Last reported at the end of the period in Ashland, Columbia, Dane, Eau Claire, Manitowoc, Marinette, and Sheboygan Counties.

Western Sandpiper.—Reported in Dane County, May 12 (A. and S. Shea) and May 25 (S. Thiessen).

Least Sandpiper.—First reported in Eau Claire County, April 20 (J. Polk). Present at the end of the period in Ashland (D. Verch) and Manitowoc (C. Sontag) Counties.

White-rumped Sandpiper.—First reported in Eau Claire County, May 11 (J. Polk). On May 25, 30 birds were sighted in Dane County (S. Thiessen). Present at the end of the period in Dane and Eau Claire Counties. Also reported during the period in Bayfield, Columbia, Dodge, Douglas, Fond du Lac, Jackson, Manitowoc, and Marathon Counties.

Baird's Sandpiper.—First reported in Dodge County, April 25 (J. Polk). Also reported during the period in Ashland, Barron, Bayfield, Burnett, Columbia, Dane, Ozaukee, and Racine Counties.

Pectoral Sandpiper.—First reported in Chippewa County, March 26 (J. Polk). Also re-

ported on March 28 in Dodge and Dane Counties. On April 25, 1,200 birds were sighted in Dodge County (D. Tessen). Present at the end of the period in Dane County (S. Thiessen).

Dunlin.—First reported in Fond du Lac County, April 24 (Jeff Baughman). Present at the end of the period in Ashland, Columbia, Dane, Manitowoc, and Sheboygan Counties.

Curlew Sandpiper.—All reports were of one bird sighted in Columbia County. Reported as follows: May 23 (T. Schultz); May 24 (Jeff Baughman, B. Cowart and J. Polk); and May 26 (R. Hoffman). Accepted by the Records Committee. See "By the Wayside."

Ruff.—First reported in Columbia County, at Goose Pond, April 11 (P. Ashman, Jeff Baughman and D. Tessen). Also reported in Fond du Lac County, May 1 (Jeff Baughman); and Dodge County, May 2 (D. Tessen).

Short-billed Dowitcher.—First reported in Dane County, April 11 (E. Hansen). On May 9, 21 birds were sighted in Milwaukee County (J. Frank). Last reported in Manitowoc County, May 27 (C. Sontag).

Long-billed Dowitcher.—First reported in Door County, May 2 (R. and C. Lukes).

Common Snipe.—Present at the beginning of the period in Sheboygan County (Jeff Baughman sighted 2 birds).

American Woodcock.—First reported in Sauk County, March 4 (K. Lange).

Wilson's Phalarope.—First reported in Dodge County, April 20 (Jeff Baughman).

Red-necked Phalarope.—First reported in Dane County, May 17 (E. Hansen). Also reported in Dunn County, May 19 and 21 (J. Polk sighted 3 birds); Columbia County, May 21 (S. Swengel); and St. Croix County, May 23 (D. Tessen).

Parasitic Jaeger.—Reported in Douglas County, May 24 (D. Tessen).

Franklin's Gull.—First reported in Manitowoc County, May 12 (S. Swengel). Also reported in Winnebago County, May 13 (T. Ziebell); and on May 30, in Dunn (J. Polk) and Manitowoc (D. Tessen) Counties.

Little Gull.—First reported in Manitowoc County, from April 25 to the end of the period (C. Sontag). Also reported from the same county, May 12 (S. Swengel) and May 30 (D. Tessen); Ozaukee County, May 3 (Jeff Baughman); and an inland sighting in Dodge County, May 2 (Jeff Baughman and T. Schultz).

Bonaparte's Gull.—First reported in Milwaukee County, March 2 (D. Tessen). On May 10, 3,000 birds were sighted in Manitowoc County (D. Tessen) and 2,000 birds were sighted in Sheboygan County (D. and M. Brasser). Also reported in Ashland, Bayfield, Burnett, Chippewa, Columbia, Dane, Dodge, Door, Douglas, Eau Claire, Fond du Lac, Kenosha, LaFayette, Monroe, Ozaukee, Sauk, Waupaca, and Winnebago Counties. Present at the end of the period in Ashland and Manitowoc Counties.

Ring-billed Gull.—Present during the period throughout the state.

Herring Gull.—Present during the period throughout the state.

Thayer's Gull.—Reported in Manitowoc County, April 20 (D. Tessen).

Iceland Gull.—Reported in Manitowoc County, March 18 to April 20 (C. Sontag). Accepted by the Records Committee.

Glaucous Gull.—Reported at the beginning of the period until May 6 (R. Johnson) with 5 birds being sighted on March 22. Also reported in Manitowoc County, March 18 to the end of the period (C. Sontag sighted 2 birds); Ozaukee County, March 22 (Jeff Baughman) and April 10 (B. Cowart); and in Milwaukee County, May 2 (D. Tessen).

Greater Black-backed Gull.—First reported in Manitowoc County, March 29 (C. Sontag). Also reported in Douglas County, May 25 (D. Tessen).

Caspian Tern.—First reported on April 10 in Milwaukee County (B. Cowart and S. Diehl) and in Manitowoc County (J. Steffen and C. Sontag). On April 25, 175 birds were sighted in

Manitowoc County (C. Sontag) and on May 10, 85 birds were sighted in the same county (D. Tessen). Also reported during the period in Ashland, Bayfield, Burnett, Chippewa, Dane, Door, Douglas, Iron, Marinette, Ozaukee, Sheboygan, and Taylor Counties.

Common Tern.—First reported in Winnebago County, April 17 (T. Ziebell). On May 12, 6,500 birds were sighted in Manitowoc County (S. Swengel). Also sighted in Ashland, Bayfield, Burnette, Clark, Dane, Door, Douglas, Dunn, Jackson, Marathon, Marinette, Milwaukee, Monroe, Ozaukee, Sheboygan, Taylor, and Wood Counties.

Forster's Tern.—First reported in Winnebago County, April 15 (T. Ziebell). On April 27, 35 birds were reported in Manitowoc County (C. Sontag). Also reported in Bayfield, Burnett, Columbia, Dane, Douglas, Dunn, Fond du Lac, Green Lake, Jefferson, LaCrosse, LaFayette, Marinette, Marquette, Milwaukee, Monroe, Ozaukee, Sheboygan, Taylor, and Waupaca Counties.

Least Tern.—There were at least 2 birds in the state this spring. First reported in Columbia County, May 28 (A. and S. Shea); May 30 (R. Hoffman and G. DeBoer); and May 30 at Otsego Marsh (F. Freese and A. Holzheuter); and Dunn County, May 28 (J. Polk).

Black Tern.—First reported in Columbia County, April 29 (E. Hansen). On May 25, 200 birds were sighted in Dodge County (J. Frank). Also reported in Ashland, Barron, Bayfield, Dane, Dodge, Douglas, Dunn, Fond du Lac, Green Lake, Jackson, Jefferson, LaCrosse, Manitowoc, Marinette, Marathon, Milwaukee, Ozaukee, Polk, Portage, Shawano, Taylor, Trempeleau, Walworth, Washington, and Waukesha Counties.

Rock Dove.—Present during the period throughout the state.

Mourning Dove.—Present during the period throughout the state.

Black-billed Cuckoo.—First reported in Walworth County, May 2 (P. Parsons).

Yellow-billed Cuckoo.—First reported in Jackson County, April 23 (T. Risch). Also reported during the period in Clark, Dane, Door, Grant, Green Lake, Jackson, Manitowoc, Milwaukee, Monroe, Ozaukee, Polk, Racine, Rock, Sauk, Taylor, and Winnebago Counties.

Eastern Screech-Owl.—Present at the beginning of the period in Barron, Eau Claire, Green Lake, Jackson, Sauk, and Winnebago Counties.

Great Horned Owl.—Present during the period throughout the state.

Snowy Owl.—Present at the beginning of the period in Ashland, Clark, Winnebago Counties, and in Douglas County where one bird remained until May 15. Also sighted during the period in Iron, Outagamie, Ozaukee, and Portage Counties. Last reported in Brown County, May 19 (M. Peterson).

Barred Owl.—Present during the period throughout the state.

Long-eared Owl.—Reported during the period in Columbia, Dane, Green Lake, and Milwaukee Counties.

Short-eared Owl.—Reported as follows: March 11, Milwaukee County (S. Diehl); March 22, Wood County (S. Swengel); April 6, LaFayette County (R. Hoffman); April 11, Sheboygan County (D. and M. Brasser); and April 17, Portage County (L. Semo).

Northern Saw-whet Owl.—Reported as follows: Sauk County, beginning of the period to March 20 (S. Swengel); Douglas County, March 7 to end of period (R. Johnson); Ashland County, March 16, sighting 6 birds, until the end of the period (D. Verch); Milwaukee County, March 20 (S. Diehl); Dane County, March 28 (D. Tessen); Iron County, March 30 to end of period (S. and L. LaValley); Clark County, May 4 (S. Robbins found a disturbed nest with 4 dead young); Oneida County, May 21 (S. Robbins); and Crawford County, May 24 (E. Merz).

Common Nighthawk.—First reported in Dane County, April 24 (Jeff Baughman). On May 25, 500 birds were sighted in LaCrosse County (F. Lesher).

