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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 Vol. 50, No. 1, 1988, as a general guide to style.

President's Statement

New Horizons

I recently opened a fortune cookie that revealed I would do well to expand my horizons. I often wonder how these pearls of inner vision can be used to refresh the soul, but this seemed one that was appropriate. As a birder, the way to expand one's horizon could be easily accomplished by attending the Annual Convention. This year's Convention will be in Marinette, and will be hosted by the Chapee Rapids Audubon Society and the University of Wisconsin Center/Marinette County. Dr. Wendel Johnson and his Committee have planned an exciting program for the Society, and assure us that the birds will be in full migratory dress for us when we arrive. Plan to make this a part of your spring birding experience and enjoy the exciting pre-convention trip to Whitefish Point. Certainly this and the workshops, field trips, paper/business sessions and seeing friends and associates will expand everyone's horizons. In so doing, you will also be part of the success that will be enjoyed by everyone.

The Breeding Bird Atlas Project is very rapidly taking form. In less than one year, the project has gone from dreams and conversation to reality. The project has captured the interest of Wisconsin birders with the enthusiasm and the purpose that it deserves. Hard work has brought the project this far, but hard work and monetary support will be needed to complete the project. The monetary commitment has been hard to garner, but those that are controlling the purse strings should now be forced to the reality of this project. Up to now, the project has relied more on the generous and loyal support of the volunteers. Printing costs for the maps and report forms, however, must be paid regardless of how generous the support from the volunteers has been. WSO has given to this initial startup, and it is hoped that the other agencies that had expressed interest in the project will follow suit. Regardless of how the project is handled, your help at every level will assure that the dream does become reality.

A rather eye catching bumper sticker read "change is the only constant." As our society lives with that bit of philosophical irony, those that serve on the WSO board also change. It is no secret where the WSO board comes from, it comes from people like you. Each possess their own special talents that provides this Society with its rich diversity. But, there are some members that are bashful, and their talents are unknown. Recently Jenni Nieland became the new *Badger Birder* Editor and board member, and a new Vice President will be elected shortly. If you are hoping to be part of this "constant called change," please be sure to eat your powdered milk biscuits and make your talents and willingness to serve the Society known. We too are looking for a "few good people."

And, with a new *Badger Birder* Editor, that means Randy Hoffman will be taking a well deserved break from the busy WSO schedule. His contributions to WSO and the Board have always been insightful and with the best interests of the Society as the goal. This man with a big heart will be missed until his promised return, hopefully as brief or transient as the migratory excursions of the woodland warblers.

The crow hunting season has reared it "ugly" head again, just like the Navy's ELF communication project to its submarines. Some things just seem to be destined to repeat themselves, and the crow hunting season is just one of them. At least this didn't come back under an alias. It is surprising to this writer that, at a time of ecological awareness and sensitivity about the environment, that some animals can be labeled as worthless or expendable just for sport. A much more appropriate interpretation of "to have dominion over" was given to me by Marlin Johnson when he suggested that we have responsibility for living things, especially those that would be exploited for whatever reason. Although this will not be read in time for you to attend the DNR/County Conservation Congress Spring Meetings, your interest as a protector of birds can be heard by writing the DNR, the Natural Resources Board and your State Legislator. This kind of voice can help defeat this proposal again which, according to the thinking of some, may be the testing ground for a larger agenda that includes a Mourning Dove season.

I am not sure how this letter has helped to broaden the horizons of the Society's membership. Perhaps horizons are expanded only by experience and action. With that in mind, participation in all of the Society's activities is highly recommended, and especially by attending the annual convention in Marinette. Help those that have planned for this occasion make it a huge success.

President

The 1994 Wisconsin Christmas Bird Counts

The 1994 Christmas Bird Counts set a new record for numbers of species, 147. The previous record of 141 was set in 1974. A total of 85 counts were taken by a record number of participants.

by William L. Hilsenhoff

The 1994 Wisconsin Christmas Bird Counts were fabulous, perhaps the best ever, with the 147 species eclipsing the 1974 record of 141. Two additional species were obviously present, but could not be identified; these were 13 meadowlarks and a shorebird, which was probably a species of yellowlegs. At least 21 species occurred in record numbers, and most others were present in above normal numbers. Waterfowl and hawks were especially abundant. Only blackbirds, some winter finches, and a few other birds were scarce.

Everything was almost ideal for the counts. Above average temperatures from September through December kept many lakes and most rivers open, and allowed lingering migrants to remain. There was substantial snow cover on many counts to drive birds to feeders, roadsides, and streams, where they could be easily counted. Weather during the count period was very favorable, with relatively warm temperatures and very light winds, especially during the first three days when 58% of the counts were made.

Participation in counts was also at record levels, with a record 1,164 observers in the field and a record 3,958.95 party hours. There were 43 counts with 10 or more observers, which also was a new high. It is likely that with similar participation in 1974, a similar number of species may have been recorded. Details of the weather and participation on each count are reported in Table 1. Most counts were the same as last year. The Augusta and Cable counts were not repeated, but the Fort Atkinson count (not compiled last year), the Kewaunee count (apparently lost last year), the Stevens Point count (not received last year), and a new count at Waupaca increased the total to 85. Another new count at Herbster (Bayfield County) was not included because less than 8 hours were spent and only 9 species were found.

Numerous rarities appeared on

the count. Seen for the first time on Wisconsin Christmas Counts was a Red-necked Grebe at Fond du Lac. Appearing for only the second time were a King Rail at Poynette and a House Wren at Oconomowoc; the latter observation has been submitted to the Wisconsin Society for Ornithology Records Committee. A Water Pipit at Madison was the third Christmas Count record for this species. Seen for only the fourth time were a Western Grebe at Madison, a Barrow's Goldeneye at Milwaukee, and two Spruce Grouse at Phelps. Other rarities included Trumpeter Swans at Poynette and Beloit (5th record); Turkey Vultures at Shawano, Baraboo, and Blanchardville, and a Sandhill Crane at Pensaukee (6th year); a Rose-breasted Grosbeak at Kenosha (7th year); 5 Black Scoters at Ephraim, 3 Surf Scoters at Milwaukee, Great Black-backed Gulls at Kewaunee, Woodland Dunes SE, and Milwaukee, and a Marsh Wren at Madison (8th year); Thayer's Gulls at Appleton and Milwaukee (9th year); a Yellow-headed Blackbird at Fond du Lac (10th year); and 2 Harlequin Ducks at Kewaunee (12th year).

Location and Details of the Counts

The location of each count is shown in Figure 1. Counts are numbered in groups from north to south and west to east. An alphabetical listing of counts follows and includes the count number (Figure 1), the location of the count center, and the name, address, and telephone number of the compiler. Data from counts that include areas in other states are only for species and participation in Wisconsin.

Adams (48); Adams; Richard King, 1303 Butts Ave., Apt. 3, Tomah, WI 54606; (608) 374-2174. **Appleton** (43); Jct. Hwys. 10 and 45; John Shillinglaw, 1952 Palisades Dr., Appleton, WI 54915; (414) 731-4222. **Arpin** (28); [bu12] mi. N Jct. Hwy. C and Oak Rd.; Dennis Seevers, 5969 Butternut Rd., Arpin, WI 54410; (715) 569-4260. **Ashland** (2); Jct. Hwys. 2 and 118; Dick Verch, 906 Ellis Ave., Ashland, WI 54806; (715) 682-5453. **Baraboo** (51); Jct. City View Rd. and Hwy. A; Raymond Dischler, 3830 Anchor Dr., Madison, WI 53714; (608) 249–4581. **Bayfield** (1); T 50 N, R 5 W, S-22; Betsy Bartelt, P.O. Box 1244, Bayfield, WI; (715) 779-3649. **Beloit** (74); Jct. Tracy and Eau Claire Rd.; Brad Paulson, 15034 Carroll St., Broadhead, WI 53520; (608) 879-2647. **Black River Falls** (27); Jct. Hwys. H and 54; Judy Allen, Rt. 2, Box 128, Black River Falls, WI 54615;

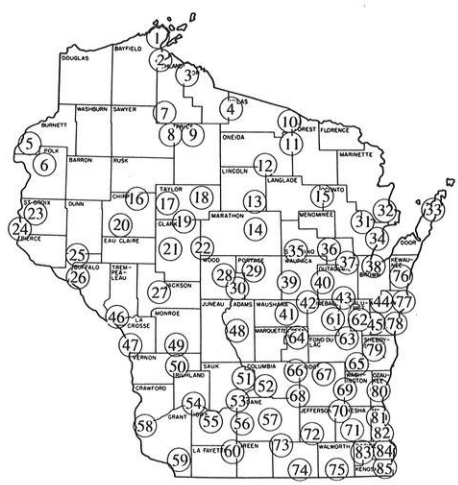

Figure 1. Locations of the 1994 Wisconsin Christmas Bird Counts.

(608) 488-4154. **Blanchardville** (60); 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** (58); 2 miles SE of Bridgeport; Al Shea, 1408 S. Thompson Dr., Madison, WI 53711; (608) 222-9520. **Burlington** (83); Jct. Hwy A and Crossway Rd.; Gerald DeBoer, 15935 2 Mile Rd., Franksville, WI 53126 (414) 835-4642. **Caroline** (35); 2 miles W of Caroline; Mark Peterson, Box 53, Caroline, WI 54928; (715) 754-2661. **Chippewa Falls** (20); Jct. Hwys. 178 and S; C.A. Kemper, 733 Maple St., Chippewa Falls, WI 54729; (715) 723-3815. **Clam Lake** (7); 7 miles SE of Clam Lake; Keith Merkel, 201 N. Ash Ave., Marshfield, WI 54449; (715) 384-2383. **Clyde** (55); Jct. Hwy. ZZ and Weaver Rd.; Steven Greb, 3402 Rutland-Dunn Rd., Stoughton, WI 53589; (608) 873-8936. **Columbus** (68); Jct. Johnson and Jahnke Sts.; Phyllis Johnson, P.O. Box 303, Cornucopia, WI 54827; (715) 742-3960. **Cooksville** (73); Cooksville; David and Anna Marie Huset, 242 W. Church St., Evansville, WI 53536; (608) 882-5648. **Durand** (25); Jct. Hwys. 25 and DD 3 miles N of Durand; C.A. Kemper, 733 Maple St., Chippewa Falls, WI 54729; (715) 723-3815. **Ephraim** (33); Hwy. A 3 miles S of Jct. with Hwy 42; Paul Regnier, P.O. Box 152, Baileys Harbor, WI 54202; (414) 839-2802. **Fifield** (9); Fifield Post Office; Thomas Nicholls, 2160 Draper Ave., Roseville, MN 55113; (612) 636-2592. **Fond du Lac** (63); Jct. Tower and Cody Roads; Jeffrey Baughman, W8985 Hwy. SS, Adell, WI 53001; (414) 626-4713. **Fort Atkinson**; (72); Jct. Main St. and Sherman Ave.; Richard Wanie, W5920 Lee Dr., Fort Atkinson, WI 53538; (414) 563-6274. **Fremont** (42); Jct. Hwys. I and HH 4 miles SW of Fremont; Daryl Tessen, 3118 N. Oneida St., Appleton, WI 54911; (414) 735-9903. **Gilman** (17); 1 mile W of Miller Dam; Janice Luepke, B-894 Eau Pleine Rd., Spencer, WI 54479; (715) 659-3910. **Grantsburg** (5); Jct. Hwys. 70 and 48; Dennis Allaman, 506 W. St. George, Grantsburg, WI 54840; (715) 463-2365. **Green Bay** (38); Jct. Allouez and S. Webster Avenues; John Jacobs, Neville Public Museum, 210 Museum Pl., Green Bay, WI 54303; (414) 448-4460. **Green Lake** (64); Jct. Hwy. J and Swamp Rd.; Thomas Schultz, N6104 Honeysuckle Lane, Green Lake, WI 54941; (414) 294-3021. **Gurney** (3); Gurney; Joan Elias, HCR 780, Gurney, WI 54559; (715) 893-2358. **Hales Corners** (82); Jct. Hwy 41 and Puetz Rd. (Milwaukee Co. only); John Schaeffer, 6636 W. Coldspring Rd., Greenfield, WI 53220; (414) 543-3429. **Hartford** (69); Jct. Hwys. 60 and 83; Judy Haseleu, 337 W. State St., Hartford, WI 53027; (414) 673-5865. **Hofa Park** (37); Jct. Hofa Park Dr. and Parkview; Elaine Friedrick, W1776 Hofa Park Dr., Seymour, WI 54165; (414) 822-3016. **Holcombe** (16); Chippewa-Rusk county line 1 mile E of Hwy. 27; C.A. Kemper, 733 Maple St., Chippewa Falls, WI 54729; (715) 723–3815. **Horicon Marsh** (67) Jct. Main Ditch and Main Dike in Refuge; Bill Volkert, DNR, N7725 Hwy. 28, Horicon, WI 53032; (414) 387-7877. **Hudson** (24); Afton, MN; Helen Lien, 5148 29th Ave. S., Minneapolis, MN 55417; (612) 729 - 5982. **Kenosha** (85); Jct. Hwys. 158

and HH (Kenosha Co. only); Ron Hoffmann, Box 886, Kenosha, WI 53141; (414) 654-5854. **Kettle Moraine** (65); Hwy. DD, W of Auburn Lake; Bill Volkert, W996 Birchwood Dr., Campbellsport, WI 53010; (414) 533-8939. **Kewaunee** (76); Jct. Hwys. 42 and D; William Mueller, 1242 S. 45 St., Milwaukee, WI 53214; (414) 643-7279. **Kickapoo Valley** (49); Jct. Hwys. T and 131; Eric Epstein, Rt. 2, Box 455, Norwalk, WI 54648; (608) 823-7837. **LaCrosse** (47); LaCrosse Courthouse; Fred Lesher, 509 Winona St., LaCrosse, WI 54603; (608) 783-1149. **LaFarge** (50); Jct. Hwys. 131 and 82; Dan Hazlett, P.O. Box 264, LaFarge, WI 54639. **Lake Geneva** (75); Interlaken Resort, Hwy. 50; Patricia Parsons, N3241 North Williams St., Lake Geneva, WI 53147; (414) 248- 1232. **Lakewood** (15); Jct. Hwys. T and FR 2117; John Woodcock, 1718 Cedar Grove Dr., Apt. 3A, Manitowoc, WI 54220; (414) 684-0447. **Luck** (6); Jct. Roads 180 NS and 180 EW in Polk Co.; John Nygren, 920 3rd Ave., Luck, WI 54853; (715) 472-2508. **Madison** (57); State Capitol; Carol Anderson and Tony Kalenic, 4638 Bonner Lane, Madison, WI 53704; (608) 249-8836. **Manitowish Waters** (4); Jct. Hwy. 51 and Hwy. W; John Bates, Hwy. 47, #2263, Mercer, WI 54547; (715) 476–2828. **Medford** (18); 2.5 miles NE of Whittlesey; Michael Risgart, N763 Oriole Dr., Stetsonville, WI 54480; (715) 678-2627. **Merrill** (13); Jct. South End Rd. and Hwy. 107; Alan Rusch, 3342 Westview Lane, Madison, WI 53713; (608) 274–1224. **Milwaukee** (81); Jct. Port Washington Rd. and Hampton Ave.; Jim Frank, 4339 W. Laverna Ave., Mequon, WI 53092; (414) 242-2443. **Mount Horeb** (56); Mount Horeb; Sharon & Warren Gaskill, 10405 Bell Rd., Black Earth, WI 53515; (608) 767-3642. **Nelson** (26); 1 mile S of Jct. Hwys. I and D; C.A. Kemper, 733 Maple St., Chippewa Falls, WI 54729; (715) 723-3815. **New Richmond** (23); 2 miles E of Boardman; Joseph Merchak, 210 Ilwaco Rd., River Falls, WI 54022; (715) 425-1169. **Oconomowoc** (70); Hwy 67, 2 miles N of Oconomowoc; Alex Kailing, W330 N8275 W. Shore Dr., Hartland, WI 53029; (414) 966-1072. **Oshkosh** (61); Jct. Hwys. 21 and 41; Thomas Ziebell, 1322 Ceape Ave., Oshkosh, WI 54901; (414) 235-0326. **Owen** (19); Hwy. D 2.5 miles N of Hwy. 29; Jon Roti Roti, H3333 Hwy. N, Colby, WI 54421; (715) 223-2815. **Oxbo** (8); Jct. Hwys. EE and 70; Maybelle Hardy, N15210 Pine Creek Rd., Park Falls, WI 54552; (715) 762–3178. **Pensaukee** (34); Pensaukee; Thomas Erdman, 4093 Hwy. S, Route 2, Oconto, WI 54153; (414) 834-3416. **Peshtigo** (32); Harmony Corners; Leo Feller, 530 Rainbow Circle, Peshtigo, WI 54157; (715) 582-3373. **Phelps** (10); Jct. FR 2139 and FR 2533, 2 miles SW of Phelps; Bill Reardon, 2547 Hwy. 70 E, Eagle River, WI 54521; (715) 479-8055. **Platteville** (59); Cornelia: Tom Goltry, 660 Pioneer Rd., Platteville, WI 53818; (608) 348-9666. **Plymouth** (79); Jct. Hwys. 23 and C; Harold Koopman, 415 Caroline St., Plymouth, WI 53073; (414) 892- 8101. **Poynette** (52); Jct. Hwys. 51 and CS; Mark & Sue Martin, Goose Pond Sanctuary, W7468 Prairie Lane, Arlington, WI 53911; (608) 635-4160. **Racine** (84); Hwy. H 0.5 miles S of Hwy. K (Racine Co. only); Jerry DeBoer, 15935 2 Mile Rd., Franksville, WI 53126; (414) 835-4642. **Ran-**

dolph (66); Hwy P midway between Cambria and Randolph; Larry Michael, 116 S. Nebraska St., Horicon, WI 53032; (414) 485-2936. **Rhinelander** (12); Rhinelander; Ced Vig, 919 Birch Bend, Rhinelander, WI 54501; (715) 362-3047. **Richland Center** (54); Jct. Hwys. O and TB SE of Richland Center; Robert Hirschy, University of Wisconsin Center-Richland, Richland Center, WI 53581; (608) 647-6186. **Riveredge** (80); Jct. Hwys. 33 and Lakeland School Rd.; Joan Berkopec, c/o Riveredge Nature Center, P.O. Box 26, Newburg, WI 53060; (414) 375-2715. **Sauk City** (53); 2.5 miles SE of Witwen; Becky Isenring, 6869 Taylor Road, Sauk City, WI 53583; (608) 643-6906. **Shawano** (36); 1.5 miles N of Lunds; Mark Peterson, Box 53, Caroline, WI 54928; (715) 754-2661. **Shiocton** (40); Jct. Hwys. M and 54; James Anderson, Mosquito Hill Nature Center, N3880 Rogers Rd., New London, WI 54961; (414) 779-6433. **Spencer** (22); Jct. Hwys. F and 153; Janice Luepke, B-894 Eau Pleine Rd., Spencer, WI 54479; (715) 659-3910. **Spruce** (31); 1[bu12] miles N of Spruce on Hwy. B; Jerry Smith, 6865 Fredrickson Road, Lena, WI 54139; (414) 829–6353. **Stevens Point** (29); Old Main, U.W.-Stevens Point; Nancy Stevenson, 1890 Red Pine Lane, Stevens Point, WI 54481; (715) 341-0084. **Stockbridge** (62); Kloten Swamp, 3 miles SE of Stockbridge; Carroll Rudy, W3866 Hwy. H, Chilton, WI 53014; (414) 849-9021. **Three Lakes** (11); 6 miles E of Three Lakes; Bill Reardon, 2547 Hwy. 70 E, Eagle River, WI 54521; (715) 479-8055. **Trempealeau** (46); Jct. Hwy K and Fremont St., Trempealeau; Thomas Hunter, 575 Jay St., Trempealeau, WI 54661; (608) 534-6233. **Waukesha** (71); Jct. Hwy. D and Brookhill Rd.; Patrick Horn, 376W19840 Sunnyhill Dr., Muskego, WI 53150; (414) 679-1459. **Waupaca** (39); Jct. Hwy.49 & Smokey Valley Rd.; Daryl Tessen, 3118 N. Oneida St., Appleton, WI 84911; (414) 735-9903. **Wausau** (14); Jct. Grand Ave. and Thomas St.; Walter Tamminen, 1224 N 4th Ave., Wausau, WI 54401; (715) 675-7669. **Wautoma** (41); Mount Morris; Delbert Greenman, 1218 Hwy W, Redgranite, WI 54970; (414) 787-3036. **Willard** (21); 1 mile E and 1.5 miles S of Willard; Janice Luepke, B-894 Eau Pleine Rd., Spencer, WI 54479; (715) 659- 3910. **Wisconsin Rapids** (30); Wisconsin Rapids Airport; LaVonne Middleton, 210 Shorewood Ter., Wisconsin Rapids, WI 54494; (715) 423-3242. **Woodland Dunes NW** (44); 1 mile SE of Menchalville, **NE** (77); 1 mile S of Mishicot; **SW** (45); 2 miles W of St. Nazianz; **and SE** (78); all in Manitowoc Co. as drawn on a map; Bernard Brouchoud, Woodland Dunes Nature Center, P.O. Box 2108, Manitowoc, WI 54221–2108; (414) 793-4007.

Results of the Counts

Results are reported in Tables 2–8. Common species are reported in Tables 2–7, with counts in similar areas of the state grouped together in each table. The number of each species is compared in Table 7 with the average for the previous ten years, with a correction for participation (total party hours). Numbers of uncommon and rare species are reported in Table 8. Counts on which each species occurred are listed in

Table 1. Details of the Counts.

