



THUNDER CAPE
BIRD OBSERVATORY
THUNDER BAY, ONTARIO

2021 Annual Report



Thunder Bay
Field Naturalists



BIRDS
CANADA OISEAUX
CANADA



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Thunder Cape Bird Observatory

THUNDER CAPE BIRD OBSERVATORY (TCBO)  conducts research and population monitoring of migratory birds along the north shore of Lake Superior. The observatory also provides education and training opportunities to the public and aspiring biologists. The observatory is nestled at the Tip of Sibley Peninsula south of Sleeping Giant Provincial Park. TCBO is a joint project of Birds Canada and the Thunder Bay Field Naturalists with support from the Ontario Ministry of Natural Resources and Forestry (OMNRF).


TCBO is strategically located at the southern tip of the Sibley Peninsula on the north shore of Lake Superior on the fringe of the Boreal Forest. This 35-km long forested peninsula is flanked by the highest cliffs in Ontario and is a natural migrant trap, particularly for waterfowl, raptors, and passerines in the fall. TCBO provides information on populations of Boreal breeding birds as a contribution to the Canadian Migration Monitoring Network and the OMNRF Wildlife Population Monitoring Program, as well as helping to document birds and natural history in the Thunder Bay District. The main aspects of the TCBO program are Migration Monitoring, Northern Saw-whet Owl, and Common Nighthawk monitoring.

Birds Canada

BIRDS CANADA  is the leading science-based bird conservation organization in Canada. The mission of Birds Canada is to conserve the wild birds of Canada through sound science, on-the-ground actions, innovative partnerships, public engagement, and science-based advocacy.

Birds Canada is a national charity built on the contributions of thousands of supporters and Citizen Scientists. Using data from our volunteer monitoring programs and targeted research, our scientists identify significant population changes and direct conservation planning. We are a strong partner in BirdLife International, the world's largest conservation alliance for nature and people, active in more than 120 countries and territories.

Thunder Bay Field Naturalists

THE THUNDER BAY FIELD NATURALISTS  club is a non-profit organization dedicated to the study of natural history, the wise use of natural resources, the preservation of natural areas, and the understanding and protection of nature.



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SLEEPING GIANT

Migration Monitoring Program

TCBO HAS BEEN COLLECTING STANDARDIZED DATA on bird migration at the tip of the Sibley Peninsula since 1992. TCBO was founded to conduct migration monitoring of migratory birds from the forests of Northwestern Ontario which migrate along the Sibley Peninsula on their way south in the fall and north in the spring.

Each spring and fall, staff and volunteers perform daily banding and observations at TCBO. The migration count data assembled at TCBO are used to derive daily estimated totals for each species recorded throughout the year. Ultimately, estimated total data are used to generate **population trends** [↗](#) for nearly 200 species. Migration monitoring is a particularly valuable method as it enables the monitoring of species that breed in northern Canada, or other inaccessible areas, which can be difficult to assess with more conventional monitoring methods such as the North American Breeding Bird Survey. There are now about 30 migration monitoring stations (bird observatories) across Canada which form the **Canadian Migration Monitoring Network (CMMN)** [↗](#).

In the autumn of 2021, TCBO banded 2602 birds of 76 species. The past ten-year average total is 3329. In addition, 137 recaptures of 31 species were processed.



Trends from TCBO and stations across Canada can be found [here](#) [↗](#)

Table 1. TCBO-banded birds reported from elsewhere in 2021 (includes reports from other years only received by TCBO in 2021).

Species	TCBO banding date	Foreign Encounter date	Foreign Encounter location
Canada Warbler	August 10, 2021	August 30, 2021	Duluth, Minn.
Northern Saw-whet Owl	October 21, 2020	September 25, 2021	Tofte, Minn.
Northern Saw-whet Owl	October 3, 2020	September 22, 2021	St. Ignace, Mich.
Northern Saw-whet Owl	October 3, 2020	October 15, 2020	Lakewood, Minn.
Northern Saw-whet Owl	September 23, 2020	November 17, 2020	Vernon County, Wis.
Northern Saw-whet Owl	October 18, 2016	March 30, 2021	Whitefish Point, Mich.
Sharp-shinned Hawk	October 1, 2020	October 19, 2021	Cedar Grove, Wis.
Sharp-shinned Hawk	October 1, 2020	September 11, 2020	Palmers, Minn.
Sharp-shinned Hawk	September 17, 2020	September 28, 2020	Lakewood, Minn.
Sharp-shinned Hawk	August 7, 2020	October 19, 2020	Cedar Grove, Wis.
Sharp-shinned Hawk	August 7, 2010	September 11, 2010	Palmers, Minn.