Chuck-wills-widow.—Reported May 22 in Polk County, near Dresser, at the same location as last year (N. Honerman).

Whip-poor-will.—First reported in Sauk County, April 16 (S. Swengel).

Chimney Swift.—First reported in Ozaukee County, April 19 (Jeff Baughman).

Ruby-throated Hummingbird.—First reported in Green Lake County, May 6 (T. Schultz).

Belted Kingfisher.—Present at the beginning of the period in Dane, Eau Claire, Jackson, Marinette, Polk, Racine, and Trempeleau Counties.

Red-headed Woodpecker.—Present at the beginning of the period in Outagamie County (J. Anderson).

Red-bellied Woodpecker.—Northerly counties reporting this species include Ashland, Barron, Clark, Door, Douglas, Dunn, Eau Claire, Marathon, Marinette, Polk, Shawano, and Taylor.

Yellow-bellied Sapsucker.—Present at the beginning of the period in Jackson County (T. Risch). One was reported in Racine County, May 16 (B. Cowart).

Downy Woodpecker.—Present during the period throughout the state.

Hairy Woodpecker.—Present during the period throughout the state.

Black-backed Woodpecker.—Reported from the beginning of the period to the end in Douglas County (R. Johnson). In Douglas County, a nesting pair was observed at Stone's Bridge along the Brule River, and reported by several observers. Also reported in Forest County, April 15 (D. Tessen).

Northern Flicker.—Present at the beginning of the period in Fond du Lac, Outagamie, Ozaukee, and Sheboygan Counties.

Pileated Woodpecker.—Southerly counties reporting this species include Crawford, Dane, Fond du Lac, Grant, Green Lake, Jackson, Outagamie, Sauk, Trempeleau, Washington, and Wood Counties.

Olive-sided Flycatcher.—First reported in Jackson County, April 28 (T. Risch).

Eastern Wood-Pewee.—First reported in Sauk County, May 5 (S. Swengel).

Yellow-bellied Flycatcher.—First reported in Milwaukee County, May 18 (J. Frank). On May 19, 3 birds were sighted in Manitowoc County (C. Sontag). Also reported in Douglas, Forest, Oneida, and Taylor Counties.

Acadian Flycatcher.—First reported on May 11 in Milwaukee (J. Frank) and Sauk (E. Hansen) Counties.

Alder Flycatcher.—First reported in Dane County, May 11 (B. Hilsenhoff). On May 23, 10 birds were sighted in Rock County (D. Tessen).

Willow Flycatcher.—First reported in Walworth County, May 15 (D. Tessen).

Least Flycatcher.—First reported in Sauk County, April 30 (K. Lange).

Eastern Phoebe.—First reported in Sauk County, March 21 (K. Lange).

Great-crested Flycatcher.—First reported in Jackson County, April 24 (T. Risch).

Western Kingbird.—One bird was reported in Sauk County, May 15 (R. Hoffman).

Eastern Kingbird.—First reported in Taylor County, April 3 (N. Risch).

Horned Lark.—Present during the period throughout the state.

Purple Martin.—First reported in Winnebago County, March 24 (T. Ziebell).

Tree Swallow.—First reported in Dane County, March 21 (J. Sutton). On March 28, it was first reported in Columbia, Fond du Lac, Rock, and Sauk Counties by several observers, indicating a strong migration.

Northern Rough-winged Swallow.—

First reported in Portage County, April 3 (L. Semo).

Bank Swallow.—First reported in Portage County, April 13 (L. Semo).

Cliff Swallow.—First reported in Jackson County, April 18 (T. Risch).

Barn Swallow.—First reported in Monroe County, March 23 (E. Epstein).

Gray Jay.—Reported throughout the period in Douglas (R. Johnson) and Iron (M. Butterbrodt and S. and L. LaValley) Counties. Also reported in Bayfield, Forest, Oneida, and Vilas Counties.

Blue Jay.—Present during the period throughout the state.

American Crow.—Present during the period throughout the state.

Common Raven.—Southerly counties include Door, Monroe, Sauk, and Shawano.

Black-capped Chickadee.—Present during the period throughout the state.

Boreal Chickadee.—Reported as follows: Douglas County, March 14 to April 17 (R. Johnson); March 25 (S. Swengel); and May 25 (D. Tessen); Oneida County, April 9 (J. Polk) along Old "A"; and May 19 (S. Swengel); and Vilas County, March 2 (Jim Baughman).

Tufted Titmouse.—Reported during the period in Crawford, Columbia, Dane, Eau Claire, Grant, Green, LaFayette, Rock, and Sauk Counties.

Red-breasted Nuthatch.—Present at the beginning of the period in 18 counties. From March 19 to May 22, one bird was seen tending a nest in LaCrosse (F. Lesher).

White-breasted Nuthatch.—Present during the period throughout the state.

Brown Creeper.—Present at the beginning of the period in Dane County (B. Hilsenhoff).

Carolina Wren.—Reported in LaFayette County, April 25 (R. Hoffman) and in Grant County, May 26 (F. Lesher).

House Wren.—First reported in Door County, April 10 (R. and C. Lukes).

Winter Wren.—First reported in Sauk County, March 22 (K. Lange).

Sedge Wren.—First reported in Columbia County, April 22 (S. Swengel).

Marsh Wren.—First reported in Dodge County, April 11 (J. Haseleu).

Golden-crowned Kinglet.—First reported in Dane County, March 8 (P. Ashman). Present at the end of the period in Door, Douglas, Jackson, and Taylor Counties.

Ruby-crowned Kinglet.—First reported in Dane County, March 28 (P. Ashman). Present at the end of the period in Ashland County (D. Verch).

Blue-gray Gnatcatcher.—First reported in Milwaukee County, April 18 (M. Bontly).

Eastern Bluebird.—First reported on March 6 in Green Lake (T. Schultz) and Monroe (E. Epstein) Counties. Reported during the period from 38 counties across the state.

Townsend's Solitaire.—One was reported in Sauk County, from the beginning of the period to April 6 (K. Lange).

Veery.—First reported on April 21 in Door (R. and C. Lukes) and Rock (T. Schultz) Counties.

Gray-cheeked Thrush.—First reported in Iron County, April 16 (M. Butterbrodt).

Swainson's Thrush.—First reported in Jackson County, April 24 (T. Risch).

Hermit Thrush.—First reported in Milwaukee County, March 21 (S. Diehl and W. Woodmansee).

Wood Thrush.—First reported in Milwaukee County, April 17 (M. Bontly).

American Robin.—Present at the beginning of the period in Bayfield, Burnett, Dane, Dunn, Green Lake, Milwaukee, Sauk, and Walworth Counties.

Varied Thrush.—Present from the beginning of the period to March 24 in Jackson County (D. Harmer).

Gray Catbird.—First reported in Taylor County, April 20 (N. Risch).

Northern Mockingbird.—Reported as follows: Manitowoc County, April 24 to May 2 (J. Steffen) this bird was captured and banded; Outagamie County, May 2 (J. Anderson); Dane County, May 11 (F. Freese) sighted at the U.W. Arboretum; Green County, May 12 (N. R. Barger); Lincoln County, May 12 (S. Robbins); Douglas County, May 25 (R. Johnson and D. Tessen); and Wood County, May 27 (D. Follen).

Brown Thrasher.—First reported in Racine County, March 16 (G. DeBoer).

Water Pipit.—First reported in LaFayette County, March 15 (R. Hoffman). Also reported in Ashland, Bayfield, Columbia, Dodge, Douglas, Eau Claire, and Ozaukee Counties. On May 10, 16 birds were sighted in Dodge County (T. Schultz).

Bohemian Waxwing.—Reported at the beginning of the period in the following counties: Bayfield (A. Roy); remaining until March 9 in Door County (R. and C. Lukes); remaining until March 16 in Iron County (S. and L. LaValley); remaining until April 4 in Eau Claire County (J. Polk sighted 50 birds); also reported in Shawano County, March 2 (M. Peterson); Door County, March 7 (S. Thiessen sighted 63 birds); Iron County, March 14 (M. Butterbrodt); Eau Claire County, March 22 (W. Mueller); and Clark County, March 28 to April 4 (L. Risch).

Cedar Waxwing.—Present at the beginning of the period in Barron, Dane, Sauk, and Washington Counties.

Northern Shrike.—Last reported in Green Lake County, April 11 (T. Schultz).

Loggerhead Shrike.—Reported as follows: Chippewa County, March 24 (J. Polk); Taylor County, March 26 (N. Risch); Dane County, April 5 (P. Ashman sighted 2 birds); and April 21 (R. Hoffman); Monroe County, April 10 (E. Epstein); and Pepin County, May 24 (R. Hoffman); and May 31 (Jeff Baughman sighted 2 birds).

European Starling.—Present during the period throughout the state.

White-eyed Vireo.—First reported on May 11 in Dane (A. and S. Shea) and Milwaukee (J. Frank) Counties. Also reported in Green County, May 13 (M. Peterson); Walworth County, May 15 (D. Tessen); LaFayette County, May 18 (N. R. Barger) and May 31 (R. Hoffman); Dane County, May 18 (F. Freese) and May 27 to the end of the period (S. Thiessen); and Green County, May 23 (D. Tessen).