Name of Count	Date	Sky	Snow (in)	Wind Dir.	Wind Vel.	Temp °F Low	Temp °F High	Observers Feeder	Observers Field	Parties	Party hours	Owl hours
Adams	12/28	Cloudy	0	NW	5	32	42	0	8	4	25.5	1
Appleton	12/17	Cloudy-PCl	3	WSW	12	27	33	13	26	17	108	1.25
Arpin	12/18	PCl-Cloudy	3	WSW	0–5	23	31	3	8	4	31.5	2
Ashland	12/17	Cloudy-Clear	4	W	0–7	28	31	1	4	2	16	0
Baraboo	12/28	Cloudy-Clear	1		14–23	28	43	1	9	4	29.25	0.75
Bayfield	12/19	Clear-Cloudy	3	S	0–10	18	35	4	6	4	22.5	0
Beloit	12/17	PCl-Cloudy	2		3–5	30	34	10	16	7	37.5	0
Black River Falls	12/17	Cloudy-PCl	3		0	23	35	7	7	3	12.75	1
Blanchardville	12/18	Cloudy-PCl	8	NW	5–15	26	31	0	10	4	25	3.25
Bridgeport	12/19	Cloudy-PCl	2	SW	8–12	18	28	0	16	7	54.75	5.5
Burlington	12/31	Cloudy	1	NW	0–5			0	3	3	28	2.5
Caroline	12/24	Clear-PCl	1	W	0–10	28	40	10	6	3	15	2
Chippewa Falls	12/23	Clear	1	S	3–6	18	51	0	18	4	39.5	0
Clam Lake	12/30	Cloudy-Snow	5	S	5–10	23	28	0	10	4	30.75	3
Clyde	12/31	Snow-MCl	4	W	5–10	18	27	0	9	5	25	2
Columbus	12/17	Cloudy	3		0	31	35	4	2	1	8.5	0
Cooksville	12/31	Snow-Cloudy	1	NE-N	5–15	26	26	2	4	2	13	1
Durand	12/17	Snow-Cloudy	2	S	3–6	22	36	0	9	4	32.5	0
Ephraim	12/17	Cloudy	tr	NW	10–12	30	34	23	27	10	63.75	0.75
Fifield	12/20	Clear	6	SW	0–5	6	32	25	7	5	39.5	1
Fond du Lac	12/18	PCl-Clear	3	WNW	5–10	28	35	1	16	7	40	3
Fort Atkinson	12/31	Clear-PCl	0	NE		20	33	2	5	3	14	0
Fremont	12/19	Cloudy-PCl	3	SW	5–16	12	31	0	11	6	47	0.5
Gilman	12/24	Clear	2		0	20	34	7	8	4	34.25	4
Grantsburg	12/17	Cloudy-PCl	12		2–5	20	33	0	10	6	35	0
Green Bay	12/17	Cloudy	2	SE-SW	5–10	32	36	15	23	13	78.5	13
Green Lake	12/31	Cloudy-PCl	tr	N	5–15	27	30	0	16	6	28.5	2.5
Gurney	1/2	Cloudy-Snow	5	SW-W	5–10	2	12	1	16	6	25	0
Hales Corners	12/18	PCl-Clear	5	W	5–10	32	38	0	15	7	40	0
Hartford	12/27	MCl-PCl	tr	W	6	34	44	0	14	6	49	3
Hofa Park	12/27	Cloudy	1	SW-W	5–13	25	34	7	7	4	32	0
Holcombe	12/27				0	26	46	0	14	5	37.5	0
Horicon Marsh	12/18	Cloudy-MCl	3	WSW-W	5–10	27	32	1	11	7	37.25	2
Hudson	1/1	Cloudy-PCl	1	NW	10–13	7	13	0	9	5	28.5	0.5
Kenosha	12/17	PCl-Clear	4	WSW	2–8	34	40	0	2	1	10	0
Kettle Moraine	12/23	Cloudy	3	NW	5–15	34	40	0	7	4	37.5	4
Kewaunee	12/31	Cloudy-PCl	0	NW	5–12	27	31	0	16	6	39	2.15
Kickapoo Valley	12/17	Cloudy	4	SW-W	5–10	25	34	0	5	3	23	0
LaCrosse	12/17	Partly Cloudy	1	NW	5–10	30	34	3	32	15	85	3.5
Lafarge	12/17	Cloudy	7	SW	5–10	22	34	1	5	1	9	0.5
Lake Geneva	12/17	Cloudy-PCl	7	S-WSW	3–10	30	37	5	13	8	36.5	2.5
Lakewood	1/2	Partly Cloudy	2	SW	10–15	0	14	0	1	1	8.5	0
Luck	12/17	Partly Cloudy	5	E	0–15	22	37	15	12	8	32	1
Madison	12/17	Cloudy-PCl	6	SW-W	5–15	27	36	26	79	23	265.5	34.1
Manitowish Waters	12/31	PCl-Clear	2		1–3	8	17	1	8	5	25	0
Medford	1/1	Partly Cloudy	2	NW	5–15	-4	11	0	9	4	34	0
Merrill	12/26	Clear-PCl	1	SE-SW	3–8	18	40	0	4	3	27.75	0
Milwaukee	12/17	Cloudy-PCl		W	8–10	32	38	12	30	11	79	1
Mount Horeb	12/18	Cloudy-PCl	6	NW	5–10	21	34	7	39	17	67.5	9.75
Nelson	12/30	PCl-Snow	tr	SSE	5–15	26	31	0	17	7	48	0
New Richmond	12/17	Cloudy	6	W-NW	5–15	28	33	1	7	3	19.5	0
Oconomowoc	12/17	Cloudy-MCl	2		0–5	28	42	1	16	7	48	0.5
Oshkosh	12/17	Cloudy-PCl	3	S	5–10	32	40	3	21	12	75	1
Owen	12/17	Cloudy	4	NW	0–7	24	30	7	13	7	47.5	3.75
Oxbo	12/17	Cloudy-Clear	6		0	31	33	4	7	4	29	0
Pensaukee	12/26	Partly Cloudy	0	S	3–10	24	36	0	4	2	18	2
Peshtigo	12/17	Cloudy	1	WNW-NW	4–5	30	34	0	6	3	27	1.5
Phelps	12/17	Cloudy	4	W	5	26	32	1	9	4	26	0

continued

Table 1. (*Continued*)

Name of Count	Date	Sky	Snow (in)	Wind Dir.	Wind Vel.	Temp °F Low	Temp °F High	Observers Feeder	Observers Field	Parties	Party hours	Owl hours
Platteville	12/17	Cloudy-Clear	6	SE	0–10	30	38	6	15	8	26	2
Plymouth	12/17	Cloudy-PCl	2	SW	5–10	31	42	3	9	4	26	1
Poynette	12/31	Snow-Cloudy	2	W	5	28	30	16	20	11	73.25	5
Racine	12/17	Cloudy-MCl	2	W-E	10–15	32	38	5	14	7	42.9	0
Randolph	12/26	Fog-Clear	2	SW	5–10	22	46	0	1	1	9.5	0
Rhinelander	12/17	Cloudy	1	SW	10			21	3	1	8	0
Richland Center	12/18	Partly Cloudy	5	N	5–10	20	26	5	41	19	107	5
Riveredge	12/17	Cloudy	3	SW	0–10	30	35	35	80	26	222	26
Sauk City	12/26	Fog-PCl	1		0	20	39	0	32	14	106	4.75
Shawano	12/31	Cloudy-PCl	1	W	0–10	25	30	7	8	5	29	3
Shiocton	12/20	Cloudy-MCl	1	SE	0–5	30	42	6	13	6	32.5	0.5
Spencer	12/18	PCl-Clear	7	NW	5	21	32	5	13	7	54	4.5
Spruce	1/1	Cloudy-PCl	tr	W	8–15	18	20	0	4	2	16.5	1
Stevens Point	12/17	Cloudy-MCl	2	SE-NW		25	35	6	24	8	43.75	0
Stockbridge	12/17	Clear	4	S-SW	0–10	30	40	0	9	5	32	0
Three Lakes	12/18	Snow-Cloudy	4	W	5	22	28	4	5	3	20	0
Trempealeau	12/18	Cloudy-Clear	2	SSW	5	19	30	2	11	5	43.5	0
Waukesha	12/18	PCl-Clear	4	NW-W	10–18	31	38	2	27	9	87.75	6.67
Waupaca	12/28	Cloudy-Clear	tr	NW-S	5–16	31	37	0	1	1	9.5	0.5
Wausau	12/17	Cloudy	4		0	28	33	12	10	8	50.8	0
Wautoma	12/30	Cloudy-MCl	1		0	16	34	49	14	10	40.25	2.5
Willard	12/31	Cloudy-PCl	2	NW	5–15	17	25	6	10	5	47	2.75
Wisconsin Rapids	12/17	Clear	6	WNW	5–10	25	30	5	27	7	38	0
Woodland Dunes NW	12/31	Cloudy-MCl	tr	NW	0–10	25	32	2	9	6	26.25	0
Woodland Dunes NE	1/1	Snow-PCl	tr	NW	5–16	16	20	5	8	6	33.25	0
Woodland Dunes SW	12/17	Cloudy	1	SW	10	30	34	0	7	7	38.5	0
Woodland Dunes SE	12/18	Cloudy-PCl	1	NW	10	27	33	2	7	6	33.75	0
TOTAL								428	1,164	538	3,598.95	187.92

the order of their count number, the same order used in Tables 2–7. Undocumented reports of species for which documentation was requested were not included. A few species were not included because documentation was inadequate or indicated the identification was in error. However, very few rarities lacked documentation, and in general documentation was very good. It was a great improvement over previous years.

Counts this year were much better than any I can remember. Only one count had less than 20 species and only 13 had less than 30 species; almost half of the counts (42) reported 40 or more species and 21 recorded 50 or more. Madison had the greatest number of species (87), followed by Appleton (80), Riveredge (74), Poynette (70), Milwaukee and Racine (65), Sauk City (63), Green Bay (62), and Bridgeport (61). A summary of general abundance within various groups of species follows.

Waterfowl—It was an incredible year for waterfowl. Seen were 4 species of grebes, the 3 species of mergansers, the 3 species of swans, all 3 species of scoters, and every species of duck likely to be seen, except for the Blue-winged Teal. The many spe-

Table 2. Number of each species in northern Wisconsin found on 16 or more counts.

Species	1 Bayfield	2 Ashland	3 Gurney	4 Manitowish Waters	5 Grantsburg	6 Luck	7 Clam Lake	8 Oxbo	9 Fifield	10 Phelps	11 Three Lakes	12 Rhinelander	13 Merrill	14 Wausau	15 Lakewood
Canada Goose	0	0	0	0	354	0	0	0	0	0	0	0	0	0	0
American Black Duck	0	41	0	0	0	0	0	0	0	0	0	3	0	2	0
Mallard	2	190	0	0	20	7	0	0	10	0	0	215	281	114	0
Lesser Scaup	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Goldeneye	10	6	3	0	0	0	0	0	3	0	0	0	0	0	0
Bufflehead	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Merganser	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
Bald Eagle	4	7	0	7	10	3	0	4	1	4	2	2	1	1	0
Northern Harrier	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sharp-shinned Hawk	0	0	0	0	0	1	0	0	0	1	0	1	0	1	0
Cooper's Hawk	0	0	0	0	0	0	0	0	0	*	0	0	0	4	0
Northern Goshawk	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Red-tailed Hawk	0	0	0	0	0	1	0	0	0	0	0	0	2	17	0
Rough-legged Hawk	0	15	1	0	9	0	1	0	1	0	0	0	2	5	0
American Kestrel	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Ring-necked Pheasant	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Ruffed Grouse	3	4	9	2	1	1	2	10	6	5	0	1	2	1	1
Wild Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
American Coot	0	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	0	0	0	0	0
Herring Gull	318	288	0	0	0	0	0	0	0	0	0	0	0	0	0
Rock Dove	7	77	12	0	118	6	0	0	46	0	0	30	79	315	0
Mourning Dove	22	11	0	11	17	3	0	0	27	0	16	198	39	263	0
Eastern Screech-Owl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Great Horned Owl	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0
Barred Owl	0	0	0	0	2	1	2	0	1	0	0	0	0	0	1
Belted Kingfisher	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Red-headed Woodpecker	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0
Red-bellied Woodpecker	0	0	0	0	4	0	0	0	0	0	0	0	0	2	0
Downy Woodpecker	12	5	4	12	12	35	3	25	29	27	50	27	7	23	4
Hairy Woodpecker	2	5	5	24	7	24	9	26	39	32	13	29	5	19	3
Northern Flicker	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0
Pileated Woodpecker	1	*	*	2	6	12	5	5	10	4	3	7	1	2	0
Horned Lark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blue Jay	164	60	30	55	95	80	34	53	60	58	51	76	15	134	14
American Crow	53	187	32	25	198	38	19	50	103	71	15	10	65	430	45
Common Raven	17	11	27	14	9	5	70	16	40	22	10	4	6	4	2
Black-capped Chickadee	165	86	112	196	114	156	360	192	804	360	492	273	88	380	65
Red-breasted Nuthatch	20	9	25	17	1	17	204	7	119	68	212	39	6	14	8
White-breasted Nuthatch	12	7	6	10	19	49	5	22	37	21	12	52	11	51	4
Brown Creeper	3	*	0	1	0	0	1	2	4	4	0	7	1	4	0
Golden-crowned Kinglet	0	0	0	0	0	0	3	0	0	2	5	0	0	0	0
American Robin	0	2	0	0	2	1	0	0	0	0	0	0	0	2	0
Cedar Waxwing	0	0	0	0	14	2	0	0	0	0	0	20	0	50	0
Northern Shrike	1	3	*	2	1	0	1	2	0	1	0	1	1	4	0
European Starling	245	145	21	0	181	72	0	8	191	109	83	20	215	779	1
Northern Cardinal	*	3	0	0	1	31	0	1	4	0	0	2	10	55	0
American Tree Sparrow	0	0	0	0	0	2	0	0	0	0	0	0	0	27	0
Song Sparrow	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0
Swamp Sparrow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White-throated Sparrow	*	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Dark-eyed Junco	3	0	0	0	9	58	0	15	5	22	0	2	0	28	0
Snow Bunting	14	55	10	0	13	10	0	0	30	0	0	0	0	51	0
Red-winged Blackbird	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Grackle	0	0	0	0	0	6	0	0	4	0	0	0	0	0	0
Purple Finch	0	2	7	34	0	2	196	55	161	147	123	191	114	78	1
House Finch	13	75	0	4	2	0	0	0	1	1	0	12	*	124	0
Pine Siskin	10	15	37	2	0	2	306	38	43	101	394	165	0	24	0
American Goldfinch	81	75	208	196	297	60	92	137	311	508	165	488	33	139	7
Evening Grosbeak	33	2	28	49	0	0	83	201	85	332	66	235	6	0	35
House Sparrow	15	101	50	0	32	220	0	0	10	20	22	0	186	378	0
Total Species	34	34	22	21	31	36	24	24	32	29	21	33	27	40	15

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

Table 3. Number of each species in west-central Wisconsin found on 16 or more counts.

Species	16 Holcombe	17 Gilman	18 Medford	19 Owen	20 Chippewa Falls	21 Willard	22 Spencer	23 New Richmond	24 Hudson	25 Durand	26 Nelson	27 Black River Falls	28 Arpin	29 Stevens Point	30 Wisconsin Rapids
Canada Goose	1	0	0	2	35	0	1	492	1434	0	0	0	0	197	391
American Black Duck	1	0	0	0	40	0	0	0	1	0	0	0	0	5	8
Mallard	0	0	0	1	466	0	2	52	270	0	16	0	0	858	331
Lesser Scaup	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Goldeneye	0	0	0	0	0	0	0	13	28	2	242	0	0	165	168
Bufflehead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Merganser	0	0	0	0	0	0	0	0	9	0	11	0	0	1	0
Bald Eagle	5	7	1	1	4	5	2	9	8	22	94	5	0	2	3
Northern Harrier	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Sharp-shinned Hawk	0	0	0	0	1	0	0	2	0	0	1	0	0	1	1
Cooper's Hawk	0	0	0	0	0	0	0	1	1	0	0	0	0	1	2
Northern Goshawk	0	0	0	0	0	1	2	1	0	0	0	0	0	1	0
Red-tailed Hawk	9	3	1	11	20	28	11	15	8	41	43	8	18	12	7
Rough-legged Hawk	1	4	4	5	1	18	2	7	3	15	17	6	7	12	16
American Kestrel	0	0	1	10	1	1	4	2	2	1	5	0	2	1	0
Ring-necked Pheasant	0	2	1	0	1	0	0	7	3	1	1	2	2	0	2
Ruffed Grouse	3	2	6	3	0	9	2	0	2	9	1	1	5	2	1
Wild Turkey	0	0	0	0	0	0	0	0	9	52	20	6	0	0	16
American Coot	0	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	0	0	0	0	0
Herring Gull	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0
Rock Dove	407	190	69	830	613	421	1814	144	78	547	457	179	515	205	189
Mourning Dove	14	17	18	163	30	12	176	17	2	70	6	0	60	214	69
Eastern Screech-Owl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Great Horned Owl	0	6	0	1	1	4	3	0	0	2	0	2	3	1	0
Barred Owl	0	3	0	0	1	0	3	0	0	0	0	*	*	*	0
Belted Kingfisher	0	0	0	1	1	1	0	0	0	0	2	0	0	0	2
Red-headed Woodpecker	0	0	0	0	2	3	0	0	0	0	2	1	*	2	0
Red-bellied Woodpecker	13	0	0	7	12	15	6	2	12	17	28	12	3	4	3
Downy Woodpecker	21	23	12	53	22	39	52	16	16	32	45	17	16	18	14
Hairy Woodpecker	32	29	7	41	9	13	31	9	8	20	0	12	10	14	13
Northern Flicker	0	0	0	0	0	2	0	0	1	1	0	0	0	0	0
Pileated Woodpecker	2	6	0	*	0	5	1	0	2	6	14	4	2	3	3
Horned Lark	0	0	0	8	15	6	22	0	0	3	0	0	0	0	5
Blue Jay	227	158	170	244	272	160	173	128	94	249	327	113	71	184	80
American Crow	266	176	240	329	330	317	487	277	476	649	328	153	142	431	159
Common Raven	5	40	4	13	0	12	0	0	0	0	0	10	0	0	2
Black-capped Chickadee	621	684	448	892	246	661	556	102	98	203	332	104	118	307	142
Red-breasted Nuthatch	22	67	22	4	4	22	6	0	0	1	0	1	*	1	12
White-breasted Nuthatch	85	28	7	63	53	81	56	13	19	40	75	36	23	29	17
Brown Creeper	3	2	0	0	0	0	3	0	0	2	0	*	0	2	1
Golden-crowned Kinglet	0	2	0	0	0	4	3	0	0	0	0	0	0	0	0
American Robin	0	0	1	1	2	1	1	40	122	0	0	1	0	1	0
Cedar Waxwing	0	4	0	1	80	0	1	245	135	110	170	0	0	105	0
Northern Shrike	5	4	5	8	2	3	12	3	4	5	3	0	1	2	1
European Starling	671	436	84	2389	905	640	970	734	232	671	752	39	201	192	72
Northern Cardinal	12	6	6	30	27	41	43	40	30	30	110	33	49	32	20
American Tree Sparrow	111	29	24	189	88	89	241	32	13	242	116	6	5	131	1
Song Sparrow	0	0	0	1	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	1	0	0
White-throated Sparrow	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
Dark-eyed Junco	0	2	14	13	28	58	45	73	69	388	446	117	16	114	64
Snow Bunting	0	227	8	75	0	21	406	0	0	0	0	0	40	300	66
Red-winged Blackbird	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
Common Grackle	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Purple Finch	53	35	171	75	0	0	3	26	25	1	11	14	4	22	0
House Finch	0	0	0	50	12	0	11	2	92	41	86	3	25	58	4
Pine Siskin	0	7	0	0	0	9	0	1	0	0	4	0	0	0	0
American Goldfinch	164	165	70	150	25	72	82	121	46	89	305	118	53	76	41
Evening Grosbeak	0	195	25	0	0	29	0	0	0	0	0	0	2	0	0
House Sparrow	814	313	292	2422	627	1834	2252	81	59	999	1106	16	333	359	110
Total Species	27	36	27	36	35	36	37	36	40	38	34	29	30	46	40

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

Table 4. Number of each species in east-central Wisconsin found on 16 or more counts.

Species	31 Spruce	32 Peshtigo	33 Ephraim	34 Pensaukee	35 Caroline	36 Shawano	37 Hofa Park	38 Green Bay	39 Waupaca	40 Shiocton	41 Wautoma	42 Fremont	43 Appleton	44 Woodland Dunes NW	45 Woodland Dunes SW
Canada Goose	0	192	1644	1031	0	2	0	7926	250	0	44	44	1300	7	2561
American Black Duck	0	18	13	1	0	3	0	602	20	0	9	33	201	15	0
Mallard	0	265	639	20	326	11	0	6237	155	0	255	390	3200	131	58
Lesser Scaup	0	0	0	0	0	0	0	10	1	0	0	0	8	0	0
Common Goldeneye	0	2	897	4	0	6	0	1	0	0	0	2	930	0	0
Bufflehead	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Common Merganser	0	9	79	41	0	0	0	5053	8	0	0	16	1425	0	0
Bald Eagle	0	7	1	2	1	9	0	4	2	0	*	4	18	0	0
Northern Harrier	3	3	5	4	0	0	0	0	0	2	6	12	0	1	6
Sharp-shinned Hawk	0	0	*	*	1	0	1	2	0	0	0	1	4	0	0
Cooper's Hawk	0	1	0	*	0	0	0	8	0	1	0	1	8	0	0
Northern Goshawk	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
Red-tailed Hawk	13	8	2	15	12	20	22	68	11	52	24	70	140	27	36
Rough-legged Hawk	8	8	11	3	2	8	2	5	5	3	20	40	11	0	15
American Kestrel	4	3	*	3	2	5	18	29	2	25	2	10	51	13	30
Ring-necked Pheasant	2	0	0	0	0	3	6	0	0	2	0	1	16	0	3
Ruffed Grouse	4	0	4	2	7	3	0	0	1	1	6	3	0	0	1
Wild Turkey	0	0	0	0	3	1	0	0	2	0	199	0	0	0	28
American Coot	0	0	21	0	0	0	0	3	0	0	0	2	3	0	0
Ring-billed Gull	0	0	83	1	0	0	0	60	0	0	0	0	120	0	12
Herring Gull	0	22	1648	84	0	7	0	835	0	0	0	0	720	203	12
Rock Dove	574	205	61	229	145	203	800	1758	176	879	332	629	975	199	385
Mourning Dove	11	230	57	233	84	108	300	1350	18	289	82	575	2300	62	119
Eastern Screech-Owl	0	0	0	0	0	0	1	2	0	1	0	0	1	0	0
Great Horned Owl	5	4	0	5	1	9	*	4	0	4	2	2	21	2	1
Barred Owl	0	0	1	1	2	1	0	1	0	1	3	1	1	0	1
Belted Kingfisher	0	0	0	0	1	1	0	1	0	0	2	1	3	1	0
Red-headed Woodpecker	0	0	0	0	0	15	0	1	1	2	6	1	5	0	0
Red-bellied Woodpecker	6	3	6	3	9	3	0	14	1	18	27	21	14	2	2
Downy Woodpecker	8	17	28	15	31	26	13	55	7	51	83	66	67	20	15
Hairy Woodpecker	11	14	28	10	21	13	9	21	8	13	25	22	26	7	12
Northern Flicker	0	0	1	2	4	2	0	2	1	2	0	2	5	0	0
Pileated Woodpecker	0	2	8	1	7	5	1	0	0	5	4	3	0	0	1
Horned Lark	0	0	0	0	0	2	10	16	7	20	0	0	196	0	120
Blue Jay	19	109	88	83	132	135	48	159	41	157	421	203	129	56	69
American Crow	415	248	292	59	165	379	102	369	247	319	2429	310	490	148	182
Common Raven	5	6	27	0	4	2	4	0	1	1	0	0	0	0	0
Black-capped Chickadee	94	303	292	165	297	249	264	213	74	196	437	308	212	184	144
Red-breasted Nuthatch	2	9	18	1	34	25	8	8	0	4	27	2	8	5	0
White-breasted Nuthatch	7	41	44	21	54	58	27	60	21	51	122	93	60	35	54
Brown Creeper	0	0	1	1	0	5	0	3	0	2	3	6	9	3	2
Golden-crowned Kinglet	1	0	3	0	1	3	0	3	0	1	0	1	7	6	5
American Robin	0	1	1	0	0	0	2	6	0	4	5	20	60	0	0
Cedar Waxwing	60	51	0	0	3	56	0	44	55	0	10	108	87	0	0
Northern Shrike	2	3	4	1	1	4	1	5	3	5	4	13	4	3	5
European Starling	556	1674	181	380	709	1068	655	1348	253	1566	337	1363	1870	139	964
Northern Cardinal	13	11	37	12	42	20	35	85	5	30	136	102	116	43	10
American Tree Sparrow	22	214	28	71	22	106	153	323	7	370	139	856	182	34	218
Song Sparrow	0	0	0	0	0	0	0	3	0	1	0	0	5	0	0
Swamp Sparrow	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
White-throated Sparrow	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0
Dark-eyed Junco	14	30	25	13	164	111	146	154	54	185	903	705	245	97	48
Snow Bunting	150	235	50	2	0	9	10	30	0	6	0	5	39	0	68
Red-winged Blackbird	0	0	0	0	0	0	0	1	0	0	0	5	0	0	0
Common Grackle	0	0	1	0	0	0	0	7	0	0	0	1	2	0	2
Purple Finch	16	9	11	19	179	31	8	5	52	0	52	18	8	1	0
House Finch	3	17	29	29	40	50	54	132	2	75	19	116	775	26	0
Pine Siskin	3	0	6	0	6	13	4	0	7	4	5	0	6	0	0
American Goldfinch	84	126	162	83	251	182	46	124	27	212	350	236	171	55	26
Evening Grosbeak	0	7	0	0	10	6	0	0	0	0	0	0	11	0	0
House Sparrow	176	719	107	241	280	231	491	2028	105	1542	114	1270	1038	281	520
Total Species	32	42	54	42	39	54	32	62	35	42	41	50	80	31	36

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

Table 5. Number of each species in southwest Wisconsin found on 16 or more counts.

