LONG POINT
BIRD OBSERVATORY

2019 Annual Report

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BIRDS CANADA
OISEAUX CANADA

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Long Point Bird Observatory

IN OCTOBER 1959, six members of the Ontario Bird Banding Association made the first expedition to the Tip of Long Point in search of an ideal location to study bird migration. In the spring of 1960, the Long Point Bird Observatory (LPBO) was founded. Today, LPBO is the oldest bird observatory in the Western Hemisphere and houses one of the largest continuous data sets on migratory birds in the world.

LPBO quickly grew beyond the borders of Long Point with the implementation of regional and provincial research and monitoring programs, including the Ontario Bird Feeder Survey (precursor to Project FeederWatch), and North America's first sponsored bird count fundraiser, the Great Canadian Birdathon (previously Baillie Birdathon). Remarkable growth occurred in the following decades with the initiation and coordination of a wide range of national and international programs and initiatives. In recognition of the organization's breadth and aspirations, LPBO membership voted to create Bird Studies Canada (now Birds Canada) in 1998. LPBO was then reinvented as a program of Birds Canada operating research, education, and training programs that focus on ornithology, conservation, and other aspects of natural history at Long Point. LPBO programs include the Migration Monitoring Program, Young Ornithologists' Workshop and Internship, Tree Swallow Research Project, Latin American Training Program, Long Point Breeding Bird Census and Wetland Monitoring, and an active and diverse program of public education, professional training, and collaborative research.

You can follow our weekly sightings board during the migration monitoring seasons, or find us on Facebook, Instagram, or Twitter.

Birds Canada

BIRDS CANADA is Canada's leading science-based bird conservation organization. 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.

LPBO is a program of Birds Canada which provides substantial administrative, leadership, scientific and technical support.

BIRDS CANADA
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LONG POINT
BIRD OBSERVATORY

Canadian Migration
Monitoring Network

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AMERICAN ROBIN

Migration Monitoring Program

LPBO HAS BEEN COLLECTING standardized data on bird migration at Long Point since 1960. In 1986, LPBO coined the term "migration monitoring" to describe the use of standardized daily counts of migrating birds as a method of monitoring populations of selected species. Each spring and fall, staff and volunteers perform daily censuses, banding, and observations at each of three research stations on Long Point: Old Cut, Breakwater, and the Tip. The migration count data assembled at LPBO 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 over 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 across Canada which form the **Canadian Migration Monitoring Network**.

In 2019, 21,189 birds of 142 species and forms were banded at LPBO, well below the long-term average of 28,112 birds of 150 species and forms. In 2019, LPBO banded 24.6 % fewer birds (6,923 individuals) than the previous 10-year average. The number of species and forms banded (142) was 8 fewer than the previous 10-year average of 150. In addition, 3 918 recaptures of previously banded birds were processed.

LPBO's first ever Western Meadowlark was banded April 10, and its second Eurasian Tree Sparrow on May 18, both at the Tip. A colour-banded Loggerhead Shrike was recaptured from the Loggerhead Shrike Recovery Program run by Wildlife Preservation Canada. This bird was released in the summer of 2018 near Napanee, Ontario.

A record high number of 76 Northern Parulas were banded in 2019, surpassing LPBO's previous record of 64 in 2017.

Trends from LPBO and stations across Canada can be found **here**

Twenty-nine birds that were previously banded at LPBO were reported as encountered elsewhere in 2019 (Table 1). The farthest encounter of an LPBO band was of a Ruby-crowned Kinglet found in South Carolina on November 11, 2019, after being banded at LPBO on October 6, 2019—a journey of 929 km! An American Redstart, originally banded at Old Cut Field Station May 2015 was recaptured in Pennsylvania in June 2019. A Tree Swallow banded as a nestling in 2015 was recap-

Table 1. Encounters of LPBO banded birds reported from elsewhere in 2019.