Bell's Vireo.—First reported in LaFayette County, May 23 (D. Tessen). Also sighted in the same county, May 31 (R. Hoffman); and in Grant County, May 24 (T. Schultz); and May 26 (F. Lesher).

Solitary Vireo.—First reported in Dane County, April 29 (B. Hilsenhoff). Present at the end of the period in Juneau County (S. Swengel).

Yellow-throated Vireo.—First reported in Sauk County, April 28 (K. Lange).

Warbling Vireo.—First reported in Jefferson County, April 30 (K. Etter Hale).

Philadelphia Vireo.—First reported on May 10 in Eau Claire (J. Polk) and LaFayette (R. Hoffman) Counties. On May 21, 3 birds were sighted in Douglas County (R. Johnson). Also reported in Bayfield, Forest, Green Lake, Manitowoc, Milwaukee, and Racine Counties.

Red-eyed Vireo.—First reported in Sauk County, April 25 (K. Lange).

Blue-winged Warbler.—First reported in Dane County, May 1 (B. Hilsenhoff and A. and S. Shea).

Golden-winged Warbler.—First reported in Dane County, April 28 (J. Sutton).

Blue-winged* × *Golden-winged Hybrids.—A Brewster's Warbler was reported in Waukesha County, May 8 (R. Smith); and a Lawrence's Warbler was reported in Sauk County, at Parfrey's Glen, May 25 (R. Hotham).

Tennessee Warbler.—First reported in Door County, April 26 (R. and C. Lukes).

Orange-crowned Warbler.—First reported in Dane County, May 2 (Jeff Baughman and T. Schultz).

Nashville Warbler.—First reported in Sauk County, April 23 (K. Lange).

Northern Parula.—First reported in Outagamie County, April 26 (J. Anderson).

Yellow Warbler.—First reported on April 25 in Dane (B. Hilsenhoff and J. Sutton) and LaFayette (Jeff Baughman) Counties. Twelve birds were sighted in the latter county.

Chestnut-sided Warbler.—First reported in Sauk County, May 5 (S. Swengel).

Magnolia Warbler.—First reported in Sheboygan County, April 23 (the Kuhn's).

Cape May Warbler.—First reported in Sauk County, May 2 (K. Lange).

Black-throated Blue Warbler.—First reported in Dane County, May 2 (J. Sutton). Also reported in the following counties: Dane, May 7 (E. Hansen); Milwaukee, May 10 (J. Frank); May 11 (S. Diehl) and May 22 (M. Bontly); Manitowoc, May 11 to 15 (J. Steffen) and May 13 (C. Sontag); Door, May 13 (R. and C. Lukes); Walworth, May 15 (D. Tessen); Shawano, May 19 (M. Peterson); and Ashland, May 20 (D. Verch).

Yellow-rumped Warbler.—First reported in Shawano County, March 2 (M. Peterson).

Black-throated Green Warbler.—First reported in Sheboygan County, April 21 (the Kuhn's).

Blackburnian Warbler.—First reported in Rock County, April 25 (T. Schultz). Present at the end of the period in Sauk County (Jeff Baughman).

Yellow-throated Warbler.—Reported as follows: LaFayette County, April 25 (R. Hoffman); and Rock County, May 13 (M. Peterson sighted 2 birds); and May 23 (D. Tessen).

Pine Warbler.—First reported in Vilas County, April 20 (Jim Baughman). Also reported in the following counties: Adams, Ashland, Bayfield, Burnett, Chippewa, Dane, Door, Douglas, Forest, Jackson, Juneau, Monroe, Oneida, Polk, Portage, Racine, Sauk, Shawano, and Wood.

Prairie Warbler.—First reported in Ozaukee County, May 11 (B. Cowart). Also reported in the same county on May 16 (J. Frank); May 23 (Jeff Baughman) and May 30 (D. Tessen); and in Rock County, May 28 (J. Frank).

Palm Warbler.—First reported on April 20 in Sauk (Jeff Baughman) and Vilas (Jim Baughman) Counties.

Bay-breasted Warbler.—First reported in Sauk County, May 6 (S. Swengel).

Blackpoll Warbler.—First reported on May 9 in Manitowoc (M. Albrecht) and Outagamie (J. Anderson) Counties.

Cerulean Warbler.—First reported in Sauk County, May 7 (S. Swengel).

Black-and-white Warbler.—First reported in Sauk County, April 20 (K. Lange).

American Redstart.—First reported in Vilas County, April 15 (Jim Baughman).

Prothonotary Warbler.—First reported in Outagamie County, May 9 (D. Tessen). Also reported in Grant, LaFayette, Polk, Rock and Trempeleau Counties.

Worm-eating Warbler.—Reported in Sauk County, May 10 (T. Schultz); May 12 (A. and S. Shea); and May 13 (Jeff Baughman); and in Juneau County, May 15 (D. Tessen).

Ovenbird.—First reported in Dane County, April 24 (A. and S. Shea).

Northern Waterthrush.—First reported in Milwaukee County, April 9 (M. Bontly).

Louisiana Waterthrush.—First reported in Sauk County, April 12 (S. Swengel). Also reported in Adams, Fond du Lac, Grant, Juneau, Milwaukee, Shawano, and Wood Counties.

Kentucky Warbler.—First reported in Grant County, May 9 (S. Thiessen sighted 6 birds). Also reported for the same county; May 23 (D. Tessen and D. and M. Brasser); May 25 (T. Schultz); and May 26 (F. Lesher); in Sauk County, May 13 (K. Lange) and May 23 (S. Swengel); Racine County, May 14 to 16 (G. DeBoer) and May 16 (B. Cowart); and Waukesha County, May 31 (B. Cowart).

Connecticut Warbler.—First reported in Green Lake County, May 10 (T. Schultz).

Mourning Warbler.—First reported in Racine County, May 9 (G. DeBoer).

Common Yellowthroat.—First reported in Milwaukee County, April 9 (W. Woodmansee).

Hooded Warbler.—First reported in Sauk County, May 16 (Jeff Baughman). Also reported in Douglas County, May 23 (R. Johnson); Rock County, May 23 (D. Tessen); Sauk County, May 23 (S. Swengel); and Waukesha County, May 31 (B. Cowart).

Wilson's Warbler.—First reported in Sauk County, May 2 (S. Swengel). On May 15, 10 birds were sighted in Walworth County (D. Tessen).

Canada Warbler.—First reported in Milwaukee County, May 10 (J. Frank). Present at the end of the period in Dane and Fond du Lac Counties.

Yellow-breasted Chat.—First reported in Milwaukee County, May 12 (M. Bontly, B. Cowart, W. Woodmansee and N. Zehner). This bird remained until at least May 15. Many other reports came in from around the state. They include: Douglas County, May 13 (R. Johnson); Manitowoc County, May 13 (J. Steffen); Racine County, May 17 (G. DeBoer); Rock County, May 18 (E. Hansen) and May 23 (D. Tessen); Burnett County, May 18 (J. Hoefler); LaFayette County, May 18 (N. R. Barger) and May 31 (R. Hoffman); Grant County, May 23 (D. Tessen sighted 3 birds); May 24 (T. Schultz); and May 26 (F. Lesher); Dane County, May 25 to 27 (S. Thiessen); and Crawford County, May 26 (E. Merz).

Summer Tanager.—Reported as follows: Dane County, May 7 (E. Hansen) and May 11 (N. R. Barger); and Milwaukee County, May 9 (B. Cowart) and May 11 (S. Diehl).

Scarlet Tanager.—First reported on May 6 in Dane (E. Hansen); Eau Claire (J. Polk); and Sauk (K. Lange) Counties.

Northern Cardinal.—Throughout southern counties; northern counties include: Barron, Burnett, Clark, Dunn, Eau Claire, Marathon, Marinette, Polk, and Taylor.

Rose-breasted Grosbeak.—First reported in Sauk County, April 30 (K. Lange).

Indigo Bunting.—One male bird was reported over-wintering in Calumet County (C. Rudy). No other reports came in until May 2, when it was sighted in Racine County (G. DeBoer).

Dickcissel.—A tremendous number of reports, indicating a wide distribution and a large population this year. First reported in LaFayette County, May 10 (R. Hoffman). Also reported in Dunn, Eau Claire, Grant, Green, Iowa, Polk, Rock, Sauk, Shawano, and Trempeleau Counties. At the end of the period, 18 birds were sighted in Fond du Lac County (B. Volkert) at the Jersey Flats prairie project in the northern Kettle Moraine.

Rufous-sided Towhee.—First reported in Milwaukee County, March 27 (J. Frank).

American Tree Sparrow.—Last reported in Barron County, April 29 (A. Goff).

Chipping Sparrow.—First reported in Ozaukee County, March 26 (M. Bontly).

Clay-colored Sparrow.—First reported in Monroe County, April 25 (E. Epstein). Also reported in Ashland, Barron, Bayfield, Burnett,

Clark, Columbia, Door, Douglas, Dunn, Iron, Jackson, Lincoln, Marathon, Oneida, Ozaukee, Polk, Portage, Sauk, Shawano, Taylor, and Wood Counties.