Species	46 Trempealeau	47 LaCrosse	48 Adams	49 Kickapoo Valley	50 LaFarge	51 Baraboo	52 Poynette	53 Sauk City	54 Richland Center	55 Clyde	56 Mount Horeb	57 Madison	58 Bridgeport	59 Platteville	60 Blanchardville
Canada Goose	1	1822	702	84	0	5600	1953	77	201	0	207	2300	0	101	0
American Black Duck	0	2	0	0	0	0	42	8	0	0	0	48	9	0	0
Mallard	323	500	51	0	0	145	255	269	25	0	29	4387	240	0	22
Lesser Scaup	1	0	0	0	0	0	3	45	0	0	0	24	0	0	0
Common Goldeneye	0	0	22	0	0	20	97	24	0	0	0	467	37	0	0
Bufflehead	0	0	0	0	0	2	2	0	0	0	0	232	0	0	0
Common Merganser	0	4	4	0	0	18	669	99	76	0	0	840	0	0	0
Bald Eagle	9	26	14	4	0	11	12	23	29	6	2	3	120	6	0
Northern Harrier	0	1	0	1	0	0	3	5	6	2	3	6	0	0	1
Sharp-shinned Hawk	2	3	0	2	0	2	3	7	0	0	2	11	1	0	2
Cooper's Hawk	1	0	0	0	1	1	7	5	2	0	0	16	1	1	1
Northern Goshawk	0	0	1	0	0	0	1	0	0	0	0	2	0	0	0
Red-tailed Hawk	28	35	0	50	29	35	78	125	108	12	71	113	88	49	67
Rough-legged Hawk	3	0	0	5	1	17	8	21	17	15	8	7	16	2	5
American Kestrel	7	20	0	8	1	6	22	30	34	13	16	13	24	10	12
Ring-necked Pheasant	0	0	0	2	0	0	36	4	4	0	27	19	19	20	9
Ruffed Grouse	0	11	1	2	2	0	2	10	21	1	7	0	5	0	6
Wild Turkey	55	59	0	56	103	16	96	45	540	6	94	0	221	32	158
American Coot	2	0	0	0	0	2	0	0	0	0	0	2588	0	0	0
Ring-billed Gull	0	3	27	0	0	0	1	16	35	0	0	623	8	0	0
Herring Gull	0	3	0	0	0	32	937	569	55	1	0	965	0	0	0
Rock Dove	432	282	25	403	21	257	413	615	771	0	347	863	418	160	205
Mourning Dove	41	149	6	55	4	87	291	261	142	33	88	1225	129	23	68
Eastern Screech-Owl	0	4	0	0	1	2	4	12	1	0	4	117	7	2	6
Great Horned Owl	*	5	0	0	3	0	12	21	7	6	12	25	6	1	16
Barred Owl	4	5	0	1	0	0	1	6	0	0	2	0	1	2	2
Belted Kingfisher	1	3	0	1	1	0	2	3	2	1	0	4	2	2	1
Red-headed Woodpecker	32	6	1	7	0	0	1	3	6	4	6	2	15	1	6
Red-bellied Woodpecker	26	51	2	24	8	9	47	78	62	7	30	116	91	8	30
Downy Woodpecker	33	85	11	12	13	19	100	75	92	11	47	301	51	15	39
Hairy Woodpecker	15	37	3	9	7	6	22	46	37	2	16	100	21	3	10
Northern Flicker	1	2	1	1	0	1	5	12	4	0	7	15	5	0	0
Pileated Woodpecker	1	7	0	5	2	5	2	15	9	2	6	0	13	2	0
Horned Lark	0	13	0	14	8	0	52	19	3	1	49	98	172	26	69
Blue Jay	220	253	113	233	61	189	378	598	546	71	263	675	342	129	206
American Crow	238	304	186	417	189	546	660	913	1047	200	372	2241	375	233	195
Common Raven	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Black-capped Chickadee	198	369	86	94	17	136	390	566	487	50	197	1284	235	88	193
Red-breasted Nuthatch	5	0	0	1	0	3	11	12	0	0	4	9	3	12	3
White-breasted Nuthatch	54	103	11	24	15	32	95	174	115	25	57	262	115	14	52
Brown Creeper	3	18	0	2	0	3	4	20	4	0	1	88	7	0	0
Golden-crowned Kinglet	0	0	0	3	0	0	6	4	1	0	0	35	3	0	6
American Robin	8	111	0	2	0	42	68	19	5	0	3	254	1	0	2
Cedar Waxwing	12	23	0	0	0	4	96	224	0	0	1	239	1	0	0
Northern Shrike	1	2	0	6	1	1	6	5	1	0	3	11	0	0	4
European Starling	344	2018	0	751	65	686	1671	1411	1391	44	567	5332	820	301	545
Northern Cardinal	66	188	6	67	22	22	137	210	334	33	112	620	320	74	108
American Tree Sparrow	313	699	2	166	35	64	398	1516	584	11	181	1299	554	102	544
Song Sparrow	1	3	0	1	1	10	3	13	1	1	72	46	8	0	20
Swamp Sparrow	0	3	0	0	0	0	3	13	5	0	0	27	1	0	3
White-throated Sparrow	0	2	0	0	0	1	2	0	1	0	30	14	0	0	0
Dark-eyed Junco	381	389	77	373	83	174	1084	1094	1043	82	643	1249	1407	181	791
Snow Bunting	0	0	0	7	0	0	650	0	0	0	7	0	27	0	0
Red-winged Blackbird	0	5	0	0	5	0	0	3	3	0	0	326	4	0	33
Common Grackle	0	9	0	0	1	0	0	7	3	0	0	21	1	0	1
Purple Finch	1	1	0	2	4	9	86	18	62	10	9	12	5	11	8
House Finch	16	88	0	5	0	33	123	96	65	27	19	1088	44	93	19
Pine Siskin	0	1	0	0	0	0	0	0	6	0	0	4	0	1	0
American Goldfinch	26	184	0	117	18	92	361	184	329	86	199	457	239	50	81
Evening Grosbeak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
House Sparrow	481	793	0	343	159	112	691	994	1312	12	516	2516	1474	309	796
Total Species	42	58	23	41	31	42	70	63	55	33	46	87	61	39	51

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

Table 6. Number of each species in southeast Wisconsin found on 16 or more counts.

Species	61 Oshkosh	62 Stockbridge	63 Fond du Lac	64 Green Lake	65 Kettle Moraine	66 Randolph	67 Horicon Marsh	68 Columbus	69 Hartford	70 Oconomowoc	71 Waukesha	72 Fort Atkinson	73 Cooksville	74 Beloit	75 Lake Geneva
Canada Goose	343	12	4300	100000	8	2000	175500	1245	66	3065	5171	43	1152	2184	8430
American Black Duck	22	0	35	5	0	1	0	9	4	4	0	2	0	0	0
Mallard	926	0	308	187	2	57	41	112	83	545	628	273	150	1163	290
Lesser Scaup	12	0	1	0	0	9	0	0	*	26	0	0	0	0	207
Common Goldeneye	320	0	0	210	0	0	0	0	31	62	2	0	0	172	1788
Bufflehead	3	0	1	*	0	0	0	0	7	2	0	0	0	0	15
Common Merganser	1712	4	0	59	35	0	32	0	2	102	0	0	15	0	13
Bald Eagle	7	1	1	6	0	1	1	0	0	0	0	0	0	1	*
Northern Harrier	10	2	7	10	0	1	14	0	0	0	0	0	1	*	1	0
Sharp-shinned Hawk	3	0	5	2	2	0	0	0	0	3	2	0	*	0	2
Cooper's Hawk	8	1	3	2	1	0	1	0	3	1	1	2	2	1	1
Northern Goshawk	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Red-tailed Hawk	81	54	51	38	31	34	49	8	40	47	44	7	17	18	21
Rough-legged Hawk	5	3	0	20	1	4	15	0	1	0	4	0	1	0	3
American Kestrel	50	21	28	10	19	11	29	5	27	15	10	6	13	13	11
Ring-necked Pheasant	9	0	3	6	2	3	17	15	3	1	10	2	1	72	29
Ruffed Grouse	0	0	4	3	2	0	0	0	0	0	0	0	0	0	0
Wild Turkey	0	43	0	0	6	11	0	0	0	4	1	0	0	0	22
American Coot	2	0	1	800	0	2	0	0	327	124	0	0	0	0	2763
Ring-billed Gull	89	1	22	16	6	20	10	0	49	125	74	0	2	7	945
Herring Gull	186	12	0	109	17	0	171	0	899	6	4	9	0	0	1508
Rock Dove	874	793	608	249	289	231	551	225	396	619	427	125	72	441	543
Mourning Dove	1675	249	358	54	101	111	435	67	110	197	404	22	50	191	168
Eastern Screech-Owl	1	0	5	2	0	0	3	0	7	1	4	0	2	0	2
Great Horned Owl	4	*	16	18	9	0	11	0	2	2	15	2	2	*	1
Barred Owl	0	1	1	3	3	0	1	2	2	1	0	0	*	0	1
Belted Kingfisher	0	0	2	*	2	0	0	0	1	1	2	0	1	0	0
Red-headed Woodpecker	0	1	0	2	0	0	0	2	0	0	0	0	1	2	7
Red-bellied Woodpecker	5	8	5	8	16	0	4	2	8	8	11	6	2	4	12
Downy Woodpecker	60	39	42	25	31	5	24	12	38	27	52	9	20	32	42
Hairy Woodpecker	6	11	14	12	10	4	3	5	8	14	12	3	10	5	17
Northern Flicker	0	5	3	0	0	0	0	1	2	2	2	0	0	0	1
Pileated Woodpecker	0	*	0	1	1	0	0	0	0	0	1	0	0	0	0
Horned Lark	61	427	55	0	3	16	104	13	4	46	57	0	41	19	34
Blue Jay	162	61	126	109	135	80	94	47	60	65	158	26	37	65	75
American Crow	279	103	188	219	217	160	112	47	358	326	1151	153	68	542	503
Common Raven	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Black-capped Chickadee	134	89	344	134	216	17	94	11	309	152	305	56	29	122	151
Red-breasted Nuthatch	2	0	2	1	10	0	1	1	0	2	1	0	0	0	5
White-breasted Nuthatch	32	25	26	32	42	6	41	7	48	33	76	14	16	14	56
Brown Creeper	8	10	6	1	4	2	3	3	2	3	2	4	*	0	0
Golden-crowned Kinglet	13	2	3	4	13	0	0	0	8	0	16	0	0	0	3
American Robin	1	*	0	*	1	0	0	0	5	36	119	0	0	*	1
Cedar Waxwing	*	0	0	0	11	0	0	0	36	24	59	0	0	0	37
Northern Shrike	3	2	4	4	7	5	2	0	3	4	2	0	1	2	1
European Starling	2722	1010	496	433	995	334	1175	626	1288	783	1093	343	492	979	1124
Northern Cardinal	83	21	55	47	44	3	28	10	61	87	131	26	44	91	81
American Tree Sparrow	288	120	133	198	103	166	300	149	175	246	388	86	304	550	158
Song Sparrow	1	2	2	1	0	0	2	5	4	2	6	0	5	5	3
Swamp Sparrow	0	0	0	1	0	0	1	0	0	0	7	0	1	0	0
White-throated Sparrow	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Dark-eyed Junco	174	48	181	233	206	45	153	242	221	308	414	156	188	669	483
Snow Bunting	99	895	51	0	0	0	33	0	0	0	0	0	0	10	0
Red-winged Blackbird	21	0	325	0	2	0	298	0	0	1	2	0	0	0	3
Common Grackle	2	1	27	1	1	0	13	1	0	0	0	0	*	0	2
Purple Finch	0	*	1	14	0	0	5	0	0	18	7	2	6	31	6
House Finch	166	33	28	2	84	12	33	51	10	56	26	35	58	70	132
Pine Siskin	0	*	3	0	0	0	0	10	0	9	0	0	0	0	0
American Goldfinch	59	323	81	80	91	26	36	80	54	55	77	132	41	38	104
Evening Grosbeak	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
House Sparrow	3133	3429	980	52	592	293	1148	486	678	769	173	176	155	860	1699
Total Species	57	39	59	56	43	32	45	31	48	56	53	28	38	38	55

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

Table 7. Numbers of each species near Lake Michigan on 16 or more counts and totals.

Species	76 Kewaunee	77 Woodland Dunes NE	78 Woodland Dunes SE	79 Plymouth	80 Riveredge	81 Milwaukee	82 Hales Corners	83 Burlington	84 Racine	85 Kenosha	No. of Counts	Total Individuals	Percent Change
Canada Goose	865	35	1052	225	7253	1172	1074	342	1112	1200	56	348,804	+200
American Black Duck	*	0	69	0	28	145	0	3	26	8	37	1,486	−4
Mallard	7	197	948	35	938	7500	212	418	1309	1900	64	38,997	+40
Lesser Scaup	2	0	0	1	6	21	0	0	1	0	18	380	+194
Common Goldeneye	3035	0	112	3	350	4751	175	2	126	0	38	14,288	+263
Bufflehead	138	4	8	0	27	636	62	0	71	0	18	1,213	+175
Common Merganser	190	6	343	2	73	18	0	0	11	16	37	11,051	+181
Bald Eagle	0	0	0	0	*	1	0	0	0	0	55	544	+40
Northern Harrier	4	2	0	0	4	0	1	0	2	0	32	131	+91
Sharp-shinned Hawk	2	0	0	1	11	4	2	1	1	1	39	96	+73
Cooper's Hawk	1	1	1	1	12	3	1	1	1	0	42	113	+116
Northern Goshawk	2	0	0	0	4	0	1	0	0	0	16	22	−34
Red-tailed Hawk	29	9	14	25	122	23	9	12	19	6	72	2,471	+78
Rough-legged Hawk	5	1	0	2	4	0	0	0	1	0	64	488	+9
American Kestrel	2	5	7	17	59	11	7	19	24	3	66	867	+34
Ring-necked Pheasant	2	1	2	9	24	3	3	1	4	0	50	417	+66
Ruffed Grouse	1	4	2	0	2	0	0	0	0	0	55	212	−49
Wild Turkey	0	5	1	71	38	0	0	0	0	0	33	2,022	+114
American Coot	1	0	8	0	26	169	5	0	19	200	21	7,068	+974
Ring-billed Gull	192	525	64	15	300	1393	240	21	415	50	35	5,570	0
Herring Gull	1237	1120	182	3	328	1067	1	3	503	30	38	13,591	+6
Rock Dove	503	72	279	513	1378	276	102	55	388	280	78	29,389	+17
Mourning Dove	94	170	182	223	974	559	94	105	525	67	79	16,080	+29
Eastern Screech-Owl	0	0	0	0	19	2	0	9	0	0	27	222	+3
Great Horned Owl	1	2	*	2	36	6	0	3	5	1	54	338	−4
Barred Owl	0	0	2	0	10	0	0	0	0	0	38	78	−10
Belted Kingfisher	1	0	1	1	5	3	0	1	0	0	38	64	−17
Red-headed Woodpecker	0	0	0	0	5	0	0	0	0	0	33	162	−7
Red-bellied Woodpecker	0	3	2	9	41	5	2	1	7	1	67	1,028	−1
Downy Woodpecker	17	27	20	31	256	61	31	13	27	2	85	3,020	−8
Hairy Woodpecker	6	13	4	8	46	18	3	8	4	2	84	1,310	−18
Northern Flicker	2	1	0	*	32	4	6	0	3	1	39	138	+10
Pileated Woodpecker	2	0	0	0	1	0	0	0	0	0	50	216	+17
Horned Lark	0	0	16	51	66	2	0	2	44	10	45	2,025	+30
Blue Jay	40	30	57	72	529	72	39	51	66	5	85	12,016	+3
American Crow	260	92	500	137	1037	1214	188	96	226	66	85	28,612	+27
Common Raven	0	0	0	0	0	0	0	0	0	0	31	393	−44
Black-capped Chickadee	92	140	165	50	1593	524	126	62	218	11	85	22,323	+3
Red-breasted Nuthatch	0	9	0	1	32	6	0	0	2	1	64	1,218	+20
White-breasted Nuthatch	1	17	27	18	231	52	17	15	16	1	85	3,702	−13
Brown Creeper	0	0	3	0	17	8	2	1	3	0	53	307	+28
Golden-crowned Kinglet	0	10	6	0	21	12	2	1	4	0	38	228	−2
American Robin	0	0	0	1	239	196	45	0	28	0	43	1,463	+141
Cedar Waxwing	87	50	22	0	220	389	86	10	107	2	44	3,151	+70
Northern Shrike	7	0	1	6	20	4	2	2	3	0	71	259	+43
European Starling	1222	96	472	1057	3404	5827	351	990	1327	185	82	68,891	+4
Northern Cardinal	16	57	37	30	428	197	74	70	73	8	78	5,434	−5
American Tree Sparrow	31	159	62	45	522	41	73	139	196	22	72	15,163	+5
Song Sparrow	0	0	1	0	9	5	2	6	12	1	37	257	+14
Swamp Sparrow	0	1	0	0	4	0	0	3	2	1	19	79	+21
White-throated Sparrow	0	0	0	0	5	2	1	0	2	0	16	70	−9
Dark-eyed Junco	14	112	78	163	1349	245	115	125	306	200	77	19,957	+2
Snow Bunting	180	0	6	0	17	1	0	0	5	0	40	3,918	−44
Red-winged Blackbird	0	0	0	0	1	0	1	0	0	0	20	1,041	−53
Common Grackle	0	0	0	*	4	0	0	0	3	0	25	122	−64
Purple Finch	0	14	0	2	85	2	6	0	1	0	67	2,398	+63
House Finch	78	115	165	52	330	303	43	12	249	1	71	5,843	+286
Pine Siskin	0	0	0	0	13	0	1	0	3	0	35	1,263	−71
American Goldfinch	42	122	78	55	442	148	42	20	41	260	84	11,459	−15
Evening Grosbeak	0	0	0	0	0	0	0	0	0	0	21	1,443	−74
House Sparrow	1167	222	212	521	1775	1346	107	127	395	200	79	52,997	−20
Total Species	47	41	44	39	74	65	48	41	65	40			

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

Table 8. Species found on 15 or fewer counts.

Species	Number of Counts	Number of Birds	Count and Number
Common Loon	2	14	Madison 13, (Hartford), (Lake Geneva), Milwaukee 1
Pied-billed Grebe	2	2	Hudson 1, Oshkosh 1
Horned Grebe	1	2	Madison 2
Red-necked Grebe	1	1	Fond du Lac 1
Western Grebe	1	1	Madison 1
Double-crested Cormorant	2	16	Green Bay 4, Appleton 12, (Madison)
Great Blue Heron	15	22	New Richmond 1, Durand 1, Appleton 1, Trempealeau 1, LaCrosse 2, Poynette 1, Sauk City 1, Clyde 1, (Mount Horeb), Madison 4, Blanchardville 1, Waukesha 2, Lake Geneva 1, Woodland Dunes SE 1, Riveredge 2, Hales Corners 2
Tundra Swan	14	545	Bayfield 12, Ephraim 6, Pensaukee 76, LaCrosse 17, Poynette 2, Richland Center 106, Mount Horeb 93, Madison 168, Bridgeport 5, Fond du Lac 20, Green Lake 9, Lake Geneva 17, Hales Corners 12, Kenosha 2
Trumpeter Swan	2	3	Poynette 2, Beloit 1
Mute Swan	11	52	Manitowish Waters 1, Ephraim 9, Shawano 6, Poynette 1, Madison 6, Green Lake 1, Hartford 16, Oconomowoc 3, Waukesha 1, Beloit 1, Burlington 7
Snow Goose	5	56	Green Bay 3, Appleton 1, (Mount Horeb), Oshkosh 50, Fond du Lac 1, Riveredge 1
Wood Duck	15	40	Grantsburg 14, Holcombe 1, Wisconsin Rapids 1, Ephraim 1, Caroline 1, Green Bay 1, Wautoma 3, Appleton 4, LaCrosse 3, Madison 2, Green Lake 1, (Hartford), Oconomowoc 1, Waukesha 3, Beloit 3, Burlington 1
Green-winged Teal	2	2	Sauk City 1, Fond du Lac 1
Northern Pintail	7	9	Stevens Point 1, Green Bay 1, Appleton 2, Oshkosh 1, Milwaukee 1, Hales Corners 2, Burlington 1
Northern Shoveler	6	432	Green Bay 10, Appleton 65, Madison 352, Fond du Lac 2, Green Lake 1, Riveredge 2
Gadwall	8	430	Stevens Point 2, Peshtigo 3, Appleton 10, Madison 384, Green Lake 8, Horicon Marsh 1, Cooksville 8, Milwaukee 14
American Wigeon	7	50	Peshtigo 1, (Ephraim), Appleton 7, Madison 37, Green Lake 2, Waukesha 1, Riveredge 1, Burlington 1
Canvasback	15	124	Green Bay 1, Appleton 6, Trempealeau 9, LaCrosse 4, Madison 24, Bridgeport 9, Platteville 1, Oshkosh 1, Green Lake 40, Hartford 2, Lake Geneva 14, Woodland Dunes NE 6, Riveredge 1, Milwaukee 1, Racine 5
Redhead	8	29	Green Bay 3, Appleton 5, Madison 9, Bridgeport 1, Hartford 2, Lake Geneva 3, Riveredge 1, Milwaukee 5
Ring-necked Duck	11	30	Stevens Point 1, Green Bay 6, Fremont 2, Appleton 3, Madison 8, Oshkosh 1, Green Lake 4, (Hartford), Cooksville 1, Kewaunee 1, Plymouth 1, Racine 2
Greater Scaup	13	7087	Hudson 1, Stevens Point 1, Ephraim 314, Green Bay 1, Appleton 1, Oshkosh 1, Green Lake 1, Oconomowoc 5, Woodland dunes SE 6, Riveredge 174, Milwaukee 5845, Hales Corners 75, Racine 662
Harlequin Duck	1	2	Kewaunee 2
Oldsquaw	9	1245	Durand 1, Ephraim 37, Madison 2, Bridgeport 1, Kewaunee 1004, Riveredge 60, Milwaukee 132, Racine 7, Kenosha 1
Black Scoter	1	5	Ephraim 5
Surf Scoter	1	2	Milwaukee 2
White-winged Scoter	2	11	Ephraim 10, Hartford 1
Barrow's Goldeneye	1	1	Milwaukee 1
Hooded Merganser	15	156	Ashland 2, Hudson 5, Stevens Point 1, Green Bay 1, Wautoma 2, Appleton 10, Madison 56, Oshkosh 1, Green Lake 20, (Hartford) Oconomowoc 39, (Lake Geneva), Plymouth 2, Riveredge 7, Milwaukee 7, Racine 1, Kenosha 2
Red-breasted Merganser	13	347	Ephraim 14, Green Bay 3, Appleton 4, Madison 4, Oconomowoc 5, Lake Geneva 20, Kewaunee 85, Woodland Dunes SE 4, Riveredge 35, Milwaukee 149, Hales Corners 3, Racine 13, Kenosha 8
Ruddy Duck	6	22	Appleton 3, Madison 7, Hartford 2, Oconomowoc 1, Riveredge 6, Milwaukee 3
Turkey Vulture	3	6	Shawano 1, Baraboo 4, Blanchardville 1
Red-shouldered Hawk	4	4	Peshtigo 1, Poynette 1, Sauk City 1, Stockbridge 1, (Cooksville), (Riveredge)
Golden Eagle	3	3	Durand 1, Nelson 1, Clyde 1
Merlin	2	2	Durand 1, LaCrosse 1
Gray Partridge	5	72	Green Bay 11, Poynette 9, Bridgeport 41, Platteville 1, Fond du Lac 10
Spruce Grouse	1	2	Phelps 2
Greater Prairie-Chicken	1	6	Arpin 6
Sharp-tailed Grouse	1	16	Gilman 16
Northern Bobwhite	3	33	(Wautoma), Sauk City 1, Richland Center 28, Bridgeport 4
King Rail	1	2	Poynette 2
Virginia Rail	2	4	Poynette 3, Madison 1
Sandhill Crane	1	1	Pensaukee 1, (Green Lake)
Killdeer	4	4	Appleton 1, Richland Center 1, Bridgeport 1, Milwaukee 1
yellowlegs spp.	1	1	Racine 1
Common Snipe	7	13	Shawano 1, LaCrosse 1, Poynette 2, Richland Center 1, Mount Horeb 3, Madison 1, Blanchardville 4
Bonaparte's Gull	4	87	Milwaukee 1, Hales Corners 59, Racine 1, Kenosha 26

continued

Table 8. (*Continued*)