Species	Age at banding	Banding date	Encounter date	Encounter location
American Goldfinch	ASY	04/11/2018	05/18/2019	Ontario
American Kestrel	Unknown	09/23/2012	08/01/2019	Tennessee
American Redstart	SY	05/30/2015	05/16/2019	Pennsylvania
American Robin	HY	09/11/2018	04/01/2019	Arkansas
Blue Jay	AHY	09/26/2018	05/10/2019	Michigan
Blue Jay	HY	10/06/2018	04/04/2019	Minnesota
Blue Jay	SY	05/03/2016	06/25/2019	Pennsylvania
Brown-headed Cowbird	HY	11/12/2019	11/18/2019	Ontario
Brown-headed Cowbird	AHY	04/25/2017	05/21/2019	Ohio
Common Grackle	AHY	04/19/2017	04/28/2019	Ontario
Northern Saw-whet Owl	SY	11/05/2016	11/06/2019	New York
Northern Saw-whet Owl	SY	11/03/2017	11/03/2019	Ontario
Northern Saw-whet Owl	HY	10/16/2019	10/26/2019	Minnesota
Northern Saw-whet Owl	HY	10/24/2018	10/04/2019	Ontario
Northern Saw-whet Owl	HY	10/14/2018	10/24/2019	Wisconson
Northern Saw-whet Owl	HY	10/24/2018	04/13/2019	Ontario
Northern Saw-whet Owl	ASY	10/31/2017	03/29/2019	Michigan
Northern Saw-whet Owl	SY	10/21/2018	04/05/2019	Michigan
Northern Saw-whet Owl	HY	10/16/2019	10/20/2019	Minnesota
Northern Saw-whet Owl	HY	09/28/2019	10/20/2019	Minnesota
Red-headed Woodpecker	ATY	05/04/2017	07/08/2019	Ontario
Red-winged Blackbird	HY	08/26/2018	04/16/2019	Minnesota
Red-winged Blackbird	SY	04/22/2015	04/06/2019	Pennsylvania
Rose-breasted Grosbeak	SY	05/08/2015	04/07/2019	Ontario
Ruby-Crowned Kinglet	HY	10/06/2019	11/11/2019	South Carolina
Tree Swallow	Nestling	06/11/2014	04/28/2019	Ontario
White-throated Sparrow	SY	05/02/2019	05/04/2019	Ontario
White-throated Sparrow	HY	10/21/2018	04/06/2019	Ohio
Yellow Warbler	SY	05/17/2018	05/17/2019	Pennsylvania

AHY = after hatch year; **ASY** = after second year; **HY** = hatch year; **SY** = second year; **U** = unknown.

tured April 2019 in Ontario. LPBO also had 15 foreign recaptures that have been confirmed to date (Table 2).

In addition to banded and recaptured birds, LPBO counted 1,287,551 birds during 18,749 person-hours of migration monitoring.

Table 2. Foreign recaptures at LPBO in 2019.

Species	Age at banding	Encounter date	Original banding date	Banding location
Black-capped Chickadee	AHY	04/08/2019	10/22/2018	Toronto, Ontario
Common Grackle	HY	4/16/2019	08/07/2017	St. Williams, Ontario
Gray Catbird	HY	08/04/2019	9/24/2019	St. Williams, Ontario
Hermit Thrush	HY	4/23/2019	10/17/2017	Fergus, Ontario
House Finch	HY	04/09/2019	09/11/2018	St. Williams, Ontario
Loggerhead Shrike	HY	04/09/2019	08/06/2018	Napanee, Ontario
Northern Saw-whet Owl	AHY	10/18/2019	9/27/2017	Cook County, Minnesota
Northern Saw-whet Owl	SY	10/28/2019	10/10/2019	Hilliardton, Ontario
Northern Saw-whet Owl	HY	11/08/2019	11/11/2018	Garrett County, Maryland
Northern Saw-whet Owl	SY	11/08/2019	10/15/2019	Picton, Ontario
Pine Siskin	HY	05/01/2019	11/22/2018	St. Williams, Ontario
Red-Winged Blackbird	SY	4/27/2019	04/09/2017	St. Williams, Ontario
Swainson's Thrush	AHY	5/17/2019	9/15/2018	Bath, Michigan
Tree Swallow	AHY	06/09/2019	06/04/2018	Long Point, Ontario
Tree Swallow	SY	06/03/2019	06/08/2018	Long Point, Ontario

AHY = after hatch year; **ASY** = after second year; **HY** = hatch year; **SY** = second year; **U** = unknown.