Field Sparrow.—First reported in Green Lake County, March 26 (T. Schultz).

Vesper Sparrow.—First reported in Rock County, March 14 (D. Tessen sighted 2 birds). Also reported in 29 other counties.

Lark Sparrow.—First reported in Sauk County, May 2 (Jeff Baughman and T. Schultz). Also reported in Dunn County, May 7 (J. Polk); Grant County, May 9 (S. Thiessen); Richland County, May 10 (S. Thiessen); Dane County, May 15 (D. Tessen); Sauk County, May 20 (M. Peterson sighted 3 birds); LaCrosse County, May 23 (F. Lesher); Pepin County, May 23 (D. Tessen); and Burnett County, May 24 (D. Tessen). R. Hoffman found 16 birds in Sauk County during the month of May.

Lark Bunting.—Reported in Fond du Lac County, April 18 (Ken Pruski) sighting a singing male along Zillmer Trail in the northern Kettle Moraine. Also in Ashland County, May 28 (D. Verch sighted 2 birds). Accepted by the Records Committee.

Savannah Sparrow.—First reported on April 10 in Dane (P. Ashman) and Milwaukee (M. Bontly) Counties.

Grasshopper Sparrow.—First reported in Trempeleau County, May 5 (T. Hunter). Also reported in Burnett, Dunn, Door, Fond du Lac, Green Lake, Jackson, LaCrosse, LaFayette, Manitowoc, Monroe, Polk, Ozaukee, Racine, Rock, St. Croix, Sauk, Shawano, and Wood Counties. R. Hoffman found 31 birds in Sauk County in May. Bill Volkert found 30 birds on Jersey Flats in Fond du Lac County.

Henslow's Sparrow.—First reported in Kenosha County, April 19 (S. Diehl). Also reported in Clark, Fond du Lac, Green Lake, Jackson, LaFayette, Manitowoc, Monroe, Outagamie, Ozaukee, Polk, Sauk, Shawano, Taylor, Waukesha, and Wood Counties.

LeConte's Sparrow.—First reported in Taylor County, April 17 (S. Robbins). Also reported in Douglas County, May 6 to the end of period (R. Johnson); and May 25 (D. Tessen); Vilas County, May 13 (Jim Baughman); and May 14 (S. Robbins); Iron County, May 15 (F. Lesher); Oneida County, May 21 (S. Robbins); Burnett County, May 23 (D. Tessen sighted 10 birds); and May 31 (Jeff Baughman); and Ashland County, May 28 (S. Swengel).

Sharp-tailed Sparrow.—Reported in Manitowoc County, April 30 (C. Sontag); and Burnett County, May 23 and 24 (D. Tessen) and May 31 (Jeff Baughman sighted 2 birds).

Fox Sparrow.—First reported on March 7 in Dane (P. Ashman and B. Hilsenhoff), Milwaukee (B. Cowart), and Sauk (S. Swengel) Counties.

Song Sparrow.—Present at the beginning of the period in Dane, Fond du Lac, Manitowoc, and Ozaukee Counties.

Lincoln's Sparrow.—First reported in Sauk County, April 15 (S. Swengel).

Swamp Sparrow.—Present at the beginning of the period in Ozaukee County (Jeff Baughman).

White-throated Sparrow.—Present at the beginning of the period in Dane (B. Hilsenhoff) and Sauk (S. Swengel) Counties.

White-crowned Sparrow.—First reported in Outagamie County, March 23 (Mrs. Fred Tessen).

Harris' Sparrow.—Reported in Douglas County, May 8 and 21 (R. Johnson).

Dark-eyed Junco.—Present at the end of the period in Jefferson (K. Etter Hale) and Vilas (Jim Baughman) Counties.

Lapland Longspur.—Last reported on May 20 in Ashland (D. Verch) and Douglas (R. Johnson) Counties. On May 2, 600 birds were sighted in Dodge County (D. Tessen).

Snow Bunting.—Last reported in Dodge County, April 4 (Jeff Baughman and D. Tessen sighted 50 birds). On March 9, 500+ birds were sighted in Door County (R. and C. Lukes) and on March 10, 1,000 birds were sighted in Shawano County (M. Peterson).

Bobolink.—First reported in Dodge County, April 25 (B. Volkert). Also reported from 41 other counties across the state.

Red-winged Blackbird.—Present at the beginning of the period in Dane, Eau Claire, Green Lake, Marinette, Polk, and Sauk Counties.

Eastern Meadowlark.—Reported at the beginning of the period in Polk County (J. Hudick).

Western Meadowlark.—Reported at the beginning of the period in Polk County (J. Hudick). Also reported in 29 counties during the period.

Yellow-headed Blackbird.—Reported at the beginning of the period in Dodge County (Jeff Baughman).

Rusty Blackbird.—Reported at the beginning of the period in Dane County (B. Hilsenhoff).

Brewer's Blackbird.—First reported in Washington County, March 3 (Jeff Baughman).

Common Grackle.—Present at the beginning of the period in Dane, Dodge, Marinette, Milwaukee, Outagamie, Polk, and Sheboygan Counties.

Brown-headed Cowbird.—Present at the beginning of the period in Milwaukee County (N. Zehner).

Orchard Oriole.—First reported in Sauk County, May 7 (S. Swengel). Also reported in LaFayette County, May 10 (R. Hoffman); Dunn County, May 15 (J. Polk); Walworth County, May 15 (D. Tessen); Columbia County, May 16 (Jeff Baughman); Racine County, May 17 (G. DeBoer); Columbia County, May 20 (M. Peterson); Sauk County, May 20 (M. Peterson); Rock County, May 23 (D. Tessen); Trempeleau County, May 23 (D. Tessen); and Dane County, May 31 (N. R. Barger).

Northern Oriole.—First reported in Polk County, May 2 (J. Hudick).

Pine Grosbeak.—Reported in Iron County at the beginning of the period (M. Butterbrodt) and until March 5 (S. and L. LaValley).

Purple Finch.—Present at the end of the period in Ashland, Barron, Chippewa, Clark, Door, Douglas, Iron, Jackson, Kenosha, Manitowoc, Marinette, Taylor, and Vilas Counties.

House Finch.—Reported at the beginning of the period to March 28 in Dane County (B. Hilsenhoff) where 4 pairs were sighted (F. Freese). Also reported throughout the period in Racine County (G. DeBoer); from March 9 to end of period in Sheboygan County (D. and M. Brasser); May 9 in Milwaukee County (J. Frank); and April 23, LaCrosse County (F. Lesher reported several nesting attempts).

Red Crossbill.—Present throughout the period in Ashland County (D. Verch) and from March 2 to end of period in Vilas County (Jim Baughman). Also reported during the period in Columbia, Douglas, Eau Claire, Forest, Jackson, Juneau, Lincoln, Oneida, Portage, Shawano, Taylor, and Waupaca Counties.

White-winged Crossbill.—Reported at the beginning of the period in Iron County (M. Butterbrodt).

Common Redpoll.—Last reported in Iron County, April 27 (S. and L. LaValley sighted 80 birds). Also reported during the period in Ashland, Barron, Bayfield, Door, Douglas, Dunn, Forest, Jackson, Monroe, Portage, Shawano, Taylor, and Vilas Counties.

Hoary Redpoll.—Reported at the beginning of the period in Douglas County (R. Johnson).

Pine Siskin.—Present at the end of the period in Ashland, Barron, Dane, Door, Douglas, Iron, Jackson, Manitowoc, Sauk, Taylor, Trempeleau, and Winnebago Counties. On April 10 nestlings were found in Waukesha County (S. Diehl).

American Goldfinch.—Present during the period throughout the state.

Evening Grosbeak.—Present at the end of the period in Ashland, Bayfield, Douglas, Iron, Jackson, and Vilas Counties.

House Sparrow.—Present during the period throughout the state.

Contributors

Marjorie Albrecht, Jim Anderson, Phil Ashman, N. R. Barger, Jeff Baughman, Jim Baughman, Lynn and Greg Belanger, Homer Bishop, Marilyn Bontly, David and Margret Brasser, Mary Butterbrodt, David Cedarstrom, Bill Cowart, Gerald DeBoer, Scott Diehl, Eric Epstein, Jim Frank, Alta Goff, Karen Etter Hale, Ellen Hansen, Dorothy Harmer, Judy Haseleu, Bill Hilsenhoff, Jim Hoefler, Randy Hoffman, Nina Honerman, Horicon NWR Staff, R. Hotham, Joseph Hudick, Thomas Hunter, Robbye Johnson, Ada Karow, Roland Kuhn family, Ken Lange, Steve and Laura LaValley, Fred Lesher, Harold Lindberg, Roy and Charlotte Lukes, Gyda Mahlum, Mark Martin, Ed Merz, William Mueller, Patricia Parsons, Mark Peterson, Janine Polk, Mary Raile, Bill Reardon, Carol Richter, Leonard Risch, Nick Risch, Tim Risch, Sam Robbins, Albert Roy, Tom Schultz, Larry Semo, Al and Sue Shea, Ray Smith, Charles Sontag, Tom Soulen, Jim Steffen, Jonathon Sutton, Scott Swengel, Daryl Tessen, Mrs. Fred Tessen, Steve Thiessen, Dick Verch, Melvin Wierzbicki, Dan Williams, Winnie Woodmansee, Norman Zehner and Tom Ziebell.