Table 2. Foreign recaptures at TCBO in the previous four years.

Species	Capture date at TCBO	Original banding date	Banding location
Blue Jay	June 2, 2018	October 10, 2017	Hawk Ridge Bird Observatory, Minn.
Northern Saw-whet Owl	October 4, 2021	April 27, 2020	Whitefish Point Bird Observatory, Mich.
Northern Saw-whet Owl	October 12, 2020	November 3, 2017	Not available
Northern Saw-whet Owl	October 17, 2019	October 10, 2017	Hawk Ridge Bird Observatory, Minn.
Northern Saw-whet Owl	October 16, 2019	October 6, 2015	Not available
Northern Saw-whet Owl	September 27, 2019	October 17, 2018	Hawk Ridge Bird Observatory, Minn.
Northern Saw-whet Owl	September 27, 2019	October 15, 2017	Not available
Northern Saw-whet Owl	October 24, 2018	October 20, 2016	Hawk Ridge Bird Observatory, Minn.
Northern Saw-whet Owl	October 7, 2018	November 7, 2017	Not available
Northern Saw-whet Owl	October 5, 2018	October 21, 2016	Not available
Northern Saw-whet Owl	September 27, 2018	April 13, 2017	Whitefish Point Bird Observatory, Mich.
Northern Saw-whet Owl	October 10, 2017	October 10, 2014	Hawk Ridge Bird Observatory, Minn.
Sharp-shinned Hawk	September 26, 2021	September 15, 2019	Hawk Ridge Bird Observatory, Minn.
Sharp-shinned Hawk	May 7, 2017	August 27, 2016	Hawk Ridge Bird Observatory, Minn.