NORTHERN SAW-WHET OWL

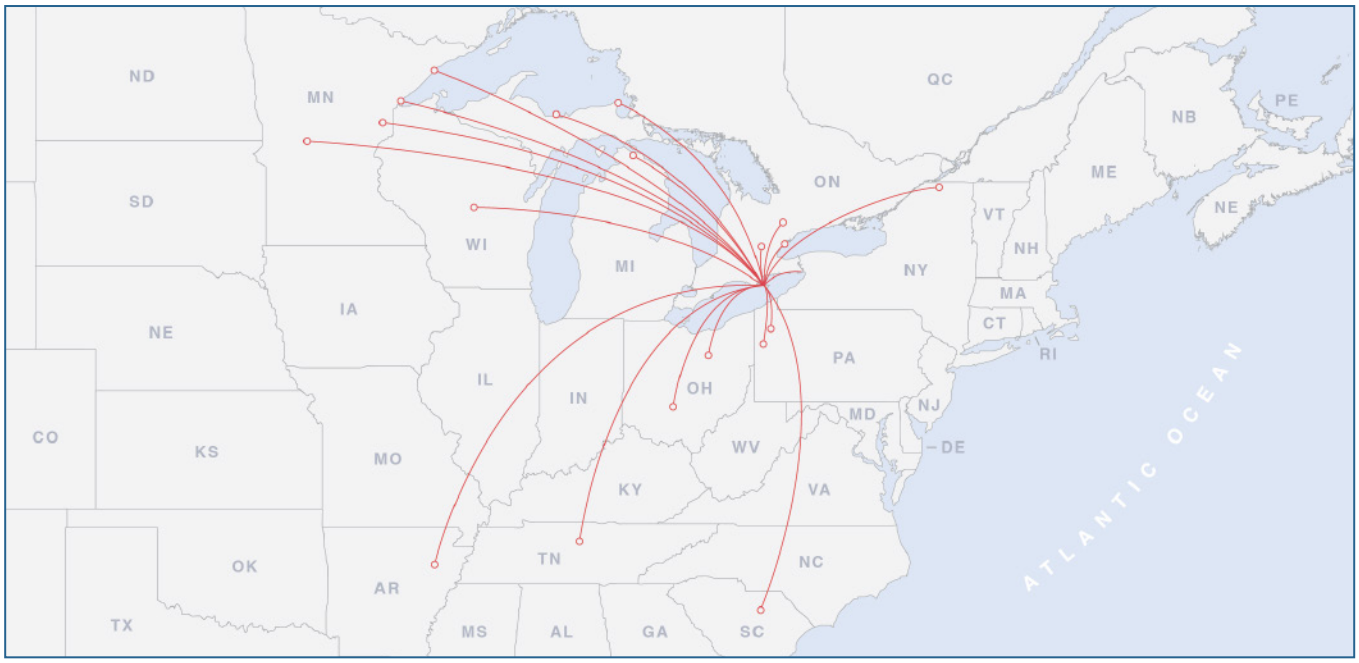


Figure 1. Encounters of LPBO banded birds reported from elsewhere in 2019.

SPRING MIGRATION MONITORING

LPBO'S 60TH SPRING MIGRATION MONITORING SEASON ran at Old Cut from April 1 to June 10 (74 days), at Breakwater from April 16 to June 5 (49 days), and at the Tip from April 4 to June 6 (64 days). Volunteers and staff logged 6 249 hours collecting migration data on over 245 species. Summary statistics of seasonal effort are summarized in Table 3. In total, 12,070 birds of 131 species and forms were banded (Table 4 and Appendix 1). LPBO had 187 station-days of coverage, yielding 13,220 net-hours and 1 036 trap-hours with a catch rate of 84.6 birds/100 hours (74% of captures were in nets). The Friends of LPBO welcomed 1 812 unique visitors to the Old Cut Field Station and Visitor Centre.