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Big Day Counts: 1987

by William K. Volkert

All together, 23 Big Day counts were conducted across the state in May. This compares with 24 counts last year and 20 in each of the previous two years. The count period ranged between May 9–27. Group size varied from one to 4 observers. Several of the groups ran more than one count during the month, in an attempt to better their previous count and find the maximum number of birds at the peak of the migration.

(1) Mary Donald and Roger Sundell; May 9, 3:00 A.M.–9:00 P.M., 201 miles by car, 7 miles on foot, 135 species, including Willet and House Finch. Route: Ozaukee County.

(2) Tom and Wendy Schultz; May 10, 3:30 A.M.–7:00 P.M., 310 miles by car, 2 miles on foot, 151 species, including Red-necked Grebe, Common Moorhen, Water Pipit, Worm-eating Warbler, and Lapland Longspur. Route: Grand River Marsh, Baxter's Hollow, Honey Creek, Goose Pond, Grassy Lake, Beaver Dam Lake, AandW Ponds, and Horicon Marsh.

(3) Jim Frank; May 11, 3:45 A.M.–5:30 P.M., 270 miles by car, 3 miles on foot, 142 species, including Willet, Water Pipit, Black-throated Blue Warbler, and Lapland Longspur. Route: Cedarburg Bog, Estabrook Park, Schlitz Audubon Center, Horicon Marsh, and Beaver Dam Lake.

(4) Al and Sue Shea; May 12, 3:10 A.M.–8:45 P.M., 265 miles by car, 4 miles on foot, 174 species, including Red-necked Grebe, Least Bittern, Wild Turkey, Common Moorhen, Hudsonian Godwit, Western Sandpiper, Worm-eating Warbler, Lark Sparrow, Lapland Longspur, and Orchard Oriole. Route: Waunakee Marsh, Mazomanie W.A., Devil's Lake, Baxter's Hollow, Goose Pond, Grassy Lake, Grand River Marsh, and Horicon Marsh.

(5) Jeff Baughman, Scott Baughman, Tom and Wendy Schultz; May 13, 12:00 A.M.–8:30 P.M., 363 miles by car, 4 miles on foot, 175 species, including Red-necked Grebe, Least Bittern, King Rail, Common Moorhen, Willet, Whimbrel, Hudsonian Godwit, White-rumped Sandpiper, Worm-eating Warbler, Lark Sparrow, and Lapland Longspur. Route: Grand River Marsh, Mud Lake, Honey Creek, Baxter's Hollow, Arlington Prairie, Grassy Lake, Beaver Dam, Kettle Moraine, and Manitowoc.

(6) Daryl Tessen; May 15, 5:45 A.M.–6:00 P.M., 310 miles by car, 3 on foot, 138 species, including Common Moorhen, Hudsonian Godwit, White-eyed Vireo, Worm-eating Warbler, Lark Sparrow, and Orchard Oriole. Route: Lake Geneva, Walworth and Rock Counties, Arlington ponds, Mud Lake, Baxter's Hollow, Babcock, and Marshfield.

(7) Jerry DeBoer; May 16, 1:00 A.M.–8:00 P.M., 139 species, including Least Bittern, Hudsonian Godwit, Stilt Sandpiper, Yellow-bellied Sapsucker, Kentucky Warbler, and House Finch. Route: Racine and Kenosha Counties.

(8) Jeff Baughman, Tom and Wendy Schultz; May 16, 12:00 A.M.–7:30 P.M., 375 miles by car, 4 miles on foot, 164 species, including Red-necked Grebe, King Rail, Common Moorhen, Hudsonian Godwit, Long-eared Owl, Worm-eating Warbler, Lark Sparrow, and Orchard Oriole. Route: Grand River Marsh, Grassy Lake, Mud Lake, UW Arboretum, Baxter's Hollow, Beaver Dam Lake, northern Kettle Moraine and Manitowoc.

(9) Jim Frank; May 16, 3:45 A.M.–7:00 P.M., 315 miles by car, 3 miles on foot, 137 species. Route: same as May 11.

(10) Bernie and Jon Brouchoud; May 17, 3:30 A.M.–9:00 P.M., 134 miles by car, 5 miles on foot, 132 species, including Common Moorhen, Whimbrel. Route: Manitowoc, Woodland Dunes, Balsam Woods, and other sites in Manitowoc County.

(11) Kevin Glueckert, Charlotte and Roy Lukes and Jack Rudolph; May 17, 4:30 A.M.–9:30 P.M., 189 miles by car, 1 mile on foot, 115 species. Route: Door County.

(12) Karl Legler and Mark Peterson; May 19, 2:00 A.M.–10:00 P.M., 458 miles by car, 1 mile on foot, 137 species, including Hudsonian Godwit, and Snowy Owl. Route: Shawano County, Atkinson Marsh, Manitowoc, and Columbia County.

(13) Larry Semo; May 20, 5:45 A.M.–12:30 P.M., 41 miles by car, 1 mile on foot, 138 species, including White-winged Scoter, Merlin, Red Knot, Yellow-bellied Flycatcher, Water Pipit, and LeConte's Sparrow. Route: 107 species at Wisconsin Point alone, then a 15-mile radius around Superior.

(14) Mary Donald and Roger Sundell; May 21, 3:30 A.M.–9:00 P.M., 361 miles by car, 9 miles on foot, 126 species, including Red-necked Grebe, Common Moorhen, Bell's Vireo, Worm-eating Warbler, Yellow-breasted Chat, Lark Sparrow, and Orchard Oriole. Route: Horicon Marsh, Grassy Lake, Arlington Ponds, Sauk County, and Governor Dodge. (15) Dorothy Harmer and Tim Risch; May 22, 6:00 A.M.–8:30 P.M., 30 miles by car, 76 species. Route: Taylor County.

(16) Daryl Tessen; May 23, 5:00 A.M.–9:30 P.M., 435 miles by car, 2 miles on foot, 162 species, including Red-necked Grebe, Eared Grebe, Little Blue Heron, Yellow Rail, Red-necked Phalarope, White-eyed Vireo, Yellow-throated Warbler, Kentucky Warbler, Yellow-breasted Chat, Lark Sparrow, Sharp-tailed Sparrow, and Orchard Oriole. Route: Sugar River, Cadiz Springs, Yellowstone Lake, Wyalusing, Trempeleau NWR, Fish Lake, and Crex Meadows.

(17) Nick, Debbie, Paul and Tim Risch; May 23, 4:50 A.M.–10:30 P.M., 284 miles by car, 3 miles on foot, 138 species, including Greater Prairie Chicken. Route: Mead W.A., Eau Plaine Flowage, Pershing W.A., Che-

quemagon Forest, and other sites in Marathon, and Taylor Counties.

(18) John Woodcock; May 23, 4:30 A.M.–10:30 P.M., 241 miles by car, 5 miles on foot, 136 species, including Common Moorhen, and 24 Whimbrels. Route: Manitowoc, Woodland Dunes, Collins Marsh, Green Bay, Atkinson Marsh, and Oconto Marsh.

(19) Al and Sue Shea; May 24, 1:20 A.M.–8:45 P.M., 358 miles by car, 3 miles on foot, 168 species, including Least Bittern, Mute Swan, Surf Scoter, Greater Prairie Chicken, Yellow Rail, Red Knot, Black-backed Woodpecker, Lark Sparrow, LeConte's Sparrow, and Purple Finch. Route: Crex Meadows, Stone's Bridge, Solon's Springs, St. Croix Flowage, Fish Lake, Three Lakes, and Willow River.

(20) Daryl Tessen; May 24, 4:00 A.M.–8:30 P.M., 325 miles by car, 4 miles on foot, 160 species, including American White Pelican, Cattle Egret, Tundra Swan, Black Scoter, Surf Scoter, Greater Prairie Chicken, Sharp-tailed Grouse, Red Knot, Parasitic Jaeger, Lark Sparrow, LeConte's Sparrow, Sharp-tailed Sparrow, Red Crossbill, and Evening Grosbeak. Route: Crex Meadows, Fish Lake, Gordon W.A., Stone's Bridge, Ashland, and Wisconsin Point.

(21) Larry Semo; May 25, 4:00 A.M.–6:00 P.M., 137 species, including Tundra Swan, Mute Swan, White-winged Scoter, Black-backed Woodpecker, and LeConte's Sparrow. Route: Douglas County.

(22) Dave Bratley, Ken Lange and Albert Roy; May 26, 8:30 A.M.–5:30 P.M., 70 miles by car, 1 mile on foot, 101 species, including Mute Swan and Evening Grosbeak. Route: Bayfield County.

(23) Robbye Johnson; May 27, 2:54 A.M.–9:00 P.M., 173 miles by car, 1 mile on foot, 149 species, including Red-throated Loon, Tundra Swan, Mute Swan, Surf Scoter, Peregrine Falcon, Red Knot, White-rumped Sandpiper, Black-backed Woodpecker, LeConte's Sparrow, and Evening Grosbeak. Route: Upper Brule, Upper St.Croix, various bogs in Douglas County, Wisconsin Point, and St. Louis Bay.