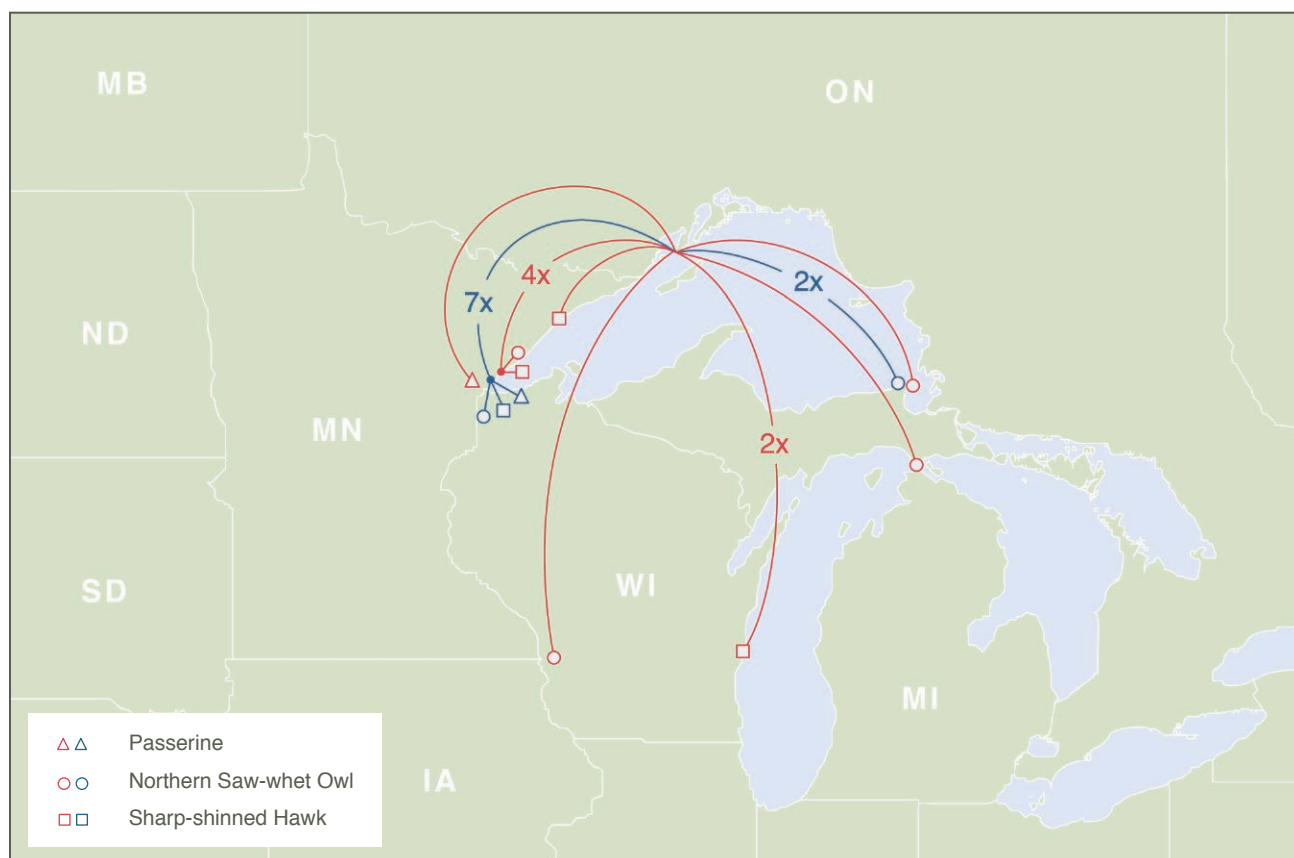


Figure 1. Encounters of TCBO-banded birds reported from elsewhere in 2021 (red), and foreign recaptures at TCBO (blue).

FALL MIGRATION MONITORING

The 30th fall migration monitoring season ran from August 1 to October 28, 2021 (89 days) with a limited crew for most segments of the period. Covid-19 precautions were maintained. The station banded 2 602 individuals of 76 species. This is lower than our past ten-year average of 3 329 banded birds of 88 species. In addition to the Program Coordinator, staff and Volunteers contributed 2 386 field hours. Mist nets were able to safely operate for 3 672 hours, hawk nets for 763.7 hours, ground traps for 3 442 hours, and J-trap was opened for 474.6 hours. The combined effort resulted in a capture rate of 27 birds/day. In addition to banded birds there were 137 recaptures of 31 species.

Table 3. Effort summary statistics for 2021 fall migration monitoring.

Person-hours	2 386
Total species and forms reported	
Individuals banded	2 602
Species and forms banded	76
Total station-days of migration monitoring	89
Total net-hours	4 435.7
Mist net	3 672.0
Hawk net	763.7
Total trap-hours	3 916.6
Ground trap	3 442.0
J-Trap	474.6
Overall catch rate	31.2 birds / 100 hours



The Black-capped Chickadee was the 3rd most banded species in 2021 (240 individuals)

There were 5 migration days when more than 100 individuals were banded (Table 2): September 22, 119 banded of 25 species including 52 Slate-coloured Juncos and 7 Western Palm Warblers, September 24, 143 banded of 19 species comprised of 60 Golden-crowned Kinglets and 36 Slate-coloured Juncos, September 26, 129 individuals of 26 species dominated by 42 Golden-crowned Kinglets 36 Slate-coloured Juncos, and 16 Brown Creepers, September 30, 103 banded of 9 species including 90 Black-capped Chickadees, and October 1, 157 individuals of 17 species made up by 60 Slate-coloured Juncos, 38 Black-capped Chickadees, and 27 Golden-crowned Kinglets.

Table 4. Days with 100+ birds banded, fall 2021.

Date	Birds banded (species)	Main Species (number banded)
September 22	119 (25)	<ul style="list-style-type: none"> ■ Slate-coloured Junco (52) ■ Western Palm Warbler (7)
September 24	143 (19)	<ul style="list-style-type: none"> ■ Golden-crowned Kinglet (60) ■ Slate-coloured Junco (36)
September 26	129 (26)	<ul style="list-style-type: none"> ■ Golden-crowned Kinglet (42) ■ Slate-coloured Junco (36) ■ Brown Creeper (16)
September 30	103 (9)	<ul style="list-style-type: none"> ■ Black-capped Chickadee (90)
October 1	157 (17)	<ul style="list-style-type: none"> ■ Slate-coloured Junco (60) ■ Black-capped Chickadee (38) ■ Golden-crowned Kinglet (27)



Most abundant species banded — fall 2021:

1. Slate-coloured Junco (311)
2. Golden-crowned Kinglet (291, pictured)
3. Black-capped Chickadee (240)

Impressive visual migration days were experienced on several days. On August 19 there was a pulse of 20 warbler species including 19 Nashville Warblers, 45 American Redstarts, 18 Magnolia Warblers, 10 Chestnut-sided Warblers, 14 Myrtle Warblers, 26 Black-throated Green Warblers, and 22 Chipping Sparrows. September 22 offered counts of 132 Western Palm Warblers, 78 Slate-coloured Juncos, 82 Common Grackles, 83 Pine Siskin, 35 Blue Jays, 35 Black-capped Chickadees, 26 Cedar Waxwing, and a high tally of 24 Blue-headed Vireos. On September 25, there were 178 Western Palm Warblers, 86 Myrtle Warblers, 141 Slate-coloured Juncos, 88 Common Grackles, and 37 Golden-crowned Kinglets. There were 500 Black-capped Chickadees on September 30. A day later, October 1, Black-capped Chickadees increased their total to 1283, with 300 Golden-crowned

Kinglets, 715 Slate-coloured Juncos, and 70 American Goldfinch. October 16 brought 160 Pine Siskin, 140 Rusty Blackbirds, 107 American Tree Sparrows, and a flight of 154 Common Mergansers. Common Redpolls flew in numbers over the last half of October to a high of 1280 on October 18 accompanied by 35 Pine Siskin and 24 White-winged Crossbills.

COMMON NIGHTHAWK MONITORING Daily evening counts were undertaken from August 10 to September 10. Common Nighthawks were observed on seven August nights in small numbers and two September evenings. Maximum counts were 4 individuals on September 1 and 7 birds on September 4. No birds were banded. This species shows a steady decline at this location.

NORTHERN SAW-WHET OWL MONITORING Our Northern Saw-whet Owl Monitoring program ran from September 15 to October 25. Weather conditions allowed safe operation on 37 nights. Two nights were curtailed for the close presence of a Barred Owl. Due to personnel makeup, we operated the minimum standard protocol period. We captured 120 birds.



—
Four of the 15
volunteers and intern
who lent a helping
hand in 2021.

VOLUNTEERS Volunteers offered tireless work which summed to 2386 hours. Without each one of them we would not have been able to accomplish our results. They are: Shannon Blake, Christine Cock, John Correia, Stephanie Davis, Al Harris, Kevin Van Huygevoort, Alexis Laskowski, Laura Mason, Sheldon McGregor, Jake O'Flaherty, Alex Roy, Kristen Setala, John Skemp, and Katie Smith. Many thanks are also offered to Taylor Simpanen for his assistance.

VISITORS Throughout this year two of the Sars-CoV-2 pandemic, many people came to experience what TCBO and Sleeping Giant Provincial Park has to offer. We engaged with 240 visitors, mostly day hikers but there were a few who camped nearby. Seven visitors paddled in kayaks and canoes. Every visit gives us an opportunity for outreach, education, and promotion.

2021 Bird Highlights

Included in this list (table 5) are rarities, out-of-season birds (e.g., overwintering neotropical migrants), notable concentrations, and significant banding highlights.

Table 5. 2021 bird highlights (in chronological order).



Female Painted Bunting
— A station first



Nelson's Sparrow
— One banded, fifth ever

Species	Notes
American White Pelican	Singles observed on July 31, August 4, 6, 19. Flock of 80 on October 16
Dickcissel	1 observed August 7, 8, 9, likely the same individual was banded on August 10. There have only been two other Dickcissel banded in the fall: 1992 and 1999. Two were captured in the spring of 2016.
Barn Swallow	2 observed on August 8
Whimbrel	1 flew past August 11
Bank Swallow	Singles on August 15, 22
Chimney Swift	1 observed August 18
Pectoral Sandpiper	Feeding August 25
Yellow-headed Blackbird	Male dropped in briefly August 31
Le Conte's Sparrow	1 observed August 31
Red Knot	1 flew passed September 2
Connecticut Warbler	1 observed September 5
Painted Bunting	1 female banded September 18, observed again September 19. A station first!
Boreal Owl	Heard calling September 19
Cackling Goose	Flying with Canada Geese September 19
Nelson's Sparrow	1 banded, September 27. There have been three others in the early station days of: 1998, 1999, and 2001. Only one has been handled in the spring of 1997.