Species	Number of Counts	Number of Birds	Count and Number
Thayer's Gull	2	2	Appleton 1, Milwaukee 1
Glaucous Gull	3	4	Appleton 1, (Oshkosh), Kewaunee 2, Milwaukee 1
Greater Black-backed Gull	3	4	Kewaunee 2, Woodland Dunes NE 1, Milwaukee 1
Snowy Owl	3	3	(Willard), Pensaukee 1, Oshkosh 1, Fond du Lac 1
Long-eared Owl	8	19	Spruce 1, Shiocton 1, Poynette 1, Bridgeport 1, Oshkosh 1, Waukesha 6, Woodland Dunes NE 7, Riveredge 1
Short-eared Owl	2	4	Stockbridge 1, (Green Lake), Racine 3
Northern Saw-whet Owl	5	7	Black River Falls 1, Pensaukee 2, Shawano 1, Appleton 1, Clyde 2
Yellow-bellied Sapsucker	7	11	Hudson 1, Appleton 1, Sauk City 1, Madison 1, Lake Geneva 1, Riveredge 1, Milwaukee 3, Hales Corners 1, Racine 1
Black-backed Woodpecker	2	2	Fifield 1, Woodland Dunes SW 1
Gray Jay	7	101	Manitowish Waters 13, Clam Lake 19, Oxbo 15, Fifield 7, Phelps 8, Three Lakes 20, Rhinelander 19
Boreal Chickadee	3	24	Clam Lake 4, Phelps 9, Three Lake 11
Tufted Titmouse	14	165	Chippewa Falls 30, Ephraim 1, LaCrosse 6, Baraboo 3, Poynette 30, Sauk City 19, Richland Center 11, Mount Horeb 13, Bridgeport 33, Platteville 8, Blanchardville 2, Hartford 5, Cooksville 1, Beloit 3
Carolina Wren	2	2	Appleton 1, LaCrosse 1, (Madison)
House Wren	1	1	Oconomowoc 1
Winter Wren	4	5	Green Bay 1, Blanchardville 2, Waukesha 1, Lake Geneva 1
Marsh Wren	1	1	Madison 1
Ruby-crowned Kinglet	1	2	Sauk City 2
Eastern Bluebird	5	21	Caroline 1, Trempealeau 9, Poynette 3, Sauk City 3, Madison 5
Hermit Thrush	3	3	Appleton 1, LaCrosse 1, Madison 1
Varied Thrush	2	2	Gilman 1, Owen 1
Gray Catbird	2	2	Shiocton 1, Woodland Dunes SE 1, (Milwaukee)
Northern Mockingbird	1	1	Madison 1
Brown Thrasher	4	4	Bayfield 1, Spencer 1, Ephraim 1, (Fort Atkinson), Racine 1
Water Pipit	1	1	Madison 1
Bohemian Waxwing	7	70	Bayfield 16, Ashland 9, Phelps 13, Wausau 10, New Richmond 10, Peshtigo 7, Shawano 5
Yellow-rumped Warbler	6	8	Fremont 1, Appleton 2, (Madison), Blanchardville 1, Oshkosh 1, Woodland Dunes NE 1, Riveredge 2
Rose-breasted Grosbeak	1	1	Kenosha 1
Rufous-sided Towhee	3	4	Sauk City 1, Madison 2, Racine (Spotted) 1
Field Sparrow	4	4	Wisconsin Rapids 1, Poynette 1, Sauk City 1, Waukesha 1
Vesper Sparrow	1	1	Blanchardville 1
Fox Sparrow	5	6	Appleton 1, Madison 1, Bridgeport 1, Platteville 2, Oconomowoc 1
White-crowned Sparrow	3	7	New Richmond 1, Madison 1, Racine 5
Lapland Longspur	11	599	Willard 125, (Wisconsin Rapids), Shawano 6, Appleton 2, Poynette 300, Madison 73, Bridgeport 1, Blanchardville 4, Oshkosh 20, Fond du Lac 10, Randolph 50, Horicon Marsh 8, (Riveredge)
meadowlark spp.	8	13	Durand 1, Appleton 1, Richland Canter 1, Madison 1, Blanchardville 2, (Beloit), Kewaunee 5, Racine 1, Kenosha 1
Yellow-headed Blackbird	1	1	Fond du Lac 1
Rusty Blackbird	7	11	Wautoma 1, Madison 2, Blanchardville 2, Fond du Lac 2, Waukesha 1, Cooksville 1, Beloit 2
Brewer's Blackbird	1	1	Madison 1
Brown-headed Cowbird	14	206	(Shiocton), Fremont 14, Kickapoo Valley 1, Poynette 9, Richland Center 3, Madison 6, Bridgeport 5, Oshkosh 4, Fond du Lac 40, Kettle Moraine 1, Horicon Marsh 71, Oconomowoc 5, Beloit 1, Riveredge 4, Racine 42
Pine Grosbeak	14	285	Bayfield 12, Ashland 10, Gurney 12, Grantsburg 26, Luck 1, Clam Lake 27, Oxbo 117, Fifield 12, Phelps 7, Three Lakes 18, Rhinelander 1, Wausau 33, Shawano 5, Hofa Park 4
Red Crossbill	6	91	Bayfield 4, Oxbo 5, Phelps 60, Lakewood 3, Gilman 18, LaCrosse 1, (Riveredge)
White-winged Crossbill	2	8	Clam Lake 6, Shawano 2
Common Redpoll	15	142	Grantsburg 39, Luck 3, Clam Lake 22, Oxbo 9, Rhinelander 2, Wausau 7, Gilman 6, Owen 1, Arpin 30, Ephraim 6, Shawano 3, Hofa Park 5, Platteville 1, Riveredge 2, Racine 6

Parentheses indicate species was seen within 3 days of the count but not on the count.

cies occurring in record numbers included Common Loon (14), Canada Goose (384,804), Wood Duck (40), Mallard (38,997), Northern Shoveler (432), Bufflehead (1,213), Hooded Merganser (156), and Common Merganser (11,051). Near record numbers of Double-crested Cormorants (16), Tundra Swans (545), Snow Geese (56), American Wigeons (50), and Redheads (29) were also seen, and all other species appeared in

above average numbers, except the American Black Duck. Numbers of Greater Scaup (7,087) were the highest since 1969. The Red-necked Grebe, Western Grebe, Barrow's Goldeneye, Trumpeter Swans, Black Scoters, Surf Scoters, and Harlequin Ducks were the most exciting records.

Hawks and Eagles—Last year was an exceptional year for hawks and eagles, and this year was even better. Occurring in record numbers were Bald Eagles (544), Northern Harriers (131), Sharp-shinned Hawks (96), Cooper's Hawks (113), Red-tailed Hawks (2,471), and American Kestrels (867). Numbers of Rough-legged Hawks (488) were also above normal, but counts of Northern Goshawks and Red-shouldered Hawks were down. Merlins were seen at Durand and LaCrosse, Turkey Vultures at Shawano, Baraboo, and Blanchardville, and Golden Eagles at Durand, Nelson, and Clyde.

Grouse, Pheasants, Quail, etc.—A record number of Wild Turkeys was seen (2,022 on 33 counts), indicating a continued expansion of populations and range within the state. Populations of Ring-necked Pheasants were 66% above the recent 10-year average because of breeding success last spring and snow cover that made them visible. However, numbers of Ruffed Grouse, Gray Partridges, and Northern Bobwhite remained much below normal. Greater Prairie-Chickens (6) were seen only at Arpin, and Sharp-tailed Grouse (16) only at Gilman. A highlight was 2 Spruce Grouse sighted on the Phelps count.

Gulls and Other Waterbirds—Because of much open water, it was a good year for several water-loving birds. American Coots appeared in record numbers (7,068) and the 22 Great Blue Herons was well above average. Great Black-backed Gulls were found at Kewaunee, Woodland Dunes NE, and Milwaukee, and Thayer's Gulls appeared at Appleton and Milwaukee. However, numbers of Bonaparte's Gulls, Ring-billed Gulls, Herring Gulls, and Glaucous Gulls were about average. It was a poor year for Common Snipe, with the lowest total since 1972, and number of Belted Kingfishers were 17% below normal. Killdeers appeared on 4 counts, and a Sandhill Crane was found a Pensaukee. Other highlights were Virginia Rails at Poynette and Madison, and a King Rail at Poynette; these birds all responded to calls played from a tape. A shorebird with a white rump patch was seen flying over Lake Michigan at Racine; it most likely was a species of yellowlegs, but was too far away for positive identification.

Doves—Rock Doves (29,389) and Mourning Doves (16,080) were both seen in record numbers.

Owls—The common owls, Eastern Screech-Owl, Great Horned Owl, and Barred Owl all occurred in about normal numbers. Numbers of Snowy Owls and Short-eared Owls were low, especially the former. Northern Saw-whet Owls were found in record numbers (7 on 5 counts), and the 19 Long-eared Owls was well above the recent 10-year average.

Woodpeckers—Numbers of Downy Woodpeckers, Red-headed Woodpeckers, and Red-bellied Woodpeckers were slightly below normal, and Hairy Woodpeckers were 18% below normal. On the other hand, Pileated Woodpeckers, Yellow-bellied Sapsuckers, and Northern Flickers occurred in above average numbers. Black-backed Woodpeckers were found at Fifield and Woodland Dunes SW.

Jays, Crows, Chickadees, Nuthatches, etc.—Blue Jays and Gray Jays, and Black-capped Chickadees were found in about normal numbers. American Crows were 27% more numerous than the recent 10-year average, while counts of Common Ravens were 44% below the average. Tufted Titmouse numbers (165) were down from last year, probably as a result of very cold temperatures last January, but remained above the recent 10-year average. Counts of White-breasted Nuthatches were down 13%. However, Red-breasted Nuthatch counts were up 20% due to large numbers in northern Wisconsin; they were very scarce on southern counts. Boreal Chickadees occurred in record numbers (24 on 3 northern counts).

Creepers, Kinglets, Wrens, and Warblers—Brown Creepers were unusually abundant, while numbers of Golden-crowned Kinglets were about normal. Two Ruby-crowned Kinglets on the Sauk City Count deserve special mention. The 5 Winter Wrens was somewhat below average and Carolina Wrens at Appleton and LaCrosse represented their lowest total since 1987, probably because of unusually cold weather last winter. A Marsh Wren was seen at Madison; having been seen the week before, it responded to a tape that was played at the same location by jumping to the top of a cattail and chipping. The discovery of a House Wren at Oconomowoc was the first since Ed Prins' sighting in 1939. Eight Yellow-rumped Warblers on 6 counts was distinctly above average.

Thrushes, Shrikes, Waxwings, etc.—It was an excellent year for thrushes, Northern Shrikes, and Cedar Waxwings. Numbers of American Robins (1,463) were at near record levels, and the 21 Eastern Bluebirds on 5 counts was well above normal. The 3 Hermit Thrushes was slightly below average, and Varied Thrushes on two counts, Gilman and Owen, was typical of most Wisconsin Christmas Counts. While numbers of Cedar Waxwings (3,151) were 70% above the recent 10-year average, the invasion of 70 Bohemian Waxwings into northern Wisconsin was the poorest since 1982. Northern Shrikes were unusually numerous, especially in the north, the count (259) being the highest since 1985. Brown Thrashers were found at Bayfield, Spencer, Ephraim, and Racine, and Gray Catbirds appeared at Shiocton and Woodland Dunes SE. The Northern Mockingbird at Madison was a highlight.

Sparrows, etc.—Numbers of Northern Cardinals, American Tree Sparrows, Dark-eyed Juncos, and White-crowned Sparrows were near the recent 10-year average, but White-throated Sparrow, Fox Sparrow, and Field Sparrow were below

the average. Swamp Sparrows (79) and Song Sparrows (257) were distinctly more numerous in 1994 than in most years. Rufous-sided Towhees appeared at Sauk City, Madison (2 males), and Racine (spotted western race). A female Rose-breasted Grosbeak at Kenosha and a Vesper Sparrow at Blanchardville were exciting finds.

Open Country Birds—A good snow cover over parts of the state enhanced counts of Horned Larks, Meadowlarks, and Lapland Longspurs, all of which were well above the 10-year average. However, Snow Buntings appeared in numbers that were 44% below the recent 10-year average.

Blackbirds—For the second consecutive year, counts of blackbirds were extremely low. Only Brown-headed Cowbirds were found in about normal numbers. Numbers of Red-winged Blackbirds were 53% below the recent 10-year average, and Common Grackles were 64% below; the 11 Rusty Blackbirds was the lowest count since 1985, and only one Brewer's Blackbird was seen. The latter was found at Madison, and the sighting was well-documented. A female Yellow-headed Blackbird at Fond du Lac was a welcome addition.

Finches—It was a very poor year for winter finches, with one exception; Purple Finches appeared in record numbers, being especially common on northern counts. Numbers of Pine Siskins, Evening Grosbeaks, Common Redpolls, and both species of crossbills were way below normal, and American Goldfinch numbers were 15% below the 10-year average. All of these species occurred mostly on northern counts. Pine Grosbeaks occurred in about normal numbers, and were restricted to the northern half of the state. After a decline in numbers of House Finches last year for the first time, there was a substantial increase to new record numbers in 1994 (5,843) and reports from all except 14 counts. This indicates House Finches are still expanding their range and population in Wisconsin. I am concerned that some observers are still not familiar with this species, and that occasionally it is being misidentified as a Common Redpoll, Red Crossbill, or Purple Finch.

Summary—Again, it was a great Christmas Count, one that will probably not be equaled for many years. Most observers and compilers also expressed pleasure with results of their counts. While documentation for rarities was generally very good, sightings of a Golden Eagle, 2 Turkey Vultures, a White-crowned Sparrow, and 20 Field Sparrows on a single count were not included because documentation was not provided. Reports of a Harris' Sparrow, an American Woodcock, a Barn Owl, one Red-shouldered Hawk, an Eastern Phoebe, and 2 Loggerhead Shrikes were also rejected because documentation was inadequate or indicated some other species was seen. Next year, the Common Loon will be added to the list of uncommon species on the report form, and documentation will be requested for Field Sparrows. It is very important to provide documentation for species not listed on the report form, and for

species marked with an asterisk; this should be done when counts are given to the compiler, not at a later date. There is no charge for publication of counts in the *Passenger Pigeon,* only for those also published in *American Birds.* Submission of counts to *American Birds* (on their report form), as well as to the Wisconsin Society for Ornithology, is encouraged. Individuals participating in counts should submit their reports and documentation to the count compiler, and not to Daryl Tessen.

If you wish to participate in a count in 1995, please contact the compiler in your area. If you plan to initiate a new count in an area not presently covered (Figure 1), please write to me to avoid conflicts and to obtain a report form.

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50 Years Ago in *The Passenger Pigeon*

During 1944, Mrs. Arthur Koehler and her teenage son visited the Forest Hill Cemetery in Madison on 31 census trips and spent 144 hours on nest trips. The 80–90 acre cemetery was bounded by a county highway, a railroad track, a golf course, and the backyards of a street of city houses. Using a map, which showed the 5 miles of roads in the cemetery, locations of birds and nests were plotted on each trip. Twentyfour species were believed to nest in the cemetery, and detailed records were maintained for nests that were located. Ninetytwo robin's nests were found before June 15, and 24 mourning dove nests were discovered. Many of these nests were in 5 to 15-foot tall white spruce. A small colony of band swallows nested on the border between the cemetery and golf course. Other species for which 3 or more nests were found included flicker, red-headed woodpecker, blue jay, catbird, grackle, and chipping sparrow. (Excerpts from Volume 7, 1945)

What is the nesting population in the Forest Hill Cemetery today? What are the differences? Now that the Wisconsin Breeding Bird Atlas has started, this would be a perfect time to re-survey this area. I'm sure the Pigeon editor would love to publish your observations about the current situation in the cemetery. Follow-up comparisons are needed to better understand how bird populations have changed so we might better anticipate future changes. How about it? The challenge has been issued. Any takers?

Black-crowned Night-Heron *by William R. Stott, Jr.*

Breeding Birds of the Mink River Natural Area in Door County

Breeding bird surveys of the Mink River Natural Area were conducted in 1989. Observations were made in lowland forest and an open wetland. The results are summarized.

by Andrew W. Zovnic and Robert W. Howe

The Mink River Natural Area is one of Wisconsin's most important nature reserves. Although less than 2000 ha in size, it encompasses the central portion of an entire watershed and includes one of the only undeveloped estuarine wetlands along the coast of Lake Michigan (Keough 1986). The watershed empties into Rowley's Bay from a bedrock valley extending across Highway 42 near the tip of the Door Peninsula (T32N, R28E and 29E). Keough (1986) presented a detailed description of the area's geology, hydrology, and vegetation features. According to her maps, marsh and wet meadow covered approximately 200 ha along the margins of the inlet during 1981, an area consistent with our observations during 1990. Lowland forest, dominated mainly by northern white cedar (*Thuja occidentalis*) and tamarack (*Larix laricina*), extends along the margins of the wetlands, covering more than 300 ha. Upland forest occupies approximately 100 ha in the higher portions of the watershed, although a significant fraction of the original forest has been cleared for agricultural fields.

This study focuses on breeding birds of two major habitats comprising the core of the natural area: lowland forest and emergent wetland. Our purpose is to systematically document the breeding bird community and to provide a baseline for future studies at this site and for comparisons with other forested areas along the Lake Michigan shoreline, including Toft Point Natural Area, The Ridges Sanctuary, Newport Beach State Park, Mud Lake Wildlife Area, and Whitefish Dunes State Park.

Site Description

Lowland Forest—Our lowland forest site was located at latitude 45° 10⁺, longitude 87° 01⁺ in the SW ¼ of the SE ¼ of Section 24, T34N R28E (Fig. 1). The 12 ha plot has relatively flat topography (mean elevation 147 m above sea level interrupted by moderate ridges and

swales running parallel with the lakeshore. The dense tree canopy is dominated by *Thuja occidentalis,* with patches of *Abies balsamea* and scattered *Betula papyrifera, Betula lenta, Larix laricina,* and *Fraxinus nigra.* The shrub layer is dominated by *Cornus stolonifera.* A moist carpet of *Sphagnum* covers much of the ground, with pools of standing water persisting well into the summer. The site has numerous cedar blowdowns and associated openings. A small stream flows diagonally through the site from a spring pond (approximately 10 m ± 15 m) near the northeastern border. The maximum depth of the spring pond was 1.5 m during the summer of 1989. Mature cedar-dominated forest extends beyond the edges of the plot. Evidence of selective cutting can be found throughout the plot but many of the trees are quite large; intensive logging probably has never occurred here. Just east of the study plot is a large blowdown area where dead trees are densely stacked, providing ideal nesting habitat for birds like Winter Wren and other shrub- or ground-nesting birds.

Open Wetland—The open wetland site is located in a 37 ha open wetland at the upper reaches of the Mink River watercourse, latitude 45° 10⁺, longitude 87° 3⁺, SW¼ of SE¼ Section 24, T32N, R28E. The site includes persistent and non-persistent lacustrine-littoral wetlands (Cowardin 1979), classified by Keough (1986) as shallow marsh dominated by *Carex* spp. and deep marsh dominated by *Scirpus* spp. During the period of this investigation the shoreline along the river had receded to expose extensive areas of mud flats, also included in the study area. By 1993 most of these muddy areas had become submerged due to higher lake levels. The wetland vegetation had changed markedly from that reported by Keough (1986), with cattails (*Typha angustifolia*) replacing areas of *Scirpus* and the vegetation assuming a drier character as a result of a widespread drought during 1988 (NOAA climatic records). The sedge meadow, a significant element of the open wetland study area, was dominated by *Carex hystericina, C. bebbii, C. cephalantha, Scirpus validus, Eleocharis erythriopoda,* and *Sagittaria* sp.

Methods

The lowland forest study area was marked with a 12 ha grid system. Plastic color-coded flags were placed at 44 m intervals, with 16 census points distributed 88 m apart. Most of the points were sampled 3 times; all were visited at least once between 26 May and 1 July 1989.

Censuses were conducted in the early morning from approximately 5:30 A.M. through 8:30 A.M. Census procedures generally followed the methods for North American "Breeding Bird Censuses" (Hall 1946, Van Velzen 1972), but modifications were necessary because of the dense vegetation and difficulty maneuvering through the habitat. Territories could not be mapped easily (using the method of Kendeigh 1944) because of the long time required for observers to travel between points and the resulting uncertainty about double counting. Instead, avian densities were esti-

mated by dividing the mean number of distinct registrations among all points by the approximate area covered by each point count. Species-specific "areas of detectability" were estimated by personal experience and from published data involving similar species (Emlen and Dejong 1981; Wolf, Howe, and Davis 1995). Results obtained from this method were compared with maps of bird registrations to obtain an estimate of overall bird densities.

The census method for the wetland site was complicated by the relative inaccessibility of some parts of the target area and by the difficulty of detecting certain species like rails and wading birds. Seven census points (Fig. 1) were established along the two main branches of the Mink River channel. The first three censuses were carried out exclusively from canoes. Because several parts of the target area were not easily observed in this way, however, later censuses included observations from the shallow marsh/sedge meadow which could be traversed on foot due to low water levels.

Two night censuses were carried out at the open wetland, aided by playback of tape recordings of rails and bitterns. Bird densities in the open wetland were estimated by evaluating mapped bird registrations from the six censuses.