Spring migration always means colourful wablers! From left to right: Mourning, Canada, and Blackburnian Warblers

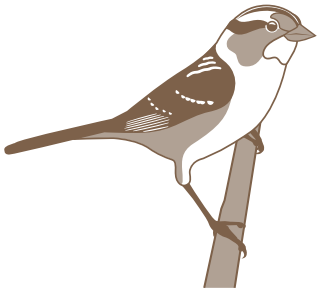
VOLUNTEERS Jenny Andrews (Canada), Kathryn Boothby (Canada), Brendan Boyd (Canada), David Brewer (Canada), David Burgess (Canada), Alexandra Buxton (UK), Brittany Cooke (Canada), Jessica Deakin (Canada), Erica Fellin (Canada), Callum Gibson (UK), Julian Grudens (USA), Jillian Haight (Canada), Cathy Hamel (Canada), Erika Hentsch (Canada), Alex Israel (Canada), Sean Jenniskens (Canada),Tim Jones (UK), James Lees (Canada), Anton Liebermann (Denmark), Sara Lupi (Italy), Khulsen Luvsan (Canada), Tim Micallef (Malta), Eleanor Page (UK), Aidan Place (USA), Rebecca Pearce (Canada), Emma Radziul (Canada), Bill Read (Canada), Kerrigan Rogers (Canada), Hannah Stockford (Canada), Jory Teltser (USA), Matt Timpf (Canada), Miranda Sawyer (Canada), Amy Wilson (Canada), Ross Wood (Canada), Jordan Winter (Canada).

Table 3. Effort summary statistics for 2019 spring migration monitoring.

Person-hours	6 249
Total species and forms observed	245
Individuals banded	12,070
Species and forms banded	131
Total station-days of migration monitoring	187
Old Cut	74
Breakwater	49
Tip	64
Total net-hours	13,220
Mist net	13,220
Total trap-hours	1 036
J-trap	528
Ground trap	508
Overall catch rate	84.6 birds / 100 hours
% of catch in mist nets	74
% of catch in traps	26
Visitors to Old Cut	1 812

Table 4. Ten most abundant species banded at LPBO, spring 2019.

Species	Number banded
White-throated Sparrow	1 004
Ruby-crowned Kinglet	738
Red-winged Blackbird	692
Blue Jay	547
Red-breasted Nuthatch	470
American Goldfinch	443
Brown-headed Cowbird	439
Slate-colored Junco	423
Chipping Sparrow	417
Golden-crowned Kinglet	370



White-throated Sparrow

Most abundant species banded —spring 2019

SPRING BIRD HIGHLIGHTS

Locations referenced in this section are part of the **Long Point Birding Trail**

SNOW GOOSE There were a few scatted records throughout the winter and spring with a high count of 28, including 7 blue morphs flying over the Causeway, March 19 (JBF).

ROSS'S GOOSE Four were found at Silver Lake February 13 (MTT) and continued to be observed there until February 15 (M. Obs).

GREATER WHITE-FRONTED GOOSE Numerous birds were observed through the winter at Silver Lake and in the Port Royal area. A high count of 35 was observed at Silver Lake March 12 (MTT).

EURASIAN WIGEON One was observed at Birds Canada Headquarters March 19 (SAM). A male was observed at Lee Brown WMA March 25 (JSL) and continued until March 26 (M. Obs.).

RED-NECKED GREBE One was observed at the Tip April 30 (JGT).

KING RAIL One was heard on Squires Ridge April 22 (JBF).

WHITE-WINGED DOVE One was observed at the Tip June 3 (AHL, JGT). The bird was observed two hours later at Breakwater (KGC, AJP), and observed again at the Tip June 7 (SAM) and banded June 8 (LPBO).

LESSER NIGHTHAWK A deceased bird was found by Andrew Couturier along Hwy 59 adjacent to the Old Provincial Park May 8 (AC). Rigor mortis had not yet set in so it was likely a relatively fresh roadkill from near dawn; it had a clearly broken neck. The bird was in definitive basic plumage (adult) and was female. The specimen is now at the Royal Ontario Museum. This is Ontario's second, and Long Point's first, Lesser Nighthawk. It's been 45 years since the first Ontario sighting April 29, 1974 by Alan Wormington at Point Pelee.

Lesser Nighthawk
—A deceased bird was found by Andrew Couturier along Hwy 59 adjacent to the Old Provincial Park May 8. Rigor mortis had not yet set in so it was likely a fresh roadkill from near dawn. The bird was in definitive basic plumage (adult) and was female. The specimen is now at the Royal Ontario Museum. This is Ontario's second, and Long Point's first, Lesser Nighthawk.