Bonaparte's Gull	Observed on September 29, October 10, 12
Black-billed Cuckoo	Perched on September 30
Red-headed Woodpecker	Observed September 30
Sandhill Crane	4 observed October 1
Sora	Close to Heligoland trap October 5, 6
Barred Owl	Frequent visitor after October 5
American Woodcock	October 6
Wood Duck	7 observed on October 6, 2 on October 7
Canvasback	8 migrating October 7
Cooper's Hawk	Observed October 11
Wilson's Snipe	2 observed on October 12
Yellow Palm Warbler	1 banded October 13
Yellow-breasted Chat	1 banded October 13. First autumn banded, second for the station.
Northern Goshawk	Darted through October 18, 26
Short-eared Owl	Observed above island October 19
Western Meadowlark	Observed October 20
Audubon's Warbler	Observed October 21
Red-bellied Woodpecker	1 banded October 27
Blue-headed Vireo	28 were banded over the season. This represents a 14-year high total
Northern Parula	10 birds banded this season, an 18-year high total



Blue-headed Vireo — 28 banded



Yellow-breasted Chat — Second ever banded



Northern Parula — 10 banded

Table 6. Notable migration days/species movements



Rusty Blackbird



Sharp-shinned Hawk

●	Aug. 18	Chipping Sparrows 89 plus 17 warbler species (30 American Redstarts and 26 Northern Waterthrush)
●	Sep. 22	Western Palm Warblers 132 plus 83 Pine Siskins, 78 Slate-coloured Juncos and 24 Blue-headed Vireos
●	Sep. 24	Golden-crowned Kinglet 136 plus 104 Slate-coloured Juncos, 68 Pine Siskins and 64 Western Palm Warblers
●	Sep. 25	Western Palm Warbler 193 plus 172 Slate-coloured Juncos and 88 Myrtle Warblers
●	Sep. 26	Western Palm Warbler 141 plus 127 Slate-coloured Juncos
●	Sep. 27	Rusty Blackbird 111
●	Sep. 30	Black-capped Chickadee 500
●	Oct. 1	Black-capped Chickadee 1283 plus 733 Slate-coloured Juncos and 310 Golden-crowned Kinglets
●	Oct. 7	Pine Siskin 350 plus 137 Golden-crowned Kinglets
●	Oct. 12	Pine Siskin 200 plus 140 Rusty Blackbirds
●	Oct. 13	Pine Siskin 280
●	Oct. 16	Common Redpoll 259 plus 100 American Tree Sparrows and 75 Rusty Blackbirds
●	Oct. 18	Common Redpoll 1280
●	Oct. 22	Common Redpoll 944

Acknowledgements

TCBO graciously recognises the support of the Ontario Ministry of Natural Resources and Forestry, Thunder Bay Field Naturalists, Environment and Climate Change Canada, Fisheries and Oceans Canada – Canada Coast Guard, and Birds Canada. TCBO acknowledges support of the staff of Sleeping Giant Provincial Park for logistical support, Tom Eaton- Chair of Silver Islet Harbour Association, and the Bird Committee of Thunder Bay Field Naturalists for their assistance. Lastly, a special thank you to the volunteers that make our work possible every season.

TCBO COMMITTEE Ted Armstrong, Neil Dawson, Nick Escott, Allan Harris (Chair), Brian Ratcliff, Keith Wade

PHOTO CREDITS cover NSWO: Sheri and Brock Fenton; p. 2 Dark Forest Photography; p. 5 BCCH: Sheri and Brock Fenton. **All other photos: TCBO volunteers and collaborators.**

Thanks to our partners:



How You Can Help

TCBO relies heavily on the generosity of our supporters. There are many ways that you can make a lasting contribution to bird conservation through our research, training and education programs at Thunder Cape Bird Observatory: one-time donations, monthly giving plans, or a legacy gift. You can also contribute to TCBO and bird conservation across Canada by participating in the **Great Canadian Birdathon** [↗](#).



- \$ 2** Enables the banding of a bird.
- \$ 25** Keeps the bird feeders stocked for a week.
- \$ 50** Feeds our volunteer team for a day.
- \$ 100** Buys a mist net, or covers the cost of a boat trip to Thunder Cape.
- \$ 250** Buys a Motus Wildlife Tracking System tag.
- \$ 500** Supplies the stations with toilet paper for a year.
- \$ 1 000** Supports the attendance of a youth at one our Young Ornithologist Internship at Thunder Cape
- \$ 2 500** Supports the training of a pupil from Latin America.
- \$ 5 000** Provides a stipend to an assistant for one season.