Results

Altogether, 36 species were recorded in the lowland forest site (Table 1a), over half of which were encountered rarely or only once. The most abundant species were Black-throated Green Warbler, Ov-

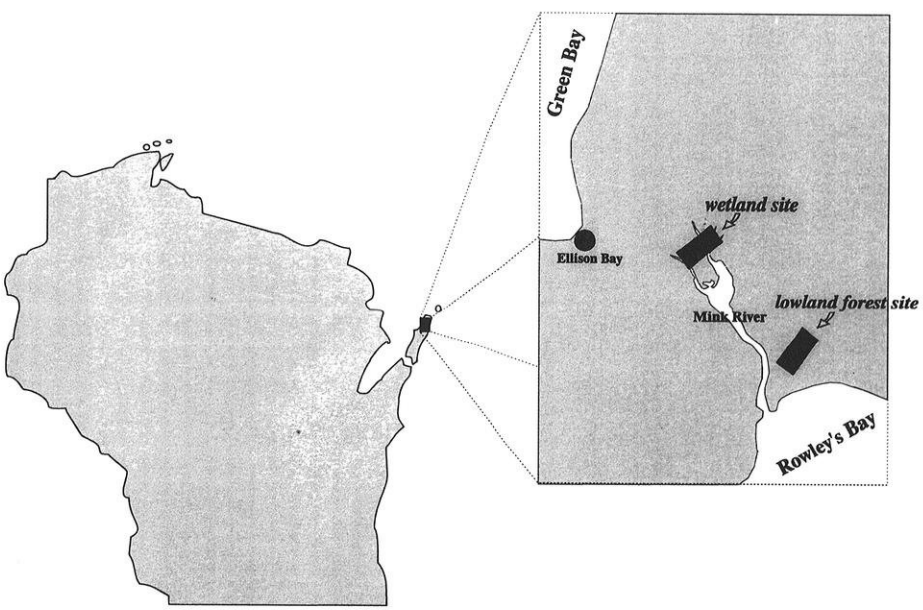

Figure 1. Location of Mink River study areas (shaded boxes).

Table 1a. Estimated number of territories and vocal detection distances for common species in the 12 ha. lowland forest site. Vocal detection distances were estimated within the habitat and from studies in Northern Wisconsin (Wolf et al. 1995). Results are based on 7 visits totaling 20 hours.

Species	Vocal detection distance (meters)	Density (# males/pt.)	Total # of males	Estimated # of territories
Black-and-white Warbler (*Mniotilta varia*)	100	0.16	1.91	2
Black-capped Chickadee (*Parus atricapillus*)	100	0.28	3.3	3
Black-throated Green Warbler (*Dendroica virens*)	100	0.41	4.95	5
Blackburnian Warbler (*Dendroica fusca*)	100	0.1	1.52	2
Blue Jay (*Cyanocitta cristata*)	175	0.21	2.52	3
Brown Creeper (*Certhia familiaris*)	75	0.1	1.23	2
Canada Warbler (*Wilsonia canadensis*)	100	0.13	1.53	2
Eastern Wood-Pewee (*Contopus virens*)	125	0.01	0.17	1
Golden-crowned Kinglet (*Regulus satrapa*)	75	0.11	1.32	2
Great Crested Flycatcher (*Myiarchus crinitus*)	100	0.07	0.87	1
Hairy Woodpecker (*Dendrocopus villosus*)	100	0.09	1.13	1
Hermit Thrush (*Catharus guttatus*)	100	0.05	0.64	1
Nashville Warbler (*Vermivora ruficapilla*)	100	0.25	2.95	3
Northern Waterthrush (*Seiurus noveboracensis*)	125	0.15	1.78	2
Ovenbird (*Seiurus aurocapillus*)	125	0.27	3.22	4
Red-breasted Nuthatch (*Sitta canadensis*)	75	0.13	1.54	2
Rose-breasted Grosbeak (*Pheucticus ludovicianus*)	125	0.02	0.22	1
Winter Wren (*Troglodytes troglodytes*)	125	0.2	2.39	3

enbird, Winter Wren, Black-capped Chickadee, Blue Jay, and Nashville Warbler. Nests were found for two species, Canada Warbler and Sharp-shinned Hawk, the latter not encountered regularly during the censuses. We observed a rich diversity of warblers (10 species) and northern or boreal species including Hermit Thrush, Golden-crowned Kinglet, Dark-eyed Junco, and Northern Raven.

The open wetland yielded a lower number of species (33), dominated by a few very abundant species: Red-winged Blackbird, Sedge Wren, Common Yellowthroat, and Song Sparrow (Table 2a). Particularly notable was the unexpected finding of Yellow Rails, a species known from few nesting localities in Wisconsin (Grimm 1992). On 9 June 1989, we heard at least four Yellow Rails at the open wetland site. Two individuals were flushed (separately) approximately 5 meters away from us. The white wing markings were clearly visible, confirming the auditory identifications made earlier. Interestingly, these birds continued calling from the sedge-dominated wetland until approximately 8:20 A.M. We observed the rails again on 21 June and 1 July.

Additional bird species were seen or heard along the Mink River cor-

Table 1b. Other birds recorded at the lowland forest siteI. Many of these species undoubtedly nest in the area, but their numbers were too low for reasonable territory estimates.

Species
American Robin (*Turdus migratorius*)
American Crow (*Corvus brachyrhynchos*)
Broad-winged Hawk (*Buteo platypterus*)
Cedar Waxwing (*Bombycilla cedrorum*)
Common Yellowthroat (*Geothlypis trichas*)
Common Raven (*Corvus corax*)
Dark-eyed Junco (*Junco hyemalis*)
Downy Woodpecker (*Dendrocopus pubescens*)
House Wren (*Troglodytes aedon*)
Mourning Warbler (*Oporornis philadelphia*)
Northern Flicker (*Colaptes auratus*)
Pine Warbler (*Dendroica pinus*)
Ruffed Grouse (*Bonasa umbellus*)
Scarlet Tanager (*Piranga olivacea*)
Sharp-shinned Hawk (*Accipiter striatus*)
Veery (*Catharus fuscescens*)
White-throated Sparrow (*Zonotrichia albicollis*)
Yellow-rumped Warbler (*Dendroica coronata*)

ridor during this study (Tables 1b, 2b, and 2c) but did not occur at the designated study sites. Notable records included Bald Eagle and Osprey, which have begun to nest again in Door County during recent years.

Table 2a. Resident birds in the 37 ha. open wetland site during the summer of 1989. Territories were estimated subjectively from maps produced at 7 census points during 6 visits, together totalling 13 observation hours.

Species	Estimated # of territories
American Bittern (*Botaurus lentiginosus*)	1
Black-crowned Night-Heron (*Nycticorax nycticorax*)	1
Blue-winged Teal (*Anas discors*)	2
Common Yellowthroat (*Geothlypis trichas*)	8
Common Merganser (*Mergus merganser*)	2
Great Blue Heron (*Ardea herodias*)	2
Killdeer (*Charadrius vociferus*)	2
Mallard (*Anas platyrhynchos*)	2
Marsh Wren (*Cistothorus palustris*)	5
Red-winged Blackbird (*Agelaius phoeniceus*)	27
Sandhill Crane (*Grus canadensis*)	1
Sedge Wren (*Cistothorus platensis*)	14
Song Sparrow (*Melospiza melodia*)	5
Sora (*Porzana carolina*)	1
Spotted Sandpiper (*Actitis macularia*)	2
Swamp Sparrow (*Melospiza georgiana*)	4
Virginia Rail (*Rallus limicola*)	2
Wood Duck (*Aix sponsa*)	2
Yellow Rail (*Coturnicops noveboracensis*)	3

Discussion

Although this study covered only a small portion of the Mink River Natural Area, our results reveal significant assemblages of forest and wetland birds, including several regionally rare or uncommon species. Canada Warbler populations in eastern North America have declined during recent years (Thompson et al. 1993); our discovery of a nest with four young at the lowland forest site represents the first reported breeding recorded for this species in Door County (Lukes 1989). A second pair at the same site was observed carrying food. A pair of Hermit Thrushes also was observed at the site throughout the census period, representing the first summer reports for this species in Door County.

As far as we know, our observations of Yellow Rails represent the first documented records of this species in Door County. We note that the sedge mat on which the birds were encountered is highly fragile and should not be traversed in search of

Table 2b. Other species recorded at the open wetland site. These species were observed only briefly or were seen flying over sampling area.

Species
American Goldfinch (*Carduelis tristis*)
American Robin (*Turdus migratorius*)
American Kestrel (*Falco sparverius*)
American Crow (*Corvus brachyrhynchos*)
Bank Swallow (*Riparia riparia*)
Cedar Waxwing (*Bombycilla cedrorum*)
Cooper's Hawk (*Accipiter cooperii*)
Double-crested Cormorant (*Phalacrocorax auritus*)
Eastern Kingbird (*Tyrannus tyrannus*)
Mourning Dove (*Zenaida macroura*)
Northern Harrier (*Circus cyaneus*)
Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)
Tree Swallow (*Tachycineta bicolor*)
Turkey Vulture (*Cathartes aura*)

Table 2c. Other birds seen near (but not within) the openj wetland site.

Species
Alder Flycatcher (*Empidonax alnorum*)
Bald Eagle (*Haliaeetus leucocephalus*)
Belted Kingfisher (*Ceryle alcyon*)
Black-billed Cuckoo (*Coccyzus erthropthalmus*)
Caspian Tern (*Sterna caspia*)
Common Raven (*Corvus corax*)
Golden-winged Warbler (*Vermivora chrysoptera*)
Lesser Yellowlegs (*Tringa flavipes*)
Northern Cardinal (*Cardinalis cardinalis*)
Northern Flicker (*Colaptes auratus*)
Osprey (*Pandion haliaetus*)
Upland Sandpiper (*Bartramia longicauda*)

the birds. Yellow Rails at the Mink River can be heard from a canoe.

Our estimates of population densities at both sites are conservative, but the species lists have considerable value as baseline information. Perhaps as interesting as the species that were identified is the list of expected species that were not found. American Bittern (*Botaurus lentiginosus*), for example, was disappointingly absent from the wetland study area. Northern Parula (*Parula americana*) and Yellow-bellied Flycatcher (*Empidonax flaviventris*) are fairly common in lowland conifer forests of northern Wisconsin, but neither was observed at the Mink River Natural Area. Brown-headed Cowbird (*Molothrus ater*), a brood parasite considered to be a threat to forest birds of eastern North America (Brittingham and Temple 1983), was not encountered at either census area.

The Mink River Natural Area supports a rich and interesting assemblage of birds species. Our study documents 35 species in two major habitats: lowland conifer forest and sedge/cattail wetland. Significant findings include Yellow Rail, Hermit Thrush, Canada Warbler, and other neotropical migrant songbirds. Future studies of upland habitats will be needed to provide a more complete picture of Mink River birds. The Mink River Natural Area is connected with Newport Beach State Park to the north, and lies within 10 miles of other significant forest lands to the south (Mud Lake State Wildlife Area, The Ridges Sanctuary, Toft Point Natural Area). As forest areas in Door County and other Lake Michigan counties become rarer and increasingly fragmented, protection of these remnant forest complexes will be highly significant for the conservation of forest bird communities. The abundance of species like Canada Warbler and other songbirds (e.g., Black-and-white Warbler, Northern Waterthrush) which are uncommon elsewhere in Wisconsin suggest that the Mink River Natural

Area might be considered regionally significant for bird conservation.

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Literature Cited

Brittingham, M.C. and S.A. Temple. 1983. Have cowbirds caused forest songbirds to decline? *BioScience* 33:31–35.

Cowardin, L.A., V. Carter, F.C. Gulet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Office of Biological Services, FWS/OBS/79/31, Washington, DC.

Emlen, J.T. and M.J. Dejong. 1981. The application of song detection threshold distance to census operations. Pp. 346–352. *In* C.J. Ralph and J.M. Scott (eds.). Estimating Numbers of Terrestrial Birds. Studies in Avian Biology 6.

Grimm, M. 1991. Northest Wisconsin Yellow Rail survey. *Passenger Pigeon* 53:115–121.

Hall, G.A. 1946. Breeding-bird censuses—why and how? *Audubon Field Notes* 18:413–416.

Kendeigh, S.C. 1944. Measurement of bird populations. *Ecological Monographs* 14:67–106.

Keough, J.R. 1986. The Mink River—a freshwater estuary. *Transactions of the Wisconsin Academy of Sciences, Arts, and Letters* 74:1–11.

Lukes, R. 1989. Birds of Door County. Pp. 107–117. *In* J.C. Palmquist (ed.). *Wisconsin's Door County: A Natural History.* Perin Press, Appleton, WI.

Thompson, F.R., S.J. Lewis, J. Green, and D. Ewert. 1993. Status of Neotropical migrant landbirds in the Midwest: identifying species of management concern. Pp. 145–158. *In* D.M. Finch and P.W. Stangel (eds.). *Status and Management of Neotropical Migratory Birds.* USDA Forest Service General Technical Report RM-229. Rocky Mountain Forest and Range Experiment Station, USDA, Ft. Collins, CO.

Van Velzen, W.T. 1972. Breeding bird census instructions. *American Birds* 6:927–931.

Wolf, A.T., R.W. Howe, and G.J. Davis. 1995. Detectability of forest birds from stationary points. *In* C.J. Ralph, J. Sauer, and S. Droege (eds.). *Point Count Methods for Monitoring Population Trends in North American Birds.* USDA Forest Service General Technical Report, Redwood Sciences Laboratory, Arcata, CA.

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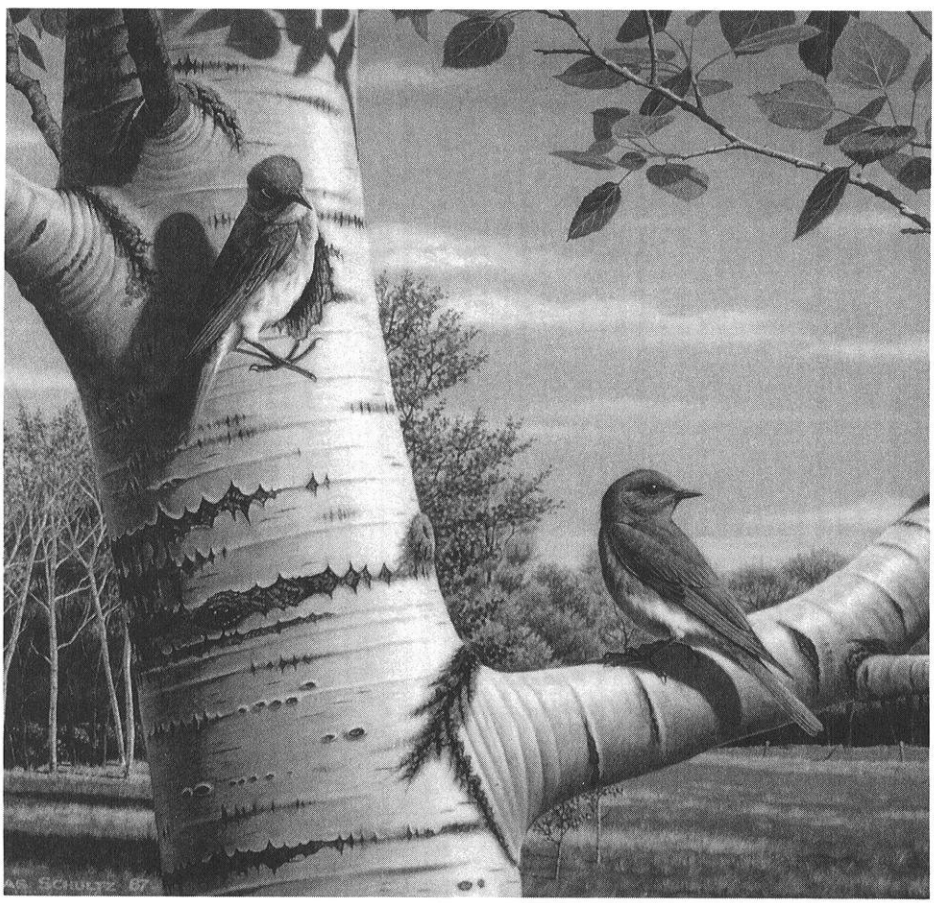

"Bluebird Pair" *by Thomas R. Schultz*

A Survey for the Eastern Taiga Merlin (*Falco columbarius*) in Northern Minnesota, Wisconsin, and Michigan

*There is no recent literature available on the Merlin (*Falco columbarius*) population in northern Minnesota, Wisconsin, and Michigan. We investigated a 1800 km² portion of this area between 1987 to 1992 and used playback recordings and reports from observers to locate active Merlin territories. We banded 89 adults and 115 young. There were 112 occupied nests with 65 successful nests producing 191 young. We also collected nest data, nest tree data, and prey remains.*

by Tom Doolittle and Terry Balding

All races of Merlins (*Falco columbarius*) have a northern holarctic breeding distribution that seldom occurs below the 42 degree parallel. In North America their present breeding range rarely encompasses Oregon and Idaho, while they were historically noted to breed in Montana, the Dakotas, Wisconsin, Michigan, Minnesota, Ontario, Quebec, the Maritimes and Maine (Cade 1982). The southern limits may have extended into Illinois and Iowa (Anderson 1907, Vos Burgh 1913).

In Minnesota nine confirmed breeding records of Merlins between 1935 and 1985 (Brekenridge and Errington 1938, Craighead and Craighead 1940, Beer 1966, Johnson 1982, Wilson 1985). In Wisconsin between 1852 and 1985 there were seven breeding locations (Shoenbeck 1897, Kumlein and Hollister 1903, Lowe 1915, Vos Burgh 1932, Beals 1967, Sindelar and Jacobson 1981, Howk and Matteson 1985). Michigan had no confirmed breeding locations before 1951, but Merlins were listed as breeding in five Upper Peninsula counties between 1951 and 1982 (Payne 1983).

The lack of current information on this little studied population of Merlins of northern Minnesota, Wisconsin and Michigan was the reason for this study. Also there has been an increase in the number of Merlins banded between 1983 and 1991 at

the Hawk Ridge Banding Station (Duluth, MN) and Cedar Grove (Wisconsin) Ornithological Station, there was also an increase in sightings (Allez and Evans, pers. comm.). This information indicated a possible increase in the upper midwest Merlin population and led us to believe we would find an adequate number of Merlins for study. We wanted to provide current information on where Merlins were nesting in the upper Midwest, their abundance, nest success, productivity, and other natural history.

Study Area

The study areas were 1) Voyageurs National Park, Minnesota and associated boundary waters; 2) Isle Royale National Park, Michigan; 3) Duluth, Minnesota and Superior, Wisconsin; 4) Apostle Islands National Lakeshore and the associated Chequamagon Bay, as well as some adjacent agricultural lands in Wisconsin; 5) Pictured Rocks National Lakeshore, Michigan; 6) and two large lakes in Northern Wisconsin, the Turtle Flambeau and the Chippewa Flowages. The combined study areas have a total area of 1858 km^2 and a shoreline length of 2595 km (Fig. 1). All areas are in the tension zone between the boreal forests to the north and the northern hardwoods and northern pines to the south (Ahlgren and Ahlgren 1984). It is intended that a detailed habitat analysis of the nest sites be published later.

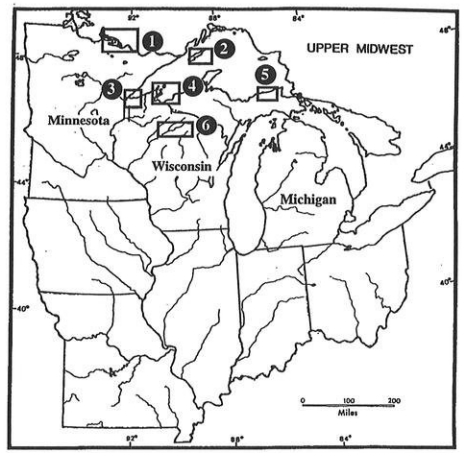

Figure 1. Study Locations in Upper Midwest.

Site number	Site name	Successful nests (1987–1992)
1	Voyageurs National Park, Minnesota	33
2	Isle Royale National Park, Michigan	5
3	Duluth, Minnesota and Superior, Wisconsin	7
4	Apostle Islands National Lakeshore and Chequamagon Bay area, Wisconsin	18
5	Pictured Rocks National Lakeshore, Michigan	0
6	Turtle Flambeau Flowage and Chippewa Flowage, Wisconsin	2

Methods

Each year from 1 April through 6 June an initial survey was conducted using a boat and a playback recording (pb) of a female Merlin to search for signs of breeding activity. Usually, pbs were played near shore and registered 100 db at the speaker of the tape player being used. The tape was played for several seconds followed by 60 sec. of silence to listen

for responses. This pattern of playing followed by silence was repeated three times. During the morning hours pbs were played about 0500–0800 H. to avoid wind and wave noise. The pb was used approximately every 1.5 km of shoreline. Reports of breeding activity, observations of adults on snags along the shore, and rechecking American Crow (*Corvus brachyrhynchos*) and Common Raven (*Corvus corax*) nests that were occupied in previous years, were also utilized to locate Merlin territories. All signs of Merlin activity were located on a map, this provided distribution.

During a second visit to the study areas from 10 June through 28 June, areas were searched for active nests and we attempted to capture and band adult males. CTX mist nets with a live Great Horned Owl (*Bubo virginianus*) were used to capture adult Merlins (Hamerstrom 1986). Human imitations of the Barred Owl (*Strix varia*) and Common Raven were used to lure adult Merlins to the trapping site. Data were collected at this time on the species of nest tree and its diameter, species of bird nest used, and nest height.

A third visit between 24 June and 21 July was used to determine nest success, band the young, and attempt to band adult females. Recapture of adult birds in subsequent years provided site fidelity data while banding the young provided productivity data. Also collected during these visits were data on prey items.

Results and Discussion

Playback recordings were a vital tool in locating Merlins. Seventy-two percent of detections were located solely by pb. Adult males were especially responsive during the 1 April through 20 May courtship period. Responding birds would give return calls and usually approach the pb. The distance of responding birds to the pb was usually about 100 m from the observer and never over 1000 m. Females would occasionally respond by calling from the nest or even approach the pb. Some disadvantages to playbacks were that some breeding pairs were not responsive, and sometimes a Merlin would respond and no nest could be found. Occasionally a pair and an extra male or 2 males would respond at one site. Additional responding Merlins may have been migrants, resident non-breeders, members of an adjacent territory or possibly more than one male attending a nest.

Fifty-seven adult males, 32 adult females, and 115 young Merlins were banded. The banding data demonstrated no site fidelity for females, and 14% for males. This is a turnover rate for males of 86%, similar to that discovered by Schempf and Titus (unpubl. data) in Denali National Park, Alaska. However, the duration of this study was too short to accurately determine site fidelity.

Breeding Merlins were found along the edges of large lakes with irregular shorelines of at least 160 km. Irregular edges in agricultural areas or several small lakes very close together with a connecting corridor were also used. Abundance was determined by kilometers of shoreline/active Merlin nest and distance between active Merlin nests. The mean of all study areas combined was 143 km shoreline/active nest

with a mean of 13.2 km between active nests. The Duluth, Minnesota study area had the highest mean number of 27.6 km shoreline/active nest and a mean distance of 5.4 km between active nests.

All Merlin nests were in conifers, and 70% were in white pine (*Pinus strobus*). Mean tree dbh (diameter at breast height) was 43.8 cm and mean nest height was 15.1 m. American Crow nests accounted for 82% and Common Raven for 12% of the nests used by Merlins. The increase in regional American Crow population (Robbins 1986) may be part of the reason the Merlins seem to be increasing in the study area. Additionally, Merlins were nesting in urban Duluth, Minnesota, and other nearby urban areas and may be beginning an increase similar to that reported by Sodhi et al. (1992). In a sample of 52 nests monitored each year, 90% were not in suitable condition for reoccupancy within three years. Nests located near Lake Superior seemed especially prone to blow outs. Artificial nests were used successfully during this study, details are still under study. This may be a management tool to augment Merlin populations.