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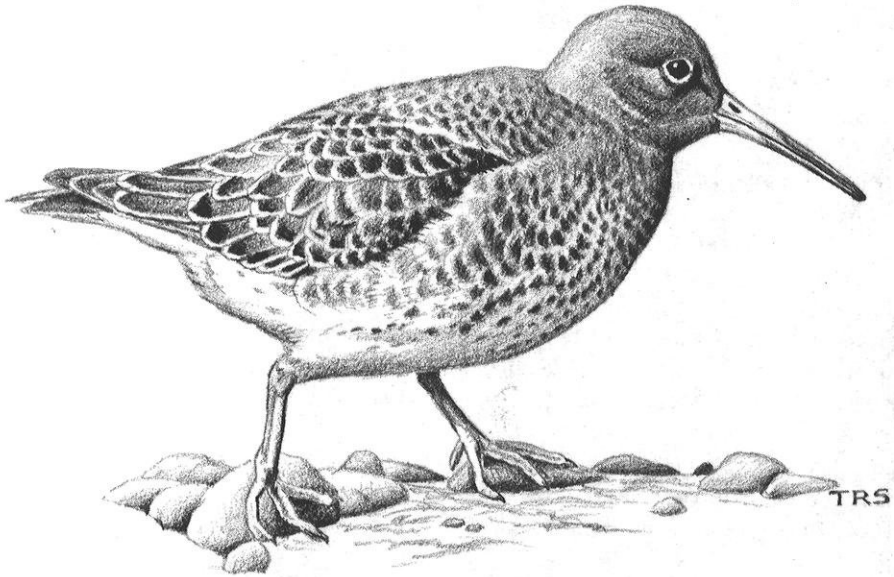

Purple Sandpiper *by Thomas R. Schultz*

May Day Counts: 1987

by William K. Volkert

There were 19 May Day counts reported for the season, which is fewer than in previous years. The majority of the counts were conducted on May 9th, the second Saturday of the month. Many of the others were run on the following weekend, with a few of the more northerly counts being conducted towards the end of the month, allowing the migrants to better represent themselves. Five of the counts had more than 150 species, and all of them seemed to have had a good spring count. Some of the trends that may have hindered finding more birds have already been alluded to in the introduction to the seasonal summary. Listed below are the results of the May Day counts for the year.

Ashland County.—May 20, 4:00 A.M.–4:00 P.M., 14 observers, 4 parties, 153 species, including American White Pelican, Mute Swan, Black Scoter, Surf Scoter, Hudsonian Godwit, Marbled Godwit, Lapland Longspur, and Evening Grosbeak. Compiler, Dick Verch.

Brown County.—May 9, 6:00 A.M.–7:30 P.M., 121 species, including Cattle Egret and Common Moorhen. Compiler, Virginia Amen.

Western Burnett County.—May 21, 4:20 A.M.–8:20 P.M., 2 observers, 1 party, 122 species, including Red-necked Grebe, Tundra Swan, Peregrine Falcon, Greater Prairie Chicken, Sharp-tailed Grouse, Yellow Rail, Whimbrel, Marbled Godwit, and LeConte's Sparrow. Compiler, Jim Hoefler.

Calumet County.—May 9, 5:30 A.M.–8:00 P.M., 5 observers, 3 parties, 112 species, including Red Knot, and Red-necked Phalarope. Compiler, Carol Rudy.

Fond du Lac County.—May 9, 5:00 A.M.–5:00 P.M., 19 observers, 4 parties, 121 species, including Red-necked Grebe and Northern Mockingbird. Compiler, Tom Schultz.

Lake Geneva.—May 9, 4:00 A.M.–9:00 P.M., 6 observers, 3 parties, 104 species, including Common Moorhen. Compiler, G. M. Culp.

Horicon Marsh.—May 9, 4:00 A.M.–3:15 P.M., 8 observers, 5 parties, 113 species, including Common Moorhen, Northern Mockingbird, Water Pipit, and Lapland Longspur. Compiler, Dottie Thompson.

Milwaukee/Ozaukee.—May 9, 3:00 A.M.–9:00 P.M., 7 observers, 155 species, including Merlin, White-eyed Vireo, Prairie Warbler, Summer Tanager, and House Finch. Compiler, Mary Donald.

Oconomowoc.—May 10, 5:30 A.M.–7:00 P.M., 13 observers, 6 parties, 119 species, including Wild Turkey and Tufted Titmouse. Compiler Ed Peartree.

Oxbo-Fifield.—May 16, 6:00 A.M.–10:00 P.M., 23 observers, 18 parties, 100 species, including 13 Bald Eagles, 3 Rough-legged Hawks, Black-backed Woodpecker, Gray Jay, and Evening Grosbeak. Compiler, Maybelle Hardy.

Plymouth.—May 9, 4:30 A.M.–4:00 P.M., 15 observers, 9 parties, 156 species, including Cattle Egret, Peregrine Falcon, Common Moorhen, Red Knot, Stilt Sandpiper, and Evening Grosbeak. Compiler, Harold Koopmann.

Portage County.—May 9, 4:30 A.M.–7:00 P.M., 23 observers, 9 parties, 132 species. Compiler, Vincent Heig.

Racine/Kenosha.—May 16, 12:00 A.M.–9:00 P.M., 12 observers, 5 parties, 151 species, including Common Moorhen, Hudsonian Godwit, Stilt Sandpiper, Kentucky Warbler, and Yellow-breasted Chat. Compiler, Jerry DeBoer.

Shawano County.—May 19, 2:00 A.M.–9:00 P.M., 6 observers, 128 species. Compiler, Mark Peterson.

Taylor County.—May 25, 3:50 A.M.–9:00 P.M., 9 observers, 5 parties, 115 species, including Sharp-tailed Grouse. Compiler, Nick Risch.

Waukesha County.—May 9, 6:00 A.M.–1:00 P.M., 14 observers, 7 parties, 103 species, including Rough-legged Hawk. Compiler, Robert Adams.

Wausau.—May 17, 4:00 A.M.–6:30 P.M., 11 observers, 6 parties, 121 species, including Tundra Swan and Greater Prairie Chicken. Compiler, Duane Goetsch.

Winnebago County.—May 9, 4:41 A.M.–9:00 P.M., 20 observers, 12 parties, 158 species, including Red-necked Grebe, Little Blue Heron, and Lapland Longspur. Compiler, Tom Ziebel.

Woodland Dunes.—May 16, 4:30 A.M.–8:00 P.M., 13 observers, 8 parties, 129 species, including House Finch. Compiler, Bernie Brouchoud.

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"By The Wayside"

Clark's Grebe, White-faced Ibis, Black-shouldered Kite, Black-necked Stilt, Curlew Sandpiper, Ruff, and Least Tern were the highlights of the spring season.

As mentioned in the seasonal summary, the Clark's Grebe sighting is Wisconsin's first record, but it has been accepted as only hypothetical by the records committee since there were no other documentations. Other unusual birds, particularly the White-faced Ibis and Black-shouldered Kite, were seen by dozens of observers and documented by many of them. The following are some of the most concise and vivid descriptions of these observations.

CLARK'S GREBE (*Aechmophorus clarkii*)

7 May 1987, Douglas County, St. Louis Bay, Lake Superior.—About 5:00 P.M. from 40th Ave. West, Duluth, MN, I scanned the St. Louis Bay with my binoculars and saw 5 Western Grebes along the opposite shore (Wisconsin side). I drove home to call another birder and then drove to the coal dock on the Wisconsin side. During this time the grebes had moved to the Minnesota side. Visibility was poor from there, with the sun in my eyes, but one grebe looked smaller and lighter, so I made another trip to Duluth. This time the grebes were closer to the middle of the bay, somewhere near the state line. By this time it was 6:30 P.M., and I went home where I got a call from Kim Eckert who had found a Clark's Grebe at 40th Ave. At 8:00 P.M., when I returned, there was very good light with the sun low behind me. Several local birders were there with the 5 grebes in view, closer than I had seen them. Through a 40× scope, I saw the following field marks: smaller overall by at least an inch or more than the other 4 grebes, its body slightly lighter gray. It had the same basic swan-like, long-necked body shape. The top of its head was black; the throat, neck, cheek and chest were white. The bird showed more white on the cheek than the other grebes. Black did not cover the area directly behind the bill, as on the other grebes. White extended from the base of the bill, curving up and over the eyeline, giving the white a rounder look. The black line running down the back of the neck was much thinner than on the other 4 grebes. The bill appeared to be slightly smaller or shorter than the others and had a distinct orange cast, not pale yellow, like the others. We watched them until dark.