AMERICAN AVOCET Two flew past the Tip April 30 (LPBO). Another was observed May 5 at the Tip. (JGT)

AMERICAN GOLDEN-PLOVER Thirty flew over the Tip May 19 (ERB). Seven flew over Old Cut (SAM) and were re-found later that day at Lee Brown (BPB, AMI). Fourteen were observed flying west over Big Creek National Wildlife Area on May 23 (MTT).

UPLAND SANDPIPER One was observed at the Tip April 30 (KGC, EOR).

WHIMBREL Thirteen were observed at the Tip May 25 (SAM), and another 25 were observed flying over the Birds Canada Headquarters May 29 (SAM).

HUDSONIAN GODWIT One was observed flying west past the New Long Point Provincial Park May 15 (eBird).

MARBLED GODWIT Three were at Lee Brown WMA April 28 (SAM).

STILT SANDPIPER Two were observed at the Tip April 28 (KGC, EOR). This is only the second spring record for Long Point.

BUFF-BREASTED SANDPIPER One was observed at the Tip May 14 (JSL). This is the first spring record for Long Point.

WILLET One was observed at the Port Rowan Wetland May 15 (JRA, KGC).

LITTLE GULL One was observed at the Tip on May 27-28 (LPBO), another was observed June 1 in Port Dover (AD, MJ). Up to seven young birds were observed off the south shore at the Tip June 5 (LPBO).

LAUGHING GULL One was observed at the Tip May 28 (AJP, JGT), and was spotted again July 1 and 2 (LPBO).

ICELAND GULL Individuals were observed at the Tip April 12 (CG) and on the Inner Bay April 14 (SAM).

GLAUCOUS GULL Individuals were observed at the Tip May 13 (EP1) and May 27 (AJP).

ARCTIC TERN One was observed off the south beach near the Provincial Park May 16 (RR). One flew over the 'New' Provincial Park May 21 (KGB).

RED-THROATED LOON A high count of 74 at the Tip April 30 (JGT). Twenty-four were off the LPPP on May 6 (RR). One hundred thirty seven observed at the Tip of Long Point May 12 (JSL). Four birds were observed at Breakwater May 25 (JT).

PACIFIC LOON One flew past Breakwater April 24 (JBF).

COMMON LOON A high of 600 were observed at the Tip April 22 (LPBO).

CATTLE EGRET One along the Lakeshore Road fields May 20 (KMB).

IBIS SPECIES Four Ibis Sp. were observed flying over Old Cut dyke May 2 (CPG).

BLACK VULTURE One was observed in Port Dover April 22 and 23 (KK, MTT).

MISSISSIPPI KITE A young bird was observed flying east at the Coves May 26 (SAM).

SNOWY OWL One was observed at the Tip April 14-15 (LPBO).

LONG-EARED OWL Individuals at Old Cut April 15 and the Tip April 19 (LPBO).

NORTHERN SAW-WHET OWL One was heard at Breakwater May 15 (JGT).

ACADIAN FLYCATCHER One was banded at Old Cut May 23 (LPBO) and an unbanded individual observed May 23 and 24 (MTT, JBF).

TROPICAL KINGBIRD The first for Long Point was observed on Squires Ridge June 12 (AJP, HS).

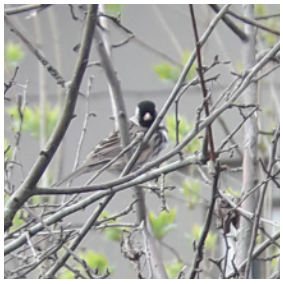
WHITE-EYED VIREO Individuals were at Old Cut April 19 (banded) and April 21 (unbanded) (LPBO). Individuals were present in the New Long Point Provincial Park May 5 and 7 (RR), and another at the Tip May 20 (ERB).

LOGGERHEAD SHRIKE One bird was recaptured at the Tip April 9 (LPBO). This bird was part of a **captive-breeding program** in Ontario and was released in the summer of 2018 near Napanee, Ontario. This is LPBO's second capture of a migrating captive-reared shrike from the recovery program. The first was in September 2004 when a bird released on the Bruce Peninsula was recaptured at the Tip. This proves that, not only do captive-bred birds survive, they also exhibit expected migratory behaviour. LPBO has only banded 26 Loggerhead Shrikes, the last in 1988.