Using the terminology of Postupalsky (1974), the 112 occupied Merlin nests located in this study had 65 successful nests which produced 191 young Merlins for a mean of 2.9/successful nests. The number of successful nests for each study area are shown in Figure 1. Productivity ranged from a high of 3.7 young per successful nest in the Chequamagon Bay area to a low of 2.4 young/successful nest on Isle Royale. In Wales changes in habitat were associated with poor nest success of 1.5 chicks fledged per pair annually (Bibby and Nattrass 1986). Olsson (1980), from a sample of 53 successful nests, recorded a mean of 2.6 young per nest, which was considered a stable Merlin population. Oliphant (1978) studied a healthy population of the Richardson Merlin which produced 4.0 young/successful nest. In comparison to these studies we feel the Merlin population we studied reflects a healthy productivity in some parts of the study area, but overall is low but stable.

Collecting prey remains once or twice from each of 65 nest sites provided a limited amount of qualitative data and revealed 34 species of birds, two bat species, dragonflies, and moths (Table 1). The 65 bird remains contained 70% neotropical migrant passerines, since it is generally believed these small birds are in decline this may limit Merlin increases in some areas. Nests where dragonfly remains were found in abundance contained young which were dirty, weak, and had chalky colored ceres and legs. Sometimes when banding the young at these nests the adult birds were not seen, this is different than the usual tenacious nest defense, and suggests that both adults were hunting. Eating dragonflies, both birds hunting, and young in poor condition is probably a reflection of an inadequate diet of small birds. Caches of adult and nestling birds were found near some nests, meaning an adequate prey base was available to some pairs.

Summary

We feel the Merlin seems to have a stable low density population in the

Table 1. List of 36 bird and mammal species and 2 insect groups found as prey remains at 65 Merlin nests for all locations from 1988–1989.

Common name	Scientific name	Number collected
Mourning Warbler	*Oporornis philadelphia*	1
Nashville Warbler	*Vermivora ruficapilla*	3
Common Yellowthroat	*Geothlypis trichas*	1
Black-throated Green Warbler	*Dendroica virens*	1
Yellow-rumped Warbler	*Dendroica coronata*	3
Northern Parula	*Parula americana*	1
Ovenbird	*Seiurus noveboracensis*	1
American Robin	*Turdus migratorius*	3
Swainson's Thrush	*Catharus ustulatus*	2
Hermit Thrush	*Catharus guttatus*	1
Veery	*Catharus fuscescens*	1
Black-capped Chickadee	*Parus atricapillus*	2
Blue Jay	*Cyanocitta cristata*	1
Brewer's Blackbird	*Euphagus cyanocephalus*	1
Downy Woodpecker	*Picoides pubescens*	3
Northern Flicker	*Colaptes auratus*	1
American Goldfinch	*Carduelis tristis*	1
Evening Grosbeak	*Coccothraustes vespertinus*	1
Northern Saw-whet Owl	*Aegolius acadicus*	1
Common Nighthawk	*Chordeiles minor*	1
Cedar Waxwing	*Bombycilla cedrorum*	7
Eastern Bluebird	*Sialia sialis*	2
Red-winged Blackbird	*Agelaius phoeniceus*	3
Common Grackle	*Quiscalus quiscula*	2
Hairy Woodpecker	*Picoides villosus*	1
Cliff Swallow	*Hirundo pyrrhonota*	4
Tree Swallow	*Tachycineta bicolor*	4
Dark-eyed Junco	*Junco hyemalis*	2
Gray Catbird	*Dumetella carolinensis*	1
Chipping Sparrow	*Spizella passerina*	1
White-throated Sparrow	*Zonotrichia albicollis*	1
House Sparrow	*Passer domesticus*	5
American Woodcock	*Scolopax minor*	1
Chimney Swift	*Chaetura pelagica*	1
little brown bat	*Myotis lucifugus*	1
red bat	*Lasiurus borealis*	2
dragonfly	*Odonata* sp	78
luna moth	*Actias luna*	2

upper Midwest. The Merlins in this study may have benefited from an increase in the regional crow population and may be adapting to an urban environment. One notable concern is the Merlins use of neotropical passerines, which seem to be on the decline. Also, Merlin nests along Lake Superior are subjected to a very hostile climate.

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Literature Cited

Ahlgren, C. and I. Ahlgren. 1984. *Lob trees in the wilderness*. University of Minnesota Press, Minneapolis, MN.

Anderson, R. 1907. The birds of Iowa. *Proc. Davenport Acad. Sci.* 11:125–417.

Beals, E. 1967. Notes on summer birds of the Apostle Islands No. II. *Passenger Pigeon* 29:17.

Beer, J.R. 1966. The pigeon hawk in Minnesota. *Loon* 38:129–132.

Bibby, C.H. and M. Nattras. 1986. Breeding status of the merlin *Falco c. columbarius* in Britain UK. *British Birds* 79:170–185.

Brekenridge, W. and Errington. 1938. Nesting pigeon hawks. *Auk* 55:668–670.

Cade, T.J. 1982. *The Falcons of the World*. Cornell University Press, N.Y.

Craighead, J. and F. Craighead. 1940. Nesting pigeon hawks. *Wilson Bulletin* 52:241–248.

Hamerstrom, F. 1986. *Harrier, hawk of the marshes*. Smithsonian Institution Press, Washington, D.C., USA.

Howk, N. and Sumner Matteson. 1985. Merlin nest record in National Park Service natural history field observation files. Apostle Islands National Lakeshore, Bayfield, WI.

Johnson, D.H. 1982. *Raptors of Minnesota*. University of Minnesota Press, Minneapolis, MN.

Kumlein, L. and N. Hollister. 1903. The Birds of Wisconsin. *Bull. Wis. Nat. Hist. Soc.* 3:1–143.

Lowe, J. 1915. Birds of Green Lake County. *Bull. Wis. Nat. Hist. Soc.* 13:62–87.

Oliphant, L. 1978. Recent breeding success of the richardsons merlin *Falco columbarius richardsoni* in Saskatchewan Canada. *Raptor Research* 12:35–39.

Olsson, O. 1958. Dispersal, migration, longevity and death causes of *Strix aluco, Buteo buteo, Ardea cenerea, Larus agentatus*. *Acta Vertebratica* 1:91–189.

Postupalsky, S. 1974. Raptor reproductive success: some problems with methods, criteria, and terminology. Pp. 21–31. *In* F.N. Hamerstrom Jr., B.E. Harrell, and R.R. Olendorff, (eds.). Management of raptors. J. Raptor Res. Rpt. 2., Raptor Res. Found. Inc., Vermillion, SD.

Robbins, C., D. Bystrak, and P. Geissler. 1986. The breeding bird survey: its first 15 years, 1965–1979. U.S. Fish and Wildlife Service Resource Publication 157. Washington, D.C.

Shoenbeck, A.J. 1897. Merlin nest record for Oconto County, Wisconsin. Milwaukee Pub. Mus. Rec., Milwaukee, WI.

Sindelar, C. and A.K. Jacobson. 1981. Wisconsin's second recorded merlin nest. *Passenger Pigeon* 43:107–108.

Sodhi, N., P. James, I. Warkentin, and L. Oliphant. 1992. Breeding ecology of urban merlins (*Falco columbarius*). *Canadian Journal of Zoology* 70:1477–1483.

Vos Burgh, G.W.H. 1913. The hawks of southern Wisconsin and northern Illinois. *Oologist* 30:30–32.

Vos Burgh, G.W.H. 1932. Nesting pigeon hawk in Columbus, Wisconsin. *Oologist* 49:90.

Wilson, S. 1985. Merlin nest record in 1984. *Loon* 57:41–42.

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Possible Insect Repellent Function of Green Leaves Placed on Nests by Hawks

The study shows that leaves used by hawks in nests have an insect repellent function. Tree species used by hawks were identified and used in laboratory experiments employing house flies to test repellent qualities.

by Bradley A. McDonald, William S. Brooks, and Brian E. P. B. O'Connell

Many accipitrids have been observed to place sprigs of green leaves on the edges of their nests. These raptors seem to select leaves of only certain tree species, and they replace the old leaves with fresh ones daily or every few days (Sprunt 1955, Brown and Amadon 1968, Wimberger 1984; our pers. obs.). The Northern Goshawk (*Accipiter gentilis*) has been reported to use the leaves of white pine (*Pinus strobus*); Zone-tailed Hawk (*Buteo albonotatus*) to use cottonwood (*Populus deltoides*); Short-tailed Hawk (*Buteo brachyurus*) to use bald cypress (*Taxodium distichum*); Red-tailed Hawk (*Buteo jamaicensis*), quaking aspen (*Populus tremuloides*) and cottonwood; Red-shouldered Hawk (*Buteo lineatus*), silver maple (*Acer saccharinum*), sugar maple (*A. saccharum*), bigtooth aspen (*Populus grandidentata*), red pine (*Pinus resinosa*), white pine, balsam fir (*Abies balsamea*), northern white cedar (*Thuja occidentalis*), and eastern hemlock (*Tsuga canadensis*); Broad-winged Hawk (*Buteo platypterus*), black cherry (*Prunus serotina*) and quaking aspen; and Bald Eagle (*Haliaetus leucocephalus*), an aromatic sedge (*Carex* sp.) and white pine (Sprunt 1955; J.P. Jacobs, pers. comm.; our pers. obs.).

Several hypotheses for this behavior in raptors have been advanced: (1) camouflages the nest; (2) raises humidity in the nest; (3) shades the nest; (4) insulates the nest; (5) serves as a means of nest sanitation (excrement coverage or removal); (6) advertises nest occupancy; and (7) aids in ectoparasite reduction (Newton 1979, Wimberger 1984, Clark and Mason 1985, Clark and Mason 1988, Clark 1990). Both Wimberger (1984) and Clark (1990) discussed the implausibility of the first six. Wimberger believed that in hawks the best hypothesis was that of ectoparasite

reduction. Clark and Mason (1988) demonstrated experimentally the validity of the ectoparasite reduction hypothesis for the European Starling (*Sturnus vulgaris*).

We propose an eighth hypothesis, that of simple insect repellency. Many volatile compounds isolated from tree leaves have been shown to be toxic and/or repellent to insects. Cyanide (HCN) from fresh black cherry leaves was demonstrated to have a knockdown time of 1 sec for flying insects (Hall et al. 1969). Cedar and pine chips are known to be toxic to the house fly, *Musca domestica* (Dethier 1976). Volatiles found in the chips are the same as in the leaves of these trees (Kuznetsov et al. 1968). *Beta*-pinene, limonene, delta-3-carene, bornyl acetate, *alpha*-terpineol, and terpinyl acetate all have been isolated from pine needles and shown to be toxic to larval and adult dipterans (Kuznetsov et al. 1968) as well as other insects (Vasechko et al. 1970). Terpenoid and phenolic compounds from *Populus* leaves have been isolated and some have been shown to be toxic to insects and certain other organisms; e.g., the phenolic, catechol, has antibacterial properties (Pearl and Darling 1967).

Adult hawks leave freshly killed prey on the nest to feed their young. The carcasses or young themselves may attract insects, especially dipterans, to the nest. This is potentially dangerous to the young, particularly because many hematophagous dipterans (e.g. black flies: Simuliidae; mosquitoes: Culicidae) not only sap their strength but also are known vectors of disease. A few (e.g. louse flies: Hippoboscidae) actually parasitize them. Several dipterans (e.g. house flies: Muscidae; blow flies: Calliphoridae; flesh flies: Sarcophidae) may introduce bacteria and/or reduce the food value of dead prey items by feeding upon the carcasses themselves.

This study was conducted to support the hypothesis that hawks select certain plant species because of their insect repellent effect. We tested repellent properties of extracts from leaves of several tree species on the very common and available house fly. We expected leaves used by hawks to show repellent properties and those not used by hawks to have little or no repellent effect.

Methods

Extracts of leaves of eight tree species were tested for insect repellent capability: quaking aspen, bigtooth aspen, black cherry, silver maple, sugar maple, black oak (*Quercus velutina*), red pine, and white pine. Of these, all except black oak are reported to be used by hawks. Leaves were collected from trees in Grantsburg, Montello, and Ripon, Wisconsin, were double-bagged in plastic and frozen until use. To make an extract, about 0.5 kg of each type of leaf was placed in a high-speed blender filled with distilled water for 10 min. The aqueous slurry was strained through window screening to remove larger leaf particles, then was mixed well with about 400 ml petroleum ether and allowed to stand for 12 h. The petroleum ether fraction was washed with distilled water, concentrated to a thick paste on a rotary evaporator, sealed in a 50-ml round-bottom flask, and frozen until use.

House fly pupae were obtained from Carolina Biological Supply, Inc. After emergence they were given a food solution made of 100 g dextrose, 100 g dehydrated buttermilk, and 1 g cholesterol in 500 ml distilled water. Extract test plates were prepared by placing 10 g bacto-agar in 800 ml distilled water and spinning on a hotplate for 5 min at 100°C. The agar was cooled to 60°C and divided into 100-ml portions. With each of these portions 200 mg of a leaf extract and 20 ml food solution were mixed (we had found that leaf extract concentrations >200–250 mg often were lethal to adult house flies). This mixture was poured thinly into petri dishes. Control plates were similar but were made without leaf extract.

To check leaf extracts for repellent qualities, a test plate and a control plate were placed approximately 10 cm apart in each of two screen-covered 5-gal plastic pails used as test chambers. About 25 houseflies that had been deprived of food for a day so that they would seek out food were introduced into each chamber. Every 3 min, for a total of 30 min, the number of flies present on each plate was recorded. All leaf extract treatments were tested in similar fashion, each with its own control.

Table 1. Mean number of flies present on test (leaf extract) vs. control plates.

Species	Mean ± SD
Red pine	1.9 ± 2.0
Control	15.2 ± 5.8
White pine	2.1 ± 1.7
Control	13.5 ± 4.5
Bigtooth aspen	2.3 ± 2.2
Control	12.0 ± 4.6
Silver maple	1.8 ± 1.2
Control	8.9 ± 5.5
Quaking aspen	3.0 ± 2.5
Control	14.3 ± 7.8
Sugar maple	2.1 ± 2.0
Control	10.0 ± 5.4
Black cherry	2.7 ± 2.8
Control	11.3 ± 4.2
Black oak	7.5 ± 4.6
Control	8.6 ± 6.2

Results and Discussion

Statistical analysis of the data (paired t-test; n 20 for each extract) showed that all tree species except black oak exhibited a statistically significant ($P < 0.001$) repellent effect (Table 1). These results fit our hypothesis, as all these tree species except for the oak are reported to be used by hawks.

Fresh leaves placed on nests by adults soon dry out and lose their volatile compounds. In addition, many of these volatiles have been shown to be very sensitive to air and photooxidation (Wiemer et al. 1984, Wiemer and Hubbell 1986), and have a limited half-life. Hence, the effectiveness of these leaves as insect repellents would be lessened over a relatively short period of time unless replaced. The exposure of leaves to drying and to oxidizing agents at the nest edge could explain the adaptive advantage of their routine replacement by adults daily or every few days.

Clark and Mason's (1985, 1988) work involved nest ectoparasites of European Starlings. Starlings are cavity-nesters, and by using green leaves of certain plants in their nest lining,

they significantly reduce nest mites (*Ornithonyssus sylviarum*) in the enclosed space. Although Clark and Mason's hypothesis of nest mite reduction appears valid for these starlings, it may not hold for hawks, whose nesting ecology is quite different. Hawks place leaves near the edges of their nests, and nest out in the open, where there is good air circulation. Unless young hawks rest upon or among the green leaves, or rub them on their bodies (neither of which has been reported), nest mite control does not seem to be the major function of green foliage for hawks.

Instead, we tend to agree with Wimberger (1984), regarding hawks. In suggesting that placing fresh foliage on nest edges functioned to reduce the parasite load on nestlings, he employed a broader definition of parasite that included larger, flying insects we do not consider parasites in the same sense as Clark and Mason's nest mites. Without arguing the definition of a parasite, we postulate that the repellent activity of leaf extracts demonstrated in our study against house flies also exists against other insects. Our results lend indirect support to a general insect repellent function of green leaves placed on nest edges by hawks, but certainly do not preclude some effect on non-insect parasites such as nest mites and bacteria.

Literature Cited

Brown, L. and D. Amadon. 1968. *Eagles, hawks and falcons of the world.* McGraw-Hill, New York. 945 pp.

Clark, L. 1990. Starlings as herbalists: Countering parasites and pathogens. *Parasitology Today* 6:358–360.

Clark, L. and J.R. Mason. 1985. Use of nest material as insecticidal and anti-pathogenic agents by the European Starling. *Oecologia* 67:169–176.

Clark, L. and J.R. Mason. 1988. Effect of biologically active plants used as nest material and the derived benefit to starling nestlings. *Oecologia* 77:174–180.

Dethier, V.G. 1976. *The hungry fly.* Harvard University Press, Cambridge, Massachusetts. 304 pp.

Hall, T.F., S.G. Breeland, and P.K. Anderson. 1969. Use of cherry and laurel foliage for the preparation of an effective insect killing jar. *Annals of the Entomological Society of America* 62:242–244.

Kuznetsov, M.V., D.F. Rudnev, and V.P. Smelyanets. 1968. Natural and protective substances of conifers against destructive insects. *Dopov. Akad. Nauk Ukr. RSR, Ser. B,* 30:657–659.

Newton, I. 1979. *Population ecology of raptors.* Buteo Books, Vermillion, South Dakota. 399 pp.

Pearl, I.A. and S.F. Darling. 1967. Studies on the leaves of the family Salicaceae VIII: Further studies on the leaves of triploid *Populus tremuloides. Tappi* 50:193–195.

Sprunt, A. 1955. *North American birds of prey.* Harper and Row, New York. 227 pp.

Vasechko, G.I., N.V. Kusnetsov, V.P. Smelyanets, and Kh.N. Guznenok. 1970. Insecticidal properties of some components of essential oils. *Dopov. Akad. Nauk Ukr. RSR, Ser. B* 32:275–278.

Weimer, D.F., T.K. Chen, and J.J. Howard. 1984. A volatile leafcutter ant repellent from *Astrominium graveolens. Naturwissenschaften* 97:71–72.

Weimer, D.F. and S.P. Hubbell. 1986. Host plant selection by an attine ant. Pp. 133–153. *In* P. Jaisson, (ed.). *Social insects in the tropics.* Princeton University Press, Princeton, New Jersey.

Wimberger, P.H. 1984. The use of green plant material in bird nests to avoid ectoparasites. *Auk* 101:615–618.

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The Summer Season: 1994

by Thomas K. Soulen

In general, June was warmer and July cooler than normal this summer. Mid-June saw several parts of the state reach the low 100's; on the other hand, temperatures somewhere in the state dipped as low as the mid-20's to the low 40's in three different weeks. July generally provided normal to below normal temperatures, with daytime highs reaching into the low 80's to low 90's and night readings down into the 40's or upper 30's in low spots in each of the last three weeks of the month. Rainfall picked up during the season. June started spotty, but some areas received substantial precipitation, and especially during July, many areas received high to record amounts overall. However, rains were spread out enough so that even though water levels were sometimes high, flooding was rare. Very few birders suggested correlations between birding and the weather.

Wisconsin observers found a total of 252 species during the season, one of the lower totals in recent years. The report below provides information about 136 of them. An additional 81 species that are not mentioned were widespread enough to be noted in more than 25 counties. The remaining 35 species, noted in 10–25 counties, are listed here along with the number of counties in which each was recorded: Pied-billed Grebe (22), Double-crested Cormorant (20), American Bittern (12), Great Egret (12), Green-winged Teal (18), Ring-necked Duck (12), Hooded Merganser (17), Ring-necked Pheasant (20), Ruffed Grouse (22), Wild Turkey (16), Virginia Rail (15), Sora (15), Upland Sandpiper (18), Common Snipe (18), American Woodcock (20), Herring Gull (18), Caspian Tern (14), Forster's Tern (11), Black Tern (25), Yellow-billed Cuckoo (11), Great Horned Owl (25), Barred Owl (23), Willow Flycatcher (23), Common Raven (22), Hermit Thrush (19), Golden-winged Warbler (20), Canada Warbler (14), Grasshopper Sparrow (17), White-throated Sparrow (20), Western Meadowlark (18), Yellow-headed Blackbird (22), Brewer's Blackbird (18), Purple Finch

(22), Pine Siskin (13), and Evening Grosbeak (12).

First Wisconsin nestings of two species—American White Pelican and Great Black-backed Gull—were reported this summer. Both represented range extensions, the pelicans east and the gulls west of previous records. Although the pelican nests failed, the gulls fledged two young. Among the season's other rarities (including species out of season) were Eared Grebe, Snowy Egret, Little Blue Heron, Yellow-crowned Night-Heron, Snow Goose, Oldsquaw, Spruce Grouse, American Avocet, Willet, Whimbrel, Red-necked Phalarope, Little Gull, Glaucous Gull, Snowy Owl, Great Gray Owl, a Selasphorus hummingbird, multiple Black-backed Woodpeckers, Carolina Wren, Northern Mockingbird, White-eyed Vireo, Philadelphia Vireo, Yellow-throated Warbler, two Prairie Warblers, and Sharp-tailed Sparrow.

It's always fun to learn about areas in the state that harbor the unexpected. Murray Berner explored Dewey Marsh, a not easily accessible area of Portage Co. containing black spruce, spruce-tamarack, sedge marsh, and beaver ponds. In this relatively southern location, Yellow-rumped Warblers were outnumbered only by Nashville Warblers and Song Sparrows, and he reported evidence of nesting of Golden-crowned Kinglets and multiple Palm Warblers and Lincoln's Sparrows.

As is usual, a number of both passerines and non-passerines lingered in southern counties well into June. Quite unusual were two kettles of Broad-winged Hawks drifting north over Door Co. on June 18. In addition to the scattered southward movement of a number of shorebirds from late June on, there were observations of Tennessee Warblers in Portage Co. July 19–23 and of migrant Osprey, Swainson's Thrushes, and several species each of flycatchers and warblers July 26–31.

Those who commented on species that seemed more or less common this year than last were near unanimous in noting increases only in House Finches. A number of species were thought by 4 or more observers to be down: Broad-winged Hawk, Sora, Upland Sandpiper, Black-billed Cuckoo (8 people thought these were more scarce), Yellow-billed Cuckoo, Black Tern (although some thought it was up), Common Nighthawk (10 observers reported scarcity, the highest number who have ever commented), Belted Kingfisher, Red-headed Woodpecker, Northern Flicker, Purple Martin, Tree Swallow, Bank Swallow, Red-breasted Nuthatch, Gray Catbird, Brown Thrasher, Yellow Warbler, Rose-breasted Grosbeak, Bobolink, and Western Meadowlark.

Compared to recent years, a somewhat above average number of observers (67) submitted reports. Coverage of some areas was significantly better than usual, but on the other hand, 9 counties were represented by no reports: Buffalo, Clark, Crawford, Iron, Jackson, Kewaunee, Lincoln, Trempealeau, and Vernon. We can hope that Atlas project participants may become regular contributors of their records over the longer term, giving us a continuing, much better balanced picture of Wisconsin's summer species.

Reports
(1 June 1994–31 July 1994)

Common Loon.—Among the 16 counties in which it was observed, these were the most southern: Chippewa, Manitowoc (until June 10; Sontag), Portage, and St. Croix (Carlsen; nest with 2 eggs July 9).