Donations can be made online (link below) or sent by cheque made out to TCBO c/o Thunder Bay Field Naturalists, P.O. Box 10037, Thunder Bay, Ontario, P7B 6T6, or c/o Birds Canada P.O. Box 160, 115 Front St., Port Rowan, ON, N0E 1M0. Be sure to specify TCBO in any contribution on correspondence.

For more information about planned giving, please call us toll-free at 1-888-448-2473 ext. 174, or email Kate Dalglish at kdalglish@birdscanada.org.

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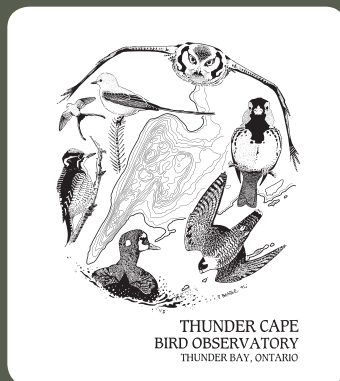
Appendix 1

TCBO's 2021 banding totals

Species and forms	Total Spring*	Total Fall	Grand Total
American Redstart	0	164	164
American Tree Sparrow	0	78	78
Bay-breasted Warbler	0	8	8
Black-and-White Warbler	0	60	60
Blackburnian Warbler	0	9	9
Black-capped Chickadee	0	240	240
Blackpoll Warbler	0	10	10
Black-throated Blue Warbler	0	19	19
Black-throated Green Warbler	0	24	24
Blue Jay	0	24	24
Blue-headed Vireo	0	28	28
Brown Creeper	0	62	62
Brown-headed Cowbird	0	1	1
Canada Warbler	0	30	30
Cape May Warbler	0	30	30
Cedar Waxwing	0	8	8
Chestnut-sided Warbler	0	6	6
Chipping Sparrow	0	66	66
Clay-colored Sparrow	0	8	8
Common Grackle	0	3	3
Common Redpoll	0	4	4
Common Yellowthroat	0	29	29
Dickcissel	0	1	1
Downy Woodpecker	0	12	12
Eastern White-crowned Sparrow	0	2	2
Fox Sparrow	0	2	2
Golden-crowned Kinglet	0	291	291
Gray-cheeked Thrush	0	4	4
Hairy Woodpecker	0	1	1
Harris's Sparrow	0	2	2
Hermit Thrush	0	5	5
Horned Lark	0	4	4
Lapland Longspur	0	2	2
Least Flycatcher	0	13	13
Lincoln's Sparrow	0	46	46

*Spring banding activities were canceled due to COVID restrictions.

Magnolia Warbler	0	60	60
Mourning Warbler	0	23	23
Myrtle Warbler	0	40	40
Nashville Warbler	0	55	55
Nelson's Sparrow	0	1	1
Northern Parula	0	10	10
Northern Saw-whet Owl	0	120	120
Northern Waterthrush	0	123	123
Orange-crowned Warbler	0	7	7
Ovenbird	0	20	20
Painted Bunting	0	1	1
Philadelphia Vireo	0	1	1
Pileated Woodpecker	0	6	6
Pine Siskin	0	7	7
Purple Finch	0	7	7
Red-bellied Woodpecker	0	1	1
Red-breasted Nuthatch	0	23	23
Red-eyed Vireo	0	20	20
Rose-breasted Grosbeak	0	1	1
Ruby-crowned Kinglet	0	16	16
Rusty Blackbird	0	4	4
Savannah Sparrow	0	54	54
Sharp-shinned Hawk	0	41	41
Slate-colored Junco	0	311	311
Song Sparrow	0	31	31
Swainson's Thrush	0	88	88
Swamp Sparrow	0	9	9
Tennessee Warbler	0	9	9
Trail's Flycatcher	0	26	26
Veery	0	3	3
Western Palm Warbler	0	49	49
White-crowned Sparrow	0	26	26
White-throated Sparrow	0	50	50
Wilson's Warbler	0	4	4
Winter Wren	0	12	12
Yellow Palm Warbler	0	1	1
Yellow Warbler	0	13	13
Yellow-bellied Flycatcher	0	20	20
Yellow-bellied Sapsucker	0	3	3
Yellow-Breasted Chat	0	1	1
Yellow-shafted Flicker	0	9	9
Total	0	2 602	2 602



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