Tropical Kingbird
—The first for Long Point was observed on Squires Ridge June 12

Loggerhead Shrike
—A colour-banded bird was recaptured at the Tip April 9

Eurasian Tree Sparrow
—Male banded May 17



Harris's Sparrow
—Individual found along Woodstock Ave. May 16

Nelson's Sparrow
—Individual banded at the Tip May 29

FISH CROW One was observed being harassed by a pair of American Crows at Birds Canada Headquarters April 18 (RR). One flew over the south beach at the 'New' Provincial Park May 16 (KGB).

COMMON RAVEN Individuals flew over Old Cut May 21 (KMB) and Breakwater May 29 (ARB, ALH).

SEDGE WREN One was observed near Squires Ridge on April 30 (LPBO), and another at Breakwater May 6 and 7. Two were singing on Squires Ridge on Long Point May 21 (KGC, JGT). Two were at Hahn Marsh (EG) and one at the 'New' Provincial Park May 16 (RR).

EURASIAN TREE SPARROW A minimum of three individuals were at the Tip May 17 to 24 (LPBO). One male was banded at the Tip May 17 (LPBO). Unbanded individuals were observed at the Tip May 20 and 21 (LPBO), and two unbanded birds were observed at the Tip May 24 (AJP).

PURPLE FINCH Three hundred sixty were observed at the Tip May 1 (LPBO). Many hundreds were also observed moving through Long Point May 7 (LPBO).

RED CROSSBILL Seven were observed along Yuell Rd. April 13 (SAM).

CLAY-COLORED SPARROW Individuals were observed at the Tip April 20 and May 15 (JSL) and banded there April 21 and May 6 and 17. One was banded at Breakwater May 9 (AHL, JGT).

LARK SPARROW One was at the Okines/Heagy property north of St. Williams May 16 (DO).

HARRIS'S SPARROW One was found along Woodstock Ave. near the Old Provincial Park May 16 (KGB).

NELSON'S SPARROW One was banded at the Tip May 19 (LPBO).

YELLOW-BREASTED CHAT One was banded at Breakwater May 19 (LPBO) and an unbanded individual was observed there later that day (ARB, AHL, JGT). Another was observed at Old Cut and on Palin St. on Long Point May 21 (LPBO).

YELLOW-HEADED BLACKBIRD An adult female was banded at Old Cut February 28 (LPBO). One was observed in Port Rowan April 28–May 3 (SAM). Adult male banded at Breakwater May 15 (LPBO) and observed again May 18 (AHL, JGT).

Yellow-breasted Chat
—Individual banded at Breakwater

Yellow-headed Blackbird
—Adult male banded at Breakwater

Worm-eating Warbler
—Individual banded at Breakwater

Prothonotary Warbler
—Male banded at Breakwater

Cerulean Warbler
—Male banded at the Tip

WESTERN MEADOWLARK The first to be banded at LPBO was captured at the Tip April 10 and continued to April 11 (LPBO).

WORM-EATING WARBLER Individuals were banded at Breakwater May 5 (LPBO), observed at the Tip May 10 (JGT), and observed in Wilson's Tract May 17 (SP).

LOUISIANA WATERTHRUSH One was observed at Old Cut April 16 (JBF) and numerous occupied territories in the Norfolk Forest Complex Important Bird Area.

GOLDEN-WINGED WARBLER An excellent spring for this species. Individuals were observed near the entrance to the New Provincial Park May 6 (TL), Old Cut May 7, 10, and 27 (SAM, JSL, AJP), and in the Old Provincial Park May 20 (APT). At the Tip, individuals were present May 10, 17, and 25 (LPBO). One was observed at Breakwater May 16 (AHL).

PROTHONOTARY WARBLER One adult male was banded at Breakwater May 16 (LPBO) and another was observed at Old Cut May 19 (SAM). This was an exceptional year with 7 known pairs that bred in the greater Long Point area producing 47 young (OBARP).

KENTUCKY WARBLER One was banded at Old Cut May 17 (LPBO).

KIRTLAND'S WARBLER One was observed at Breakwater May 10 (AHL).