Red-necked Grebe.—Observed in these 7 counties: Burnett June 1 (Mueller), Columbia July 2 (Robbins), Dane (up to 2 birds) June 7 (Robbins) to June 26 (Ashman), Green Lake (Schultz), Kenosha June 19 (Wood; 2 birds), St. Croix July 9 (Carlsen; 3 birds), and Winnebago, where numbers observed were the lowest in years (Ziebell; maximum of 3 on June 22).

Eared Grebe.—Seen well in Dane Co. June 18 (Burcar) and Columbia Co. July 10 (Ashman; 2 birds).

American White Pelican.—Wisconsin's (and the Great Lakes') first known nests of this species, each with one egg, were found this summer in the Green Bay area of Brown Co. (fide Erdman). Unfortunately both nests failed. A number of observers were treated to sights of many birds in the area, however, with a high count of 85 on July 26 (Erdman). Three birds were noted in nearby Door Co. June 18 (Mueller). Lesher found 55 birds July 27 in La Crosse Co., near where modest numbers have been on the Mississippi River the past few summers.

Least Bittern.—Observed in Brown, Columbia, Dodge, Door, Douglas, Jefferson, Oconto, Washington, and Winnebago Counties.

Snowy Egret.—Reported from Brown Co. through at least July 13 (Erdman, Nussbaum, Soulen, Tessen); two nests were found (fide Erdman). Also noted in Waukesha Co. July 30 (Wood).

Cattle Egret.—Observed by a number of people in Brown Co., where they have become regular residents; 28 nests were located (fide Erdman). Also reported from Dodge Co. June 26 (Wood), Oconto Co. in July (Peterson, the Smiths), and Rock Co. June 16 (Hansen).

Little Blue Heron.—Noted in Milwaukee Co. July 11 (Feider). See "By the Wayside."

Black-crowned Night-Heron.—Ziebell counted 298 in Winnebago Co. June 22. Reported in 12 additional counties.

Yellow-crowned Night-Heron.—Adults were seen well in 2 counties: Rock June 2 (Peterson) and 27 (Ashman) and Waukesha July 17 (Wood). See "By the Wayside."

Tundra Swan.—An apparently injured bird spent the summer in Madison, Dane Co. (many observers).

Trumpeter Swan.—Birds were noted in Burnett Co., one of their reintroduction areas. Also reported June 3 in La Crosse Co. (Lesher). See "By the Wayside." It will be interesting to see where birds appear—and hopefully become re-established as breeders—as the reintroduction programs continue.

Mute Swan.—Noted in these counties: Ashland/Bayfield, Brown, Dane, Douglas, Portage, Washington, and Waukesha.

Snow Goose.—One in Vernon Marsh, Waukesha Co., on July 30 was surprising (Wood). See "By the Wayside."

American Black Duck.—Reported from only these 11 counties: Ashland/Bayfield, Brown, Columbia, Dane, Door, Douglas, Manitowoc, Portage, Vilas, and Winnebago.

Northern Pintail.—Observed in Dane Co. June 27 (Robbins), Oconto Co. June 26–July 24 (the Smiths), and Winnebago Co. June 22 (Ziebell).

Northern Shoveler.—Appeared in a total of 6 counties, mostly in June: Barron, Door, Douglas, Milwaukee, Oconto, and Winnebago.

Gadwall.—Observers in only 5 counties noted this species: Brown, Columbia, Douglas, Oconto (the Smiths; 18 on July 3), and Winnebago (Ziebell; 21 on June 22).

American Wigeon.—Reported from

these 8 counties: Ashland/Bayfield, Brown, Burnett, Columbia, Douglas, Oconto, and Vilas.

Canvasback.—Noted in Columbia (Robbins), Dane (Ashman, Robbins), and Winnebago (Ziebell) Counties.

Redhead.—Columbia, Dane, Dunn, Manitowoc, Oconto, and Winnebago Counties provided this season's observations.

Lesser Scaup.—Present in Columbia, Dunn, Manitowoc, Marathon, and Sawyer Counties.

Oldsquaw.—Very infrequently reported in summer, this species was in Door Co. June 7 (Hoffman, Stover).

Common Goldeneye.—A female and 7 or 8 young were seen in Sawyer Co. June 12 (Polk), and a bird was in Manitowoc Co. July 19 (Sontag). Noted by several observers in Door Co., one of the more likely summer locations for this species (6 females or young were present July 13; Nussbaum).

Common Merganser.—An injured bird that had overwintered in Washington Co. was seen until June 28 (Domagalski). Noted also in Door, Douglas, Florence and Vilas Counties.

Red-breasted Merganser.—Reported from Ashland/Bayfield, Door, Douglas, Sheboygan, and Winnebago Counties.

Ruddy Duck.—Noted in fewer counties than most summers: Brown, Columbia, Dane, Dunn, and Winnebago.

Osprey.—An adult in Grant Co. June 2 was unusual (Lesher). Also noted in Washington Co. July 31 (Domagalski) and in 18 more northern counties. A successful nesting in Door Co. was the first there since the 1960's (fide Erdman).

Bald Eagle.—In addition to observations in more northern counties, this species was noted in Green Lake Co. (Schultz), and nests were located in Iowa Co. (Lesher; 2 adults and one young June 1) and Door Co. (fide Erdman; first successful nesting since the 1960's).

Sharp-shinned Hawk.—Observed in 16 counties, including Dane, Ozaukee (one banded at the UWM Field Station July 9, fide Mueller), and Pierce. One of two seen in Portage Co. in June was observed carrying food (Berner).

Northern Goshawk.—Erdman reported only 2 successful nests in a northeastern Wisconsin study area this season, due to mammal predation at egg time. The other reports came from these counties: Door through the season (the Lukes), Douglas through July 8 (the LaValleys), Forest July 20 (Reardon), Marinette in mid-June (Holschbach), and Oconto July 7 (the Smiths).

Red-shouldered Hawk.—Among the 15 reporting counties, the most northern were Menominee and Oconto.

Broad-winged Hawk.—Quite unusual were two kettles of about 30 birds each drifting north over Door Co. June 18 (Bontly, Strelka, Stover). Most of the 25 counties in which these were observed were central and northern, as usual, but there were reports from Dane, Milwaukee, Sauk, and Washington Counties.

Merlin.—A June 25 bird in Dane Co. was unexpected (Burcar). The first nesting in northeastern Wisconsin since 1896 (fide Erdman) was reported from Door Co. (Erdman, the Lukes). Also noted in Ashland/Bayfield, Douglas, and Vilas Counties.

Peregrine Falcon.—Birds presumably from reintroduction programs continue to be found in new areas, this year in Price Co. June 10 (Hardy). Also noted in Brown, La Crosse, and Milwaukee Counties.

Gray Partridge.—The only observations were in Columbia and Lafayette (Burcar) and Pierce (Carlsen) Counties.

Spruce Grouse.—A displaying male was photographed at close range June 12 in the Three Lakes bog, Oneida Co. (Wood). See "By the Wayside."

Greater Prairie-Chicken.—Reported from their usual Portage Co. locations (Berner, Nussbaum).

Sharp-tailed Grouse.—Observed in Burnett, Douglas, and Price Counties.

Northern Bobwhite.—Among the 12 counties in which this species was found, Brown, Oconto, and Portage were the furthest north.

Yellow Rail.—For the second summer in a row, none were reported.

King Rail.—In the past 13 years, there has been only one summer in which reports of this species have come from more than 3 counties. This year there were no reports.

Common Moorhen.—Observed in these 8 counties: Brown, Columbia, Dane, Dodge, Oconto, Washington, Waukesha, and Winnebago.

American Coot.—Some observers commented on the scarcity of these. Reported from only 11 counties, compared to an average of 16–17 counties in the previous 6 years.

Black-bellied Plover.—Seen in 4 counties June 2–5. Latest by far were birds in Manitowoc Co. June 21 (Sontag) and Dane Co. June 22 (Hansen).

Semipalmated Plover.—Four stragglers remained in Manitowoc Co. until June 13 (Sontag). The earliest fall arrivals were in Dane Co. July 20 (Burcar), with birds appearing in several other locations within a few days.

American Avocet.—One bird was seen well in the Ashland/Bayfield Co. area June 1 (Irv Brettig fide Verch).

Greater Yellowlegs.—Reported from Winnebago Co. June 3–4 (Nussbaum, Tessen). Had returned to Marathon Co. by June 30 (Berner). Other fall migrants were not observed until after mid-July.

Lesser Yellowlegs.—Barely two weeks separated the latest reported straggler (Outagamie Co. June 3, Peterson) from the first returning bird (Dane Co. June 19, Ashman). Other fall migrants were in 3 Marathon Co. locations June 29 (Nussbaum), with most subsequent reports coming at least 2 weeks later.

Solitary Sandpiper.—The earliest arrivals appeared June 28–30 in Brown and Marathon Counties (Nussbaum).

Willet.—A single bird was present in Milwaukee Co. July 31 (Wood).

Whimbrel.—Three birds were observed in Oconto Co. June 2 (the Smiths).

Ruddy Turnstone.—Departed from Manitowoc last (June 16), returning there by July 17 (Sontag). Other departure/arrival dates were 2 weeks earlier/later.

Red Knot.—One remained in Douglas Co. until June 5 (Johnson).

Sanderling.—Present in 5 counties in early June, being noted last in Oconto Co. (the Smiths, 4 on June 13). Returned to La Crosse Co. by July 15 and to several other locations within the next few days.

Semipalmated Sandpiper.—Hansen counted 943 in Dane Co. June 1. Lingered until June 11 in Marathon Co. (Berner). Had returned to Fond du Lac Co. by July 2 (Berner).

Least Sandpiper.—Still present in Milwaukee Co. June 5 (Tessen). Returned to 3 counties by July 2–4.

White-rumped Sandpiper.—Noted in 9 counties in June, latest June 22 in Manitowoc (Sontag) and June 23 in Oconto (Robbins). The only fall migrant reported was in Manitowoc Co. July 26 (Sontag).

Baird's Sandpiper.—Noted in Dodge (Haseleu) and Washington (Domagalski) Counties June 1 and in Oconto Co. June 5 (the Smiths, 3 birds). Had returned to Dane Co. by July 20 (Burcar) and Manitowoc Co. by July 26 (Sontag).

Pectoral Sandpiper.—Lingered until

June 5 in Marathon Co. (Berner). An Outagamie Co. report July 3 (Nussbaum) is a week and a half earlier than other fall observations.

Dunlin.—Recorded in 7 counties in June, the latest by far in Manitowoc June 24 (Sontag).

Stilt Sandpiper.—Noted in Dane Co. July 15–20 (Hansen, Burcar), La Crosse Co. July 27 (Lesher), and Columbia (Ashman) and Milwaukee (Wood) Counties July 31.

Short-billed Dowitcher.—Although a few more observers are documenting their dowitcher observations, less than half this year did so. The only June report was from Oconto Co. June 4 (the Smiths). Birds appeared in Fond du Lac (Nussbaum) and Milwaukee (Mueller) Counties July 2, with 5 more counties reporting July 11–18.

Wilson's Phalarope.—Reported in June in Door, Marathon, Oconto, and Portage Counties and in July in Dane and Oconto Counties.

Red-necked Phalarope.—Observed in Dane Co. July 24 (Burcar) through 29 (Robbins).

Franklin's Gull.—Single birds were observed in Dunn Co. June 4 (Polk) and Milwaukee Co. July 16 (Tessen).

Little Gull.—Present throughout the season in Manitowoc Co., but with a maximum of only 2 birds (Sontag). Two were also seen in Oconto Co. June 26 (Erdman, the Smiths). See "By the Wayside."

Bonaparte's Gull.—Among the 8 reporting counties, only La Crosse (Lesher, July 27) and Forest (Reardon, July 24) were not among the easternmost.

Glaucous Gull.—A straggler was still present in Manitowoc Co. through June 6 (Sontag).

Great Black-backed Gull.—Wisconsin's first documented nesting of this species occurred this year in Door Co., with two full grown chicks being observed (Ken Stromborg fide Erdman). Such records from the Great Lakes began only in the 1990's, and this nesting extends the range further west.

Common Tern.—All of the 9 reporting counties were along Lake Michigan, Lake Superior or Green Bay, except for Winnebago.

Eastern Screech-Owl.—Noted only in Barron, Milwaukee, Richland, and Winnebago Counties.

Snowy Owl.—One was seen and photographed near the end of July in St. Croix Co. (Charlotte Voeltz), for Wisconsin's fourth summer record since 1988.

Great Gray Owl.—Noted again in Forest Co. (fide Erdman).

Short-eared Owl.—Up to 5 birds were observed through early July in Portage Co. (Berner, Nussbaum).

Northern Saw-whet Owl.—This season's lone report came from Douglas Co. June 28 (the LaValleys).

Whip-poor-will.—A nest with an adult and 2 downy young was found in Iowa Co. July 11 (Ashman). Noted in 19 counties overall.

Selasphorus sp. Hummingbird.—A young male of this genus was observed well in Price Co. July 14–15 (Larry Gregg, Hardy, Powell, Kevin Powell). Accepted by the Records Committee. "See By the Wayside."

Red-bellied Woodpecker.—Northernmost among the 31 reporting counties were Barron and Oconto.

Black-backed Woodpecker.—The pair that was discovered nesting in northeastern Langlade Co. in May continued to be observed into June (Mueller, Nussbaum, Peterson). An adult female was observed feeding a young bird in Forest Co. (Baughman), and there were additional reports from these counties: Douglas (Johnson), Forest (Castelein, Erdman, Lauten), and Vilas (Baughman, Nussbaum, Spahn, Wood; probably at least 5 different birds).

Olive-sided Flycatcher.—It is not known whether birds in Oconto Co. June 5 (Tessen) or Door Co. June 18 (Mueller) were residents. Additional reports came from Ashland/Bayfield, Barron, Douglas, Forest, Oneida, and Vilas Counties. A July 31 bird in Columbia Co. (Ashman) likely was a fall migrant.

Yellow-bellied Flycatcher.—Present in Milwaukee Co. June 3 (Zehner). Observed in 8 counties within normal breeding range. A migrant had reached Waukesha Co. by July 30 (Tessen).

Acadian Flycatcher.—There were 6 in Green Lake Co. June 25 (Schultz) and 2 in Manitowoc Co. June 16 (Sontag). Also reported from 5 more southern counties.

Western Kingbird.—One was seen well in Brown Co. June 11 (Mead).

Gray Jay.—As usual, found only in a few northern counties: Douglas, Florence, Forest, Price, and Vilas.

Boreal Chickadee.—Noted in Douglas (the LaValleys), Forest (Castelein, Lauten), Oneida (Peterson), and Vilas (Baughman, Spahn) Counties.

Tufted Titmouse.—This season's reports came from these 9 counties within range: Chippewa, Dane, Dunn, Eau Claire, Grant, Iowa, Monroe, Rock, and Sauk.

Red-breasted Nuthatch.—The southernmost of the 25 counties in which this species was observed were Dane, Milwaukee, and Waukesha. Domagalski found none in some southeastern Wisconsin pine plantations where they were common last year. A female going to and from a nest hole was noted in Winnebago Co. (Nussbaum).

Brown Creeper.—Nesting was reported in Portage (Berner) and Washington (Domagalski) Counties. Reported from an additional 10 counties, mostly further north.

Carolina Wren.—The summer's only reports came from Dane Co. July 2–4 (Burcar, Robbins).

Winter Wren.—Several of the 17 reporting counties represent locations where this species has been noted rarely if at all in recent summers: Eau Claire (Polk) and Outagamie (Nussbaum).

Golden-crowned Kinglet.—Berner reported 2 adults feeding young at a nest in an old black spruce area of Portage Co.; birds were present at least until July 16. This location is significantly south of usual breeding range. Other reports came from Douglas, Florence, Forest, Oneida, and Vilas Counties.

Ruby-crowned Kinglet.—Noted in Douglas, Forest, Langlade, Oneida, Sawyer, and Vilas Counties.

Swainson's Thrush.—Still present in Milwaukee Co. in early June (Bontly). Reported within range in Forest, Marinette, and Vilas Counties. Migrants were observed in Manitowoc Co. July 26 (Sontag) and Dane Co. July 28 (Hansen).

Northern Mockingbird.—Three reports: Douglas Co. June 7 (Johnson), Ozaukee Co. July 24 (Wood), and Portage Co. July 13 (Berner).

Loggerhead Shrike.—Carlsen observed an adult and several young in St. Croix Co. July 1, as well as nests at 2 additional locations. As many as 11 young were raised from at least 5 nests in Pierce and St. Croix Counties (fide Berner). Also noted in these counties: Brown (fide Erdman), Manitowoc (Sontag), Sauk (Soulen), and Waupaca (Tessen).

White-eyed Vireo.—Two birds were in Governor Dodge State Park, Iowa Co., on June 5 (Burcar); one was easily found by a number of other obervers for at least several weeks thereafter. Another bird—also recorded by a number of birders—spent a good share of the summer along a main street bordering a park in the Prairie du Sac/Sauk City area, Sauk Co. Also noted in Milwaukee Co. June 3 (Strelka).

Bell's Vireo.—Reported from 4 counties: Dane (a number of observers), Grant (Hansen), Iowa (a number of observers), and La Crosse (Lesher).

Solitary Vireo.—Berner found a singing

male in Portage Co. July 9, and also a male feeding a dependent fledgling plus 2 additional adults in Jackson Co. June 30. Noted also in Douglas, Forest, Oneida, Shawano, and Vilas Counties.

Philadelphia Vireo.—A bird heard and seen in Oconto Co. June 19 was very unusual (the Smiths).

Blue-winged/Golden-winged Warbler hybrids.—A Brewster's Warbler was present until June 15 in Pierce Co. (Carlsen). A Lawrence's Warbler returned to Baxter's Hollow, being seen on at least 4 days June 4–22 (Foster, Hansen, Ron Lockwood, Forrest Luke, Robbins).

Blue-winged Warbler.—Among the 20 counties from which this species was reported were Barron (Goff), Door (Bontly, Stover, Strelka), Marinette (Holschbach), and Oconto (the Smiths). This species appears to be extending its range northward, but observers should be careful to check out Blue-winged songs, since Golden-winged Warblers (or hybrids that look like them) can sing Blue-winged songs.

Tennessee Warbler.—Noted in Forest Co. June 2 (Castelein, Lauten), Douglas Co. June 3 (the LaValleys), and Dane Co. June 5 (Stover). Presumed migrants were in Portage Co. July 19–23 (Berner) and Dane Co. July 28 (Robbins).

Nashville Warbler.—Berner counted 34 in Portage Co. June 4. Of the 27 reporting counties, Sauk was the southernmost (Cederstrom, June 5).

Northern Parula.—Noted in Ashland/Bayfield, Door, Douglas, Forest, Langlade, Oneida, Shawano, Vilas, and Washburn Counties.

Magnolia Warbler.—A straggler was present in Milwaukee Co. June 9 (Bontly). Within range, observers found this species in Ashland/Bayfield, Door, Douglas, Florence, Forest, Sawyer, and Vilas Counties.

Cape May Warbler.—Noted in Douglas Co. June 2–25 (Johnson) and Vilas Co. June 5 (Baughman).

Black-throated Blue Warbler.—A male in Newport State Park, Door Co. July 13 was unusual (Nussbaum). Also reported from these counties: Florence, Forest, Menominee, Shawano, and Vilas.

Yellow-rumped Warbler.—Berner found this to be the third most common species—behind Nashville Warbler and Song Sparrow—in Dewey Marsh, Portage Co. on June 18 (18 birds). The other 13 reporting counties were more northern.

Black-throated Green Warbler.—Still in Milwaukee Co. June 1 (Bontly). Observed in 19 counties overall, including Sauk, where it sometimes summers.

Blackburnian Warbler.—Noted carrying food at Devil's Lake State Park, Sauk Co. on June 21 (Hansen). Also noted in 12 northern counties.

Yellow-throated Warbler.—Wood located 3 singing males in Wyalusing State Park, Grant Co. on June 4. Still present there June 26 (Hansen). See "By the Wayside."

Pine Warbler.—Present in Sauk (Hansen) and 18 more northern counties.

Kirtland's Warbler.—No reports, for the second year in a row.

Prairie Warbler.—The Sheboygan Co. bird was present at least until July 2 (Wood). Also observed well in Portage Co. June 11 (Berner). See "By the Wayside."

Palm Warbler.—Quite surprising were at least 6 birds in a wooded bog area of Dewey Marsh, Portage Co. June 18–July 16, including at least 5 singing males, plus a male feeding a female on June 23 (Berner). Also noted in Douglas (Johnson) and Vilas (Baughman, Mead, Spahn) Counties.

Cerulean Warbler.—A singing male in Sawyer Co. June 12 was unusual (Polk). Reported also from Dane, Green Lake, Iowa, Monroe, Rock, Sauk, and Washington Counties.

Black-and-white Warbler.—Present in

Milwaukee Co. June 20 (Bontly), Sauk Co. June 21 (Hansen), Washington Co. June 30 (Diehl), and in 25 more northern counties.

Prothonotary Warbler.—Nested in the University Arboretum, Dane Co., where one male was as orange as a Baltimore Oriole (Hansen); see "By the Wayside." Noted also in Grant, Iowa, Richland, and Rock Counties.

Worm-eating Warbler.—Noted in Sauk Co. at least through June 11 (Burcar, Hansen, Robbins).

Northern Waterthrush.—Still present in Milwaukee Co. June 1 (Bontly). Several in Washington Co. until mid-July (Domagalski). A migrant had reached Dane Co. by July 26 (Robbins). Also noted in 15 more northern counties.

Louisiana Waterthrush.—Reported from these counties: Chippewa, Dunn, Eau Claire, Grant, Iowa, and Sauk.

Kentucky Warbler.—For the first time in over a decade, noted only in Grant Co. (Hansen, Lesher).

Connecticut Warbler.—A mated pair and an additional singing male were present June 3 in Jackson Co., at the presumed southern edge of this species' breeding range (Berner). Reported also from Monroe Co. June 6 (Epstein) and from Ashland/Bayfield, Burnett, Douglas, and Vilas Counties.

Mourning Warbler.—Two adults and young were in Washington Co. June 26; birds—including at least 10 males—were noted there through July 16 (Domagalski). Noted in 28 counties overall, including several additional southern ones.

Hooded Warbler.—A female was observed carrying nesting material in Marinette Co. in mid-July (Holschbach). Reported also from these counties: Brown June 1 (Mead), Dane through July 9 (Ashman), Door July 13 (Nussbaum), Rock June 2 (Peterson, 2 birds), Sauk in early June (Burcar), and Waukesha through July 1 (Strelka).

Yellow-breasted Chat.—Observers found this species in Iowa Co. June 11 (Burcar) and 26 (Hansen), Kenosha Co. June 19 (Wood, at least 2), Sauk Co. July 9 (Robbins), and Walworth Co. June 9. (Frank).

Northern Cardinal.—The most northern counties in which this species was seen were Ashland/Bayfield, Barron, Forest, Oconto, and Price.

Dickcissel.—The total of 18 counties in which observers found these this year was about the same as last year but below the roughly 30 reporting counties in 1991–93; more were noted in western than eastern locations. Up to 6 birds in Shawano Co. (Peterson) were much north of any other observations in the east. In the west birds reached as far north as Chippewa (Polk) and Polk (the Smiths) Counties.

Clay-colored Sparrow.—Berner reported 56 in Portage Co. on June 10. Noted in 30 mostly northern and western counties overall.

Field Sparrow.—The most northern reports came from Barron, Douglas, and Florence Counties.

Lark Sparrow.—Recorded in Dunn (Polk), Iowa (Robbins), Portage (Berner), and Sauk (many observers) Counties.