The grebes stayed in a tight group, making comparison easy. *Robbye Johnson, 2602 N. 28th St., Superior, WI 54880.*

White-faced Ibis (*Plegadis chihi*)

23 April 1987, Dodge County, Horicon Marsh.—I arrived at Horicon Marsh, on Ledge Road about 200 yards west of Point Road, at 5:30 P.M.. I immediately located a *Plegadis* ibis species feeding in shallow water at the edge of the marsh, north of the road. The sun was to my left, and viewing was excellent. The following identifying features were logged at the time of observation (5:30 to 6:15 P.M.). Bill was a long, decurved "Ibis" bill. Color was slate-gray, indicating a bird not in full breeding plumage. The iris was red, not brown as in Glossy Ibis. Between the base of the bill and the eye, the bare facial area was red, indicating the White-faced Ibis. The legs and feet were red, with a slight cast of pink. The head had a rich chestnut color. The crown showed a hint of iridescent green. White feathers form a complete broad border around the red facial area, behind the eye, above and below the base of the bill. The neck, breast, belly and back were rich chestnut color. The folded wings were iridescent green and purple along with the chestnut base color. *Jeff Baughman, P.O. Box 343, Kewaskum, WI 53040.*

24 April 1987, Dodge County, Horicon Marsh.—My wife Marillyn and I stopped in mid-afternoon at several places in Horicon Marsh, the last of them along Ledge Road. Upon reaching the bottom of the hill, we saw in the open area among the cattails north of the road what appeared to be a dark, medium size heron. A look with 7×35 binoculars revealed a long bill (several times the length of the head) with a strong downward curvature, especially along the outer half of its length, and we knew we were looking at an ibis. The bird was several hundred yards NNE of us, and with the sun west of us in a mostly cloudles sky, the lighting was excellent. With the aid of a 30×75 scope we could see a very prominent light line outlining the region near the base of the bill. In a side view the line went from the area above the top of the base of the bill back to the eye, then down to the area below the bottom of the base of the bill. Although the line looked basically white, our impression was that it had a slight pinkish cast to it. Although we had never seen an ibis at close range and happened to be without any field guides, we suspected this was a White-faced Ibis. The plumage was strongly iridescent. At times the head and neck showed purple and the wings greenish, but at other times a coppery color was evident. The colors changed with the orientation of the bird. The bill appeared to be bluish-gray. On several occasions we could see that the upper portions of the legs were a definite rose color. We were able to establish not only that the white line on the face was generally wide but that its width was uniform. In side view there was no hint of its becoming more narrow as it approached the base of the bill. We later learned that several ibises had been present at that location, and at least some were thought to be White-faced. When we were finally able to consult field guides, we concluded that we had, indeed, seen a White-faced Ibis. We also discovered that a possible reason for the white facial line having appeared pink may have been that it was adjacent to the patch of pink or maroon bare facial skin that is present at the base of the bill

in breeding plumage. *Tom Soulen, 1725 Eldridge Avenue, St. Paul, MN.*

2 May 1987, Dodge County, Horicon Marsh.—We found 2 individuals north of Ledge Road in shallow, marshy ponds near cattails. They were both actively probing with their bills and feeding. The first bird was 20 to 25 inches in length and had a long decurved bill, 6 to 8 inches in length. The bill was grayish-brown in color. The head was a dark chestnut brown, as was the neck, upper back and breast. The wings and lower back were a glossy, iridescent, greenish-blue-purple. The legs were about the same length or a bit longer than the legs of a Snowy Egret, as was the neck. There was a bright white line over the top of the bill, around behind the eye and under the bill. I saw this from both sides. I did not see the eye color. The second bird, much farther away, looked to be the same in respect to color and pattern of plumage and size. I did not, however, see as distinct of a white line above, behind and below the bill. I would have to identify this individual as a *Plegadis* ibis. The identification of the first individual as a White-faced Ibis was easy by comparison. *William Mueller, 1244 S. 45th St., Milwaukee, WI 53214.*

Black-shouldered Kite (*Elanus caeruleus*)

16 May 1987, Wood County, 20 miles SE of Marshfield.—I was called on Friday night of a possible sighting of a Black-shouldered Kite by a friend Dennis Seevers. After the field trip on Saturday, Steve Rehnhack and I decided to go and check. We found the bird sitting at the top of a dead aspen tree. The overall appearance was white trending to a cloudy white or grayish-white black. It had a red eye, seen with a 60× Balscope. It looked like a male Northern Harrier with no facial disk. At the shoulder of each wing was a dark black patch about 2 inches by 4 inches in size. The tail was white. The eye orbit had a dark outline, giving the bird a slightly masked appearance. Legs were yellow; bill was black. General size about like a Northern Harrier, and may have been a bit smaller. Wingspan about 30 inches to 3 feet. Falcon-shaped wings, and in flight very buoyant. Dark spot on underside of wing near bend of wing. Flight very tern– or gull-like. When hitting prey, it hovered and kited, tipped wings into a large V, and settled onto prey. Overall, undersurface appeared to be mainly white but with some darker gray in primaries. It was very aggressive to other raptors. *Don Follen, 9201 Rock Inn Rd., Arpin, WI 54410.*

16 May 1987, Wood County, 20 miles SE of Marshfield.—At about 4:00 P.M., at the conclusion of the afternoon paper session at the WSO Convention, a special announcement was made. A Black-shouldered Kite had been sighted off Lundberg Rd. about 20 miles SE of Marshfield, and a caravan was being organized immediately. When we arrived the kite was perched on a post about 1/8 mile away. The size was between that of a crow and a harrier. It had a very light gray to white head with black surrounding the eye in a sort of teardrop shape. There was a black shoulder patch (less black showed ventrally when he flew). The back was light gray. The wings were a darker or medium gray on both surfaces. It had a white tail, was completely white beneath, and had large yellow legs and feet. It took off into a strong SW wind and hovered over the grassland, much as a kestrel would, but with less flapping, often holding its legs down. The

kite caught something small and went back to the perch to eat it. It flew a second time, hovered very steadily in the wind, caught something on the ground, and went back to the post to eat. It was still on the post an hour later when we left. *Karen Etter Hale, 517 Tower St., Lake Mills, WI 53551.*

16 May 1987, Wood County, 20 miles SE of Marshfield.—As the afternoon paper session of the WSO Convention neared completion it was announced a Black-shouldered Kite had been found. The Luepkes organized a field trip, and some 70 of us raced to the area south of Sherry. For one hour it put on a fantastic show. Initially, the kite was on a fence post, but it took flight, hovering over an adjacent field until it spotted prey and dove. It did this twice, returning to the same post to eat; first an insect and then a vole. The head was white; the back, wings and inner tail were gray. The outer tail and breast were white. An obvious large black patch was visible on the upper wing, while perched and in flight. The bill was black, the feet yellow, and after considerable debate, due to poor lighting, we decided the eyes were red. In flight the wings were pointed and curved, as a falcon. *Daryl Tessen, 2 Pioneer Park Pl., Elgin, IL 60123.*

Black-necked Stilt (*Himantopus mexicanus*)

24 May 1987, Columbia County, Schoeneberg Marsh.—Black and white, long-legged wader with red legs. Solid black back, with white breast and belly. long thin bill, sharply pointed. White above and behind eye. Black on neck observed. While present, the bird was very skittish. It raised its wings twice, so black underwing lining was observed. It was sighted in flooded farm field, near marsh, resting on edge of water. Distance was about 75 feet, sky was gray and overcast. *Daniel Williams, 1619 Westchester, Rockford, IL 61107.*

24 May 1987, Columbia County, Schoeneberg Marsh.—After a number of us had seen the Curlew Sandpiper on Harvey Rd. we scattered out to check other ponds in the area. Very shortly, word got around that a Black-necked Stilt had flown into the pond with the sandpiper – and just as quickly departed. The hunt was on. It was eventually relocated by Roger Sundell. I made these notes while observing the bird: medium-size wading bird with smallish head, long neck, very long reddish legs, black on crown, down around eyes, back of neck, mantle, with black extending slightly down onto sides at base of neck. Foreneck, base of bill, entire ventral surface, tail and rump, extending up onto back, were white. Bill straight, needle-like. Light around eye, underwing entirely black. *Bill Cowart, 4034 N. 45 St., Milwaukee, WI 53216.*

24 May 1987, Columbia County, Schoeneberg Marsh.—At about 9:30 A.M., four of us were scoping a small pond at the corner of Harvey Road and Priem Road in Columbia County, trying to locate a Curlew Sandpiper that had just flown to the west end of the pond. Suddenly, a Black-necked Stilt appeared in my scope, and the Curlew Sandpiper was (almost) forgotten in the excitement. The stilt was absolutely unmistakable: a very tall, long-legged, large, slender-bodied shorebird, continuous black on approximately the upper half of the head, nape, back and wings, and immaculately white everywhere else. The black on the head ended short of the bill and came down below the eyes (there was a little white around

the eyes also). The bill was black, medium length, thin and straight, and the legs were pink and very long. After less than a minute the stilt flew off to the north. In flight the bird displayed black underwings and I got a quick glimpse of the white rump and wedge up the back. The long trailing pink legs were distinctive. *Janine Polk, 1407 Fredric, Eau Claire, WI 54701.*

Curlew Sandpiper (*Calidris ferruginea*)