CERULEAN WARBLER One was observed at the Tip May 7 (JGT). An adult male was also banded at the Tip May 16 (LPBO).

YELLOW-THROATED WARBLER One was observed at the 'New' Provincial Park May 1 (MH).

PRAIRIE WARBLER Individuals were observed at the 'New' Provincial Park April 26 (HP), at Breakwater May 2 and 22 (BPB, AMI, LPBO), at Old Cut May 5 (DO, AEH), and at the Tip May 6 (LPBO).

SUMMER TANAGER One female was observed at Breakwater May 19 (JGT) and continued until May 21 (LPBO). A second year male was observed at the Tip on May 27, was banded May 28, and remained May 29 (LPBO).

DICKCISSEL Individuals were observed at the Tip May 2 and June (JGT, LPBO).

Prairie Warbler
—Many individuals observed at several locations

Summer Tanager
—Second year male banded at the Tip May 28

This Western Meadowlark, the first ever to be banded at LPBO (Tip station, April 10), was one of spring 2019's most notable highlights

OBSERVERS Jody Allair (JRA), Kathryn Boothby (KMB), Brendan Boyd (BPB), Emma Buck (ERB), Alex Buxton (ARB), Kenneth Burrell (KGB), Kyle Cameron (KGC), Callum Gibson (CPG), Ethan Gosnell (EG), Brett Fried (JBF), Mike Hallett (MH), Audrey Heagy (AEH), Alex Israel (AMI), James Lees (JSL), Anton Lieberman (AHL), Tim Lucas (TL), Stu Mackenzie (SAM), David Okines (DO), Henrique Pacheco (HP), Simon Papps (SP), Aidan Place (AJP), Emma Radziul (EOR), Ron Ridout (RR), Hannah Stockford (HS), Jory Teltser (JGT), Adam Timpf (APT), Matthew Timpf (MTT), Ontario Birds at Risk Program (OBARP), and Long Point Bird Observatory (LPBO).

FALL MIGRATION MONITORING

LPBO'S 59TH FALL MIGRATION MONITORING SEASON ran at Old Cut from August 15 to November 15 (92 days), at Breakwater from July 31 to September 19 (50 days), and at the Tip from August 19 to October 28 (70 days). Volunteers and staff logged 12,500 person-hours collecting migration data on over 239 species and forms. The Friends of LPBO helped to welcome 1 508 unique visitors to Old Cut. Summary statistics of seasonal effort are presented in Table 5. In total, 8 399 birds of 111 species and forms were banded (Table 6 and Appendix 1). LPBO had 212 station-days of coverage, yielding 23,624.5 net-hours and 847 trap-hours with a low catch rate of 34.3 birds/100 hours (92 % of captures were in nets).

Long Point is recognized as one of three International Monarch Butterfly Reserves in Canada due to its large concentrations of butterflies during fall migration. In 2019, daily afternoon Monarch censuses were conducted at Breakwater from July 31 to September 17, and at the Tip from August 20 to October 24. The total count of Monarchs was 8 637, with 1 356 at Breakwater and 7 281 at the Tip. The largest single-day count at Breakwater was 264 September 10, while the largest single-day count at the Tip was 1 130 on September 24.

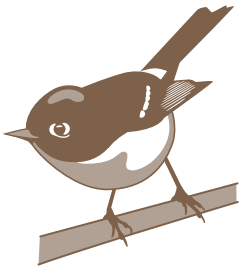
One of eight Rusty Blackbirds banded in the fall of 2019 at LPBO

VOLUNTEERS Shane Abernethy (Canada), Jenny Andrews (Canada), David Brewer (Canada), Lucas Berrigan (Canada), Rinchen Boardman (Canada), Santiago Castro (Mexico), Jessica Deakin (Canada), Kelsey Ettinger (Canada), Callum Gibson (UK), Julian Grudens (USA), Keith Hobson (Canada), Catherine Jardine (Canada), Sean Jenniskens (Canada), Janos Kovacs (Canada), Jackson Kusack (Canada), James Lees (UK), Ben Lees (Canada), Sara Lupi (Italy), Sam Meigs (USA), Rebecca Pearce (Canada), Bill Read (Canada), Elijah Rodgers (Canada), Alyssa Sargent (USA), Lakesha Smith (Canada), Matt Timpf (Canada), Antoine Turcotte-van De Rydt (Canada), Eva Visscher (Canada), Julie Webber (USA), Ross Wood (Canada), Reyna Zuasnabar Yauri (Peru).