Henslow's Sparrow.—Noted in these 8 counties: Dunn, Green Lake, Iowa, Lafayette, Oconto, Portage, Richland, and Shawano.

LeConte's Sparrow.—Nested in Brown Co., fledging 4 young (fide Erdman). Present all summer in the Smith's back yard in Oconto Co. Reported also from Douglas (Johnson), Dunn (Polk), Oneida (Peterson, Spahn), and Vilas (Spahn) Counties.

Sharp-tailed Sparrow.—Two birds were in Burnett Co. June 8 (Peterson).

Lincoln's Sparrow.—Berner reported up to 9 birds, including 6 singing males, through July 16 in Portage Co.; extreme agitation suggested nesting. Also noted in Barron (Goff), Douglas (Johnson), Forest (Spahn), Oneida (the Smiths, Spahn), and Vilas (Baughman, Spahn) Counties.

Dark-eyed Junco.—This year's reporting counties were Ashland/Bayfield, Douglas, Forest, Price, and Vilas.

Orchard Oriole.—Noted in Dane, Dunn, Green, Iowa, La Crosse, Lafayette, Marquette, Monroe, Ozaukee, and Richland Counties.

House Finch.—This year's 46 reporting counties, from all parts of the state, is about the same as last year's 47.

Red Crossbill.—The season's only observation was of 2 birds in Vilas Co. July 12 (Spahn).

Contributors

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"By the Wayside"

Rare species observed include Snowy Egret, Little Blue Heron, Yellow-crowned Night-Heron, Trumpeter Swan, Snow Goose, Spruce Grouse, Little Gull, Selasporus hummingbird, Lawrence's Warbler, Yellow-throated Warbler, Prairie Warbler and Prothonotary Warbler.

Snowy Egret (*Egretta thula*)

30 July 1994, Vernon Marsh, Waukesha County—Among five Great Egrets was a much smaller white egret with a black bill, bright yellow lores, and black legs with yellow feet which was feeding by stirring the water with one foot. The Great Egrets left immediately as I approached the pond, but the Snowy Egret lingered a few minutes longer. It then flew across the diked pond and joined the Great Egrets. The Snowy Egret perched on a tall dead stump, and as I walked around the dike all six of these nervous egrets departed and flew northeast.—*Thomas C. Wood, 8895E N. 91st Street, Milwaukee, WI 53224.*

Little Blue Heron (*Egretta caerulea*)

11 July 1994, Milwaukee County—A white "heron"—about one-half the size of a Great Blue Heron (. . . whom s/he was hanging around with when sighted). Was hanging around the *edges* of islands in the middle of a one hectare man-made pond, walking through water approx. 10–20 cm deep, sometimes purposely forward, other times somewhat erratically back and forth. Took time to notice toes *WERE NOT* yellow or golden. Bill was noticed to be two-toned—black at tip bluish near the base—legs did not look black. Bill appeared longer than Cattle Egret.—*Mark Feider, 2125 W. Brontwood Avenue, Glendale, WI 53209.*

Yellow-crowned Night-Heron (*Nyctanassa violacea*)

17 July 1994, Vernon Marsh, Waukesha County—Although regulations prohibit unleashed dogs until July 31, two men on mountain bikes were riding the dikes with two loose dogs, and eventually the dogs decided to frolic in the marsh which caused night herons and egrets to flush in all directions. I noted one adult night-heron with an elongated white face patch flying past me and landing nearby at the edge of the marsh. I slowly walked the dike and soon came across the Yellow-crowned

Night-Heron perched on a dead stump forty feet from the dike. It had gray underparts and a gray neck, darker gray wings and the aforementioned face patch stood out on a black face with a large reddish eye. The bill was very thick and gray to black. Extending rearward from the cream-colored crown was a similarly colored single plume which reached past the black nape. The neck was long and held extended as the bird stood motionless on its yellow feet and legs. For 10 minutes until the dogs had departed from the area, I had this ideal view, but the bird then flew back into the willows and could not be seen as I continued around the pond by the dikes.—*Thomas C. Wood, 8895E N. 91st Street, Milwaukee, WI 53224.*

21 June 1994, Rock County—I surveyed the Avon Bottoms State Natural Area for the DNR's Breeding Bird Survey on 21 and 27 June 1994. The best sighting in Rock County was a Yellow-crowned Night-Heron at the base of the Nelson Road bridge crossing the Sugar River. It was an adult in full breeding plumage with a stout, black bill; yellow legs; reddish eye; black head and face with buffy-white crown, cheek and plumes; and overall gray plumage.—*Philip Ashman, 615 E. Johnson Street, Madison, WI 53703.*

Trumpeter Swan (*Cygnus buccinator*)

3 June 1994, La Crosse County—In the morning fog, three canoeists (Kurt Brownell, Jim Lesher, Fred Lesher) heard the unmistakable bugling or trumpeting of a Trumpeter Swan. It was not the "hooting" of a Whistling Swan. Another hour later, about 7:30 A.M., and as we were beginning sandbar breakfast, the fog lifted rather quickly, and we saw a large, white bird, a swan, with straight "thick" neck, and evidently large beak with black extending well below and behind the eye, though we had only 8± binoculars and no scope. The bird called again, swam nervously about, then took off calling, circled and disappeared down river. No neck collar was observed. Obviously, we had no opportunity to study for leg bands.—*Fred Lesher, 509 Winona Street, La Crosse, WI 54603.*

1 June 1994, Burnett County—The Trumpeter Swan seen in Crex Meadows W.A., Burnett County, on June 1, 1994 was a neck-banded individual found along the auto tour route in a small impoundment just west/northwest of the Phantom Lake Flowage. I could not read the number on the neckband. This bird had the straightly-sloping forehead-and-bill profile typical of this species, and lacked the yellow loral spot found on Tundra Swan. Since no other large waterfowl were nearby, it was not possible to compare size. The crown was flatter than that seen on Tundra Swans; this and the straight forehead-bill profile (and the presence of the neckband!) convinced me of the correctness of my identification. The bird did not call or fly while I observed it. It swam in shallow water near the edge of the small impoundment it was observed in.–*William P. Mueller, 1242 South 45th Street, Milwaukee, WI 53214.*

Snow Goose (*Chen caerulescens*)

30 July 1994, Vernon Marsh, Waukesha County—Among a small flock

of Canada Geese was a white-phase Snow Goose. I saw the black wingtips, pink bill and legs as it flew past me. Its physical size in comparison to the Canada Geese and its large bill eliminated Ross' Goose.—*Thomas C. Wood, 8895E N. 91st Street, Milwaukee, WI 53224.*

SPRUCE GROUSE (*Dendragapus canadensis*)

12 June 1994, Three Lakes, Oneida County—The western section of this bog has been devastated, drained, and is undergoing some sort of development, but east of the snowmobile trail the bog is in good condition. I was in the bog and heard a call, the nature of which I cannot remember (perhaps an alarm note), and when I looked in the direction of the sound I saw an adult male Spruce Grouse in full display strutting on the sphagnum floor about 30 feet away. As I moved toward it the grouse became alarmed and flew onto a branch about 12 feet above ground. It ate a few mouthfuls of spruce needles, and apparently dissatisfied with this fare, descended to the sphagnum and slowly walked away from me. It allowed me to follow and sometimes just stared at me.

This bird had red swollen "eye brows," a black tail which was always held erect and was accentuated by a bright chestnut terminal band. Its throat was pitch black, neck feathers black and ruffled, and the lower breast and belly feathers were black with variable white edging. The back was more brownish with gray edging on many of the feathers.

I would have expected a female somewhere nearby, but decided not to intrude further, and as I left another male flew up and landed on a branch. This male had similar plumage but was not displaying. It later occurred to me that the first male could have been displaying in response to this intruder.--*Thomas C. Wood, 8895E N. 91st Street, Milwaukee, WI 53224.*

LITTLE GULL (*Larus minutus*)

26 June 1994, Oconto County—Informed by T. Erdman on 26th of June that he had seen two first winter plumaged birds at the Sikma site. Karen and myself and Tom went there and located the birds in with about 500 Bonaparte Gulls. Relatively easy to spot: about one-third smaller than Ring-bills. Had tendency to stay away (kept distance) from other gulls, almost by self. Had the dark marking on top and back of head. When in flight (twice) could see the "W" marking on upper (dorsal) of wing and blackish band on tail. Were not present on A.M.of 27th.—*Jerry Smith, 6865 Fredrickson Road, Lena, WI 54139.*

ALLEN'S OR RUFOUS HUMMINGBIRD (*Selasphorus* sp.)

(Note: Although it is more likely that this individual was a Rufous than an Allen's Hummingbird, birds in this plumage are very difficult to distinguish, even in the hand.)

12 July 1993, Ashland County—The Rufous Hummingbird moved right in among an uncountable number of Ruby-throated Hummingbirds as if he owned the 3 feeders that hung by three windows. We were about 4 feet

from the feeders but none of them seemed to mind. The difference between the two kinds was easy to discern. The Rufous Hummingbird has a green cap—like a skull cap. An orange gorget that circles the neck. This isn't very colorful on these pictures. The sun was setting when they were taken. The sky was a brilliant red shining on the window through which these pictures were taken. The back and sides of the breast are a rufous color; the wings are mostly green, tail is similar to the back with dark tips on the feathers. The bird was aggressive with the ruby-throats. If he wanted to feed he'd dive at a ruby-throat to get it away from the feeder. It came to the feeders for about an hour the morning of the 13th but hasn't been seen since.—*Maybelle Hardy, N 15210 Pine Creek Road, Park Falls, WI 54552.*

14 July 1994, Ashland County—Size was a bit bigger than Ruby throated . . . many to compare with . . . body shape was about the same as Ruby throated. Voice—same as Ruby only louder and faster. Fought with Ruby's--made one of four feeders his and kept all other Ruby's from it. Made a loop in the air. Did this twice while I was watching. Bill was black. Eyes were dark a bit of white next to eye—back of eye. Head—green on top running down to back. Rufous running from wing to back of eye—bit of white—dark color right over bill running to eye front. Inverted triangle of dark on throat--shining orange when sun caught it. Back was green with some rufous. Wings--dark edge with green and rufous—light underside. Breast—light colored--white patch under throat to the sides. Sides—rufous. Abdomen—grayish. Tail—rufous with green and dark tips.—*Cheryl L. Powell, RR1 Box 80, Butternut, WI 54514.*

Lawrence's Warbler (*Vermivora pinus* ± *V. chrysoptera*)

7 June 1994, Baxter's Hollow, Sauk County—One seen and heard in Baxter's Hollow on June 7 and 11. First discovered by Ron Lockwood (date uncertain), then found on June 7 by Lockwood, Bill Foster and Robbins, and on June 11 by Foster, Robbins, and Forrest Luke (Colorado ornithologist). Sang a typical Blue-winged Warbler song. Brilliant yellow plumage with two white wing bars sharply contrasted with gray wings. Large black patch on throat and upper breast, with a smaller black cheek patch. Top of head yellow. Sang from top of deciduous tree 60 feet away. The others saw the bird through a 25± Kowa scope. The bird flew just before I reached the scope, but I saw the distinctive marks through 8.5± binoculars.—*Sam Robbins, 14 S. Roby Road, Madison, WI 53705.*

Yellow-throated Warbler (*Dendroica dominica*)

4 June 1994, Wyalusing State Park, Grant County—The song from high in the pines near Point Lookout sounded like "Tyew, Tyew, Tyew, Tyew, Tyew, chew si seet." As I walked the Sentinel Ridge Trail toward the Green Cloud picnic area, I was to hear this song several times. I can say with certainty that three birds were singing, possibly more, but since I was on foot, the possibility

of hearing the same bird more than once was likely, so I will count only the persistent singer at Point Lookout and two simultaneously heard at the fork in Long Valley Road. At this fork one bird had a favorite singing perch atop a tall dead pine. With the sun at my back the bright yellow throat seemed to glow. The belly and undertail coverts were white, and black streaking was noted on the flanks. Due to the height of this pine, this was the usual view, but when the bird tilted its head downward a black facial patch which extended down into the neck area and a broad white eyebrow were noted. The back and wings could not be seen. These birds were very tireless songsters, and when I passed the area several times during my two days at the park, even at 4:30 P.M., I could always hear at least one bird.--*Thomas C. Wood, 8895E N. 91st Street, Milwaukee, WI 53224.*

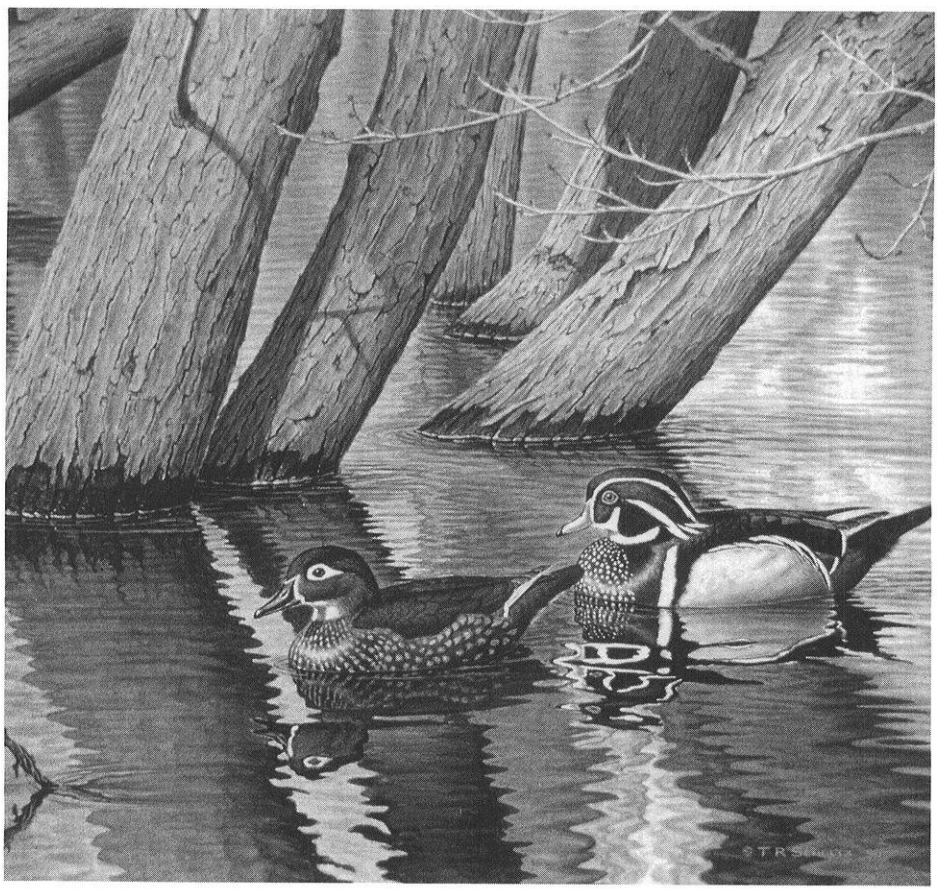
PRAIRIE WARBLER (*Dendroica discolor*)

11 June 1994, Portage County—Typical Dendroica build. Crown, most of face, nape, back, wings and tail olive green. Wings and tail a few shades darker. Wings plain except for indistinct wing bars, just pale yellowish ends to the wing coverts. Blurred, yet distinct face pattern. Bright yellow just above the bill, extending back into a superciliary over the eye. Dark, greenish-black lores and a broad malar stripe extending back around ear coverts, framing the olive face patch, which in turn framed a bright yellow crescent below the eye. At first glance the underparts were rather drab yellow. (The bird was soaked through with rain.) In preening and fluffing itself it revealed bright yellow breast and belly, and smudgy, broad dark streaks along sides of breast extending to the flanks. It wagged its tail. The bird kept to a small clump of ten foot jack pine, foraging and preening at heights of 0.5–7 feet. Distance 10–20 feet. 8± binoculars.—*Murray Berner, 31 Park Ridge, Stevens Point, WI 54481.*

2 July 1994, Sheboygan County—This is just an update of the bird I reported on May 14. The warbler was still present and singing frequently on July 2. Again, the bird appeared near the road and I saw the pertinent field marks well—yellow face with thin black eye-line and crescent under the eye, black streaks on the flanks, and reddish-brown streaks on an olive back.--*Thomas C. Wood, 8895E N. 91st Street, Milwaukee, WI 53224.*

PROTHONOTARY WARBLER (*Protonotaria citrea*)

21 June 1994, University of Wisconsin Arboretum, Dane County—Pair of Prothonotary Warblers feeding at least 3 fledglings. The male is the bright orange male listed in my spring notes. This bird is as orange as a male northern oriole—they sat next to each other one day and it was striking—in some light the bird looked *more orange* than an oriole—*almost red,*—sides of face, throat, breast. The female had faint orange wash on breast. I would like any information you have on the incidence of orange prothonotarys--someone told me this is a rare variation in plumage.—*Ellen Hansen, 10 Spear Circle, Madison, WI 53713.*



Wood Ducks *by Thomas R. Schultz*

WSO Records Committee Report—Summer 1994

Only four reports were received for consideration by the Records Committee for the summer of 1994. Interestingly, all involved hummingbirds.

by Jim Frank

Accepted

Selasporus (sp.) hummingbird—Ashland Co., 12–14 July 1994, Powell, Hardy, and Gregg.

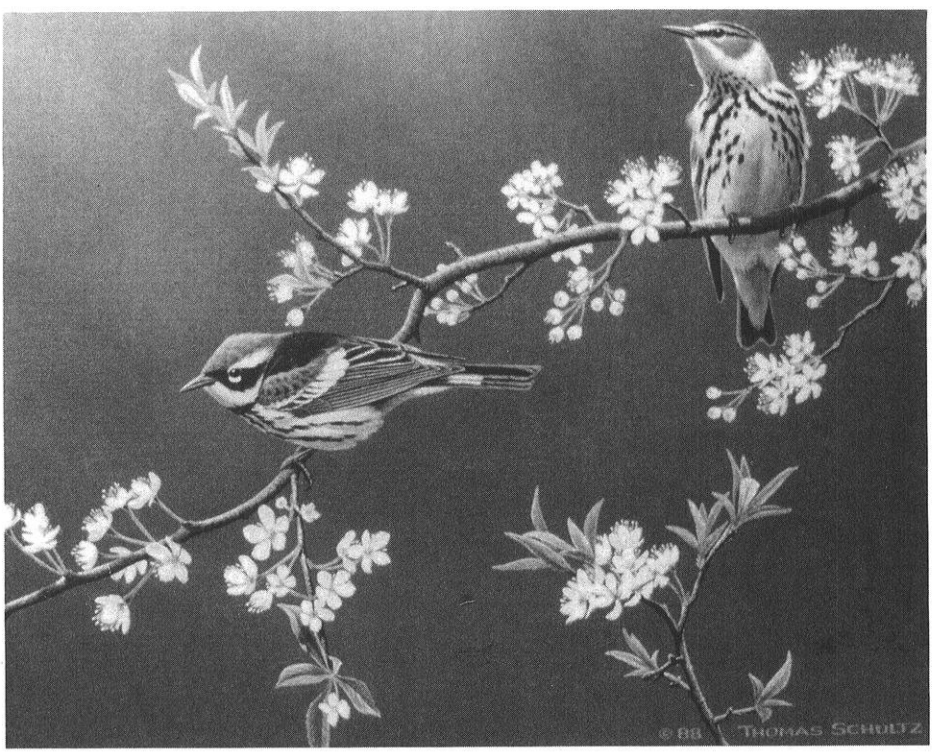
This photographed bird was described as being the same size as a Ruby-throated Hummingbird. The back and crown were green, but the rump, flanks, and tail were strikingly rufous. The white throat was flecked with grey-black that flashed orange in the right light. The descriptions and photos leave no doubt that this bird was not a ruby-throat. Although this bird was probably a Rufous Hummingbird, the description/photos suggest this is a first year male bird. Information in *Advanced Birding* by Kaufman considers Allen's and Rufous Hummingbirds indistinguishable in all but adult male plumages. The rufous flecking in the green back feathering is also noted in first year Allen's Hummingbirds. In spite of range and population sizes that would suggest this to be a Rufous Hummingbird, the identification is limited to Selasporus (species unidentified).

Not Accepted

Black-chinned Hummingbird—Marathon Co., 6 June 1994

This was described as being a small hummingbird, approximately 3″ in length, shorter than the usual ruby-throat. The back was green, the 1″ bill was slightly decurved, the breast grayish. The throat was black; however, on a couple of occasions, brilliant orange showed in the lower part of the black throat feathering. The iridescence of hummingbirds can often be inapparent depending on the brightness and angle of lighting. If a Black-chinned Hummingbird would have exhibited color, it would be expected that the lower throat would exhibit violet instead of orange iridescence. This bird was most likely a Ruby-throated Hummingbird.

Jim Frank
WSO Records Committee, Chair



"It's Warbler Time" *by Thomas R. Schultz*

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Terry Balding is a professor of biology at UW-Eau Claire. He teaches ornithology and animal behavior.

William S. Brooks is Professor of Biology at Ripon College, specializing in ornithology and ecology. He is involved with the Neotropical Migrant Bird Wisconsin Working Group, will be helping coordinate Wisconsin BBS work in Marquette County this and following summers, and will be continuing his 10-year project in the restoration of the prairie potholelike wetland called Rush Lake in Winnebago County.

Tom Doolittle is a freshwater ecologist and instructor for the Sigard Olson Environmental Institute at Northland College.

Jim Frank has been one of WSO's most active contributors to Seasonal Field-Notes. He now assists WSO by compiling and summarizing the annual May Day Counts, Big Day Counts and Migration Day Counts and is the Records Committee Chair.

He is a veterinarian in Milwaukee with an interest in avian medicine.

William L. Hilsenhoff is a Professor in the UW-Madison's Department of Entomology. He has been summarizing Wisconsin's Christmas Bird Counts each year since 1966. He has received WSO's Silver Passenger Pigeon Award for these contributions.

Robert W. Howe is a Professor of Natural and Applied Sciences at UW-Green Bay; he is also Chair of WSO's Research Committee.

Bradley A. McDonald initiated the hawk/leaf study as an undergraduate independent research project int he Biology Department at Ripon College. He was a chemistry and chemistry-biology major who is currently a practicing physician in Pennsylvania.

Brian E.P.B. O'Connell's senior thesis research as a biology major at Ripon College provided the concluding experimental work done for the hawk/leaf study. He is currently working in microbiological and

pharmaceutical research at Marquette University.

Thomas R. Schultz is a well-known Wisconsin wildlife artist and a frequent and generous contributor of his art to *The Passenger Pigeon.* He is also co-chair of WSO's Field Trip Committee.

Charles Sontag is WSO's current President and Professor of Biological Sciences at UW-Manitowoc. He holds an MS and PhD from UW-Madison and is an active birder statewide.

Thomas K. Soulen is one of WSO's hard working Field-Note Compilers and a frequent contributor to WSO activities. An expatriate Wisconsinite, now a Professor in the University of Minnesota's Botany Department, Tom has remained active in Wisconsin ornithology.

William R. Stott, Jr. is President of Ripon College and teaches ornithology as well as other subjects. He has travelled around the world to study ecology, birds, and natural history.

Andrew W. Zovnic has just completed his Master's degree in Environmental Science and Policy at UW-Green Bay based on his study of forest bird populations in northeast Wisconsin and the Nicolet National Forest. He is a native of DePere.

THE WISCONSIN SOCIETY FOR ORNITHOLOGY

The Wisconsin Society for Ornithology is an educational and scientific non-profit organization founded in 1939 "to encourage the study of Wisconsin birds." The Society achieves this goal through programs in research, education, conservation, and publication.

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