23 May 1987, Columbia County, Harvey Road.—A carload of us were birding Grassy Lake when Dar Tiede drove up and mentioned having seen what he thought to be a Curlew Sandpiper. He pointed to the location on a map which I recognized as being a shallow farm field pond on Harvey Road. We hastily drove to that area and upon arriving spotted the bird almost immediately. It was feeding almost belly-deep in the water in the company of 30–40 Dunlins. I was able to approach to within about 100 feet and spent more than an hour carefully observing it with a scope and attempting to get photographs. This bird was very similar in size to the Dunlins. The body shape was also similar except the neck was longer. Bill: the slight downward curve was more gradual along the entire length than in the bill of a Dunlin. The bill was slightly thinner in profile along its entire length than in the Dunlin. The Curlew Sandpiper plumage was striking in contrast to the Dunlins, being a fairly bright chestnut-red or russet on the head, neck, breast, flanks and belly—extending to and slightly behind the legs. The reddish coloration was somewhat patchy on the flanks, where it dissipates into the white of the undertail coverts, which were lightly spotted with black flecks. There was a ring of whitish feathering around the base of the bill, which also extended to and over each eye. A darker patch, consisting of mottled feathers was present on the forehead and crown. The hindneck was clear chestnut. Dark brown mottling was present on the mantle and scapular feathers, with a background color of chestnut-red. *Tom Schultz, Rt. 2 Box 23, Green Lake, WI 54941.*

24 May 1987, Columbia County, Harvey Road.—I arrived at this large muddy spring pond where the bird had been found the previous afternoon. I was soon joined by Jeff Baughman and Roger Sundell. Jeff finally found the bird feeding in some muddy potholes, where the bird seemed to prefer to spend most of its time. It was less than 80m away and in good light. Size: slightly larger than Dunlins, longer necked. Bull: shorter than Dunlin, more evenly decurved. Upper belly, breast, neck, face and crown ruddy red (slightly striped appearance on crown). Lower belly and lower flanks white, with some speckling on flanks. Mantle: dark golden, mottled like Golden Plover. Upper back: longitudinally striped on gold-brown. Light supercillary line to just behind the eye. White at base of bill. Broad light wing stripe under-tail barred, white rump. Legs and bill dark, had a "broad-breasted" look. *Bill Cowart, 4034 N. 45 St., Milwaukee, WI 53216.*

Ruff (*Philomachus pugnax*)

11 April 1987, Columbia County, Goose Pond.—A male Ruff was observed on the mudflats of the eastern pond at Goose Pond. It was feeding very actively, pecking at the mud and the waters edge. I observed it for about 20 minutes as it foraged; it then flushed and flew to the

northeastern corner of the pond where it landed and disappeared from view. Field marks noted were: a medium-large size shorebird, taller and more robust than a nearby Lesser Yellowlegs. Bright orange legs and feet, darkish bill, slightly down curved and a bit longer than the length of the head. Blackish face and head with the black extending down the nape to the upper back. Buff-chestnut chin, throat and upper breast; black on sides of breast, flanks (mottled with white) and extending across the upper belly. White lower belly and vent, brown back, generally with some chestnut. Wings were brown. I did not see it extend its ruff, but I could see that those feathers puffed out a bit from the head and upper body. *Phil Ashman, 2114 Bascom St., Madison, WI 53705.*

2 May 1987, Dodge County, A W Ponds.—While trying to re-locate a Golden Plover, I moved to the northwestern corner of the ponds (Breezy Point Rd. and Cty. A). Scanning the stubble field I discovered a medium sized dark bird that I did not immediately recognize. Upon further examination it proved to be a breeding plumaged Ruff. The bird was all brown, except for rust when it displayed. The primaries, lower back and tail were brown speckled. In flight the white underwings, white undertail and rump were noted. The bird displayed almost constantly to adjacent Pectoral Sandpipers in the half hour I enjoyed it. Upon returning an hour later, I found it had moved closer to the road and was alternatingly sleeping and preening. *Daryl Tessen, 2 Pioneer Park Pl., Elgin, IL 60123.*

Least Tern (*Sterna antillarum*)

28 May 1987, Dunn County, B Pond east of Menominee.—I arrived about 8:45 A.M. and immediately noticed a small tern flying around and diving. I got the tern in the scope and could see that it was light gray above, white below and had a black cap. The upper surface of each wing had a wedge of dark gray running up the outer couple primaries that contrasted sharply with the pale gray of the rest of the wing. The underside of each wingtip had an area of dark gray corresponding with the dark gray on the upper side. Wingbeats were fast but not excessively so. I was just close enough to see the white forehead and yellow bill, but I could not see the black tip on the bill or any details of the tail shape. The bird was very small, and it even appeared to be slightly smaller than the numerous Yellow-headed Blackbirds flying around. *Janine Polk, 1407 Fredric, Eau Claire, WI 54701.*

30 May 1987, Columbia County, Otsego Marsh.—Three other birders besides myself watched the bird flying and feeding for about 40 minutes. Besides the small size, details noted were a white forehead and a black cap with a black line extending forward from the rear half of the cap through the eye to the base of the bill. The narrow bill was yellow except for ⅕ of the length at the tip which was black. The upper wing surface and back were light gray except for a dark margin extending from the middle to the tip of the wing along the leading edge. This mark was smudgy, not as sharply outlined as shown in the National Geographic field guide. It widened out somewhat near the tip of the wing. Underwings were paler but showed the same dark line (even less well defined) along the forward edge of the primaries. The forked tail and undersides of the body were dirty white. Except when hovering, the bird seemed very

short-tailed to me. *Frank Freese, 2324 Kendall Ave., Madison, WI 53705.*

30 May 1987, Columbia County, Otsego Marsh.—After leaving the wooded area of the property, we walked north along Old F to look over the pond when I spotted a small tern flying towards us. I noted a black cap, white forehead, white body and gray upper wings with a dark edge. We watched it flying over the pond for the next 15 to 20 minutes. When it finally returned, we noticed the yellow bill. Full credit goes to Frank Freese for immediately identifying the bird. *Al Holzheuter, 1621 Laurel Crest, Madison, WI 53705.*

American Bittern *by Karen Birgit Christiansen*

ABOUT THE AUTHORS AND ARTISTS

Karen Birgit Christiansen is an undergraduate student at UW-Madison, majoring in wildlife ecology and art. Her career in bird art is just getting started, and the drawings in this issue are her first published work.

Scott R. Craven is an Associate Professor and Extension Wildlife Specialist in the UW-Madison's Department of Wildlife Ecology. Scott is well known among naturalists around the state because of his extension publications and frequent radio shows. He is particularly interested in urban wildlife and wildlife damage problems.

Charlene "Charlie" Gieck is a Nongame Biologist with the Wisconsin DNR's Bureau of Endangered Resources, where she has been involved in preparing "recovery plans" for 5 endangered species in Wisconsin. She is concurrently working on her undergraduate degree in Wildlife Ecology at the UW-Madison.

William L. Hilsenhoff is a Professor in the UW-Madison's Department of Entomology. He has been an active member of WSO over the years, serving as a seasonal Field-note Compiler and contributing annual summaries of the Christmas Bird Counts around the state. He is a recipient of WSO's "Silver Passenger Pigeon" award.

John H. Idzikowski, our current President, is a Laboratory Manager and Lecturer in Ornithology at the UW-Milwaukee. He has been a past Field-note Compiler and Chairman of the Records Committee. John describes himself as a "perpetual graduate student" in search of an advanced degree.

Kenneth I. Lange has been the Naturalist at Devil's Lake State Park since 1966. He has a master's degree from the University of Arizona. Ken has been a frequent contributor to WSO publications: as a Field-note Compiler, *Passenger Pigeon* author, and coauthor of *Breeding Birds of the Baraboo Hills, Wisconsin.*

Paul E. Matthiae is the Assistant Natural Areas Coordinator in the Wisconsin DNR's Bureau of Endangered Resources. He has a master's degree in botany from the UW-Milwaukee. He is responsible for the 216 State Natural Areas that will be featured in the series on bird habitats in Wisconsin.

Michael J. Mossman is a Nongame Research Biologist in the Wisconsin DNR's Bureau of Research. He has a master's degree in wildlife ecology from the UW-Madison and is the coauthor of *Breeding Birds of the Baraboo Hills, Wisconsin*, a major WSO publication. Many WSO members know Mike as the coordinator of various bird surveys around the state.

Thomas R. Schultz is a well-known Wisconsin bird artist who serves as WSO's Field Trip Chairman and Assistant Editor for Art. His work has appeared in many shows, including the prestigious "Birds in Art" exhibition at the Leigh Yawkey Woodson Art Museum. He was an illustrator of the National Geographic Society's *Field Guide to the Birds of North America.*

Stanley A. Temple is the Beers-Bascom Professor in Conservation in the UW-Madison's Department of Wildlife Ecology. He is Editor of *The Passenger Pigeon* and WSO's Research Committee Chairman. He coordinated the Wisconsin Checklist Project and coauthored the resulting book, *Wisconsin Birds: A Seasonal and Geographical Guide.*

William K. Volkert is one of our four hard working Field-note Compilers, and he is the Chairman of WSO's Education Committee. Bill is a naturalist at Marsh Haven Nature Center at Horicon Marsh. His interests in glacial events have lead to studies in the arctic and in Kettle Moraine State Forest.

Jonathan Wilde is a long-time WSO member and an active participant in ornithological research around the state. His reputation as one of Wisconsin's premier bird artists is well deserved. He has been a professional artist for 18 years, and his work has appeared in 8 of the 11 "Birds in Art" exhibitions in Wausau.

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