MONARCH BUTTERFLIES

Table 5. Effort summary statistics for 2019 fall migration monitoring.

Person-hours	12,500
Total species and forms observed	239
Individuals banded	8 399
Species and forms banded	111
Total station-days of migration monitoring	212
Old Cut	92
Breakwater	50
Tip	70
Total net-hours	23,625
Mist net	23,625
Total trap-hours	847
J-trap	427
Ground trap	421
Overall catch rate	34.3 birds/100 hours
% of catch in mist nets	92
% of catch in traps	8
Visitors to Old Cut	1 508



Ruby-crowned Kinglet

Most abundant species banded —fall 2019

Table 6. Ten most abundant species banded at LPBO, fall 2019.

Species	**Number banded**
Ruby-crowned Kinglet	837
Blackpoll Warbler	588
Magnolia Warbler	388
American Redstart	372
White-throated Sparrow	366
Golden-crowned Kinglet	348
Yellow Warbler	324
Myrtle Warbler	301
Cape May Warbler	238
Swainson's Thrush	206

FALL BIRD HIGHLIGHTS

SNOW GOOSE One was observed at Old Cut October 18 (SHM). Four were observed along the Lakeshore Road Fields November 16 (SAM), and two more on December 2 (APT). One was observed at Lion's Park December 3 (RS).

RED-NECKED GREBE One was observed at the Tip October 10 and 15 (LPBO). Two were observed at the Tip October 20 (SMJ).

COMMON NIGHTHAWK Peak migration was observed from September 6-8 at Big Creek National Wildlife Area with counts over 100 each night. A high-count of 282 was counted at Big Creek National Wildlife Area September 8 (SAM, TM, RR, APT). One late individual flew over Old Cut October 28 (SHM).

SANDHILL CRANE A high estimate of 5-6 000 was observed Dec. 24 (SAM).

AMERICAN GOLDEN-PLOVER Individuals were at Breakwater September 3 (MTT), the south shore of Long Point September 5 (JBF, EJR), Breakwater September 6 (SMJ), and Turkey Point beach October 6 (SAM).

UPLAND SANDPIPER One flew over the 'New' Provincial Park August 8 (KGB).

WHIMBREL Individuals were observed in St. Williams July 21 (RR) and Big Creek National Wildlife Area August 24 (SAM). Two were observed at Breakwater September 9 (JBG, SMJ). One was observed at the Turkey Point Marina September 16 (DB, GS, JC) and September 19 (JRA).

HUDSONIAN GODWIT One was observed at the Tip October 23 (SMJ). Two were observed at the Tip October 28 (SAM).

RED KNOT One was at Townsend's Sewage Lagoons September 4 (JSL). One young bird was observed at Turkey Point beach October 11 (SAM).

STILT SANDPIPER One bird was observed at Silver Lake in Port Dover October 5 (APT, MTT). Five were observed at Turkey Point beach October 6 (SAM), and one remained until October 8 (HG).

PURPLE SANDPIPER One was observed at Turkey Point beach November 15 (SM).

BUFF-BREASTED SANDPIPER One was observed along the south shore of Long Point September 5 (JBF, MTT).

RED-NECKED PHALAROPE One was observed at the Tip August 10 (SAM).

POMARINE JAEGER Two were observed at the Tip October 22 (SMJ).

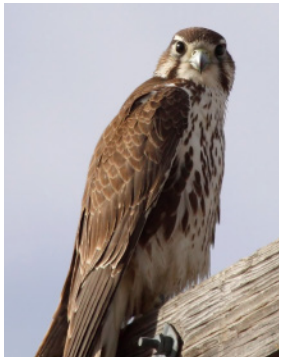
PARASITIC JAEGER Individuals were observed at the Tip from September 16 (KGC) through October 28 (SAM) with a high count of three off the Tip October 17 (SMJ, KGC, JBG).

LONG-TAILED JAEGER One was observed at the Tip September 15 (SHM).

SABINE'S GULL One was observed off the Tip October 17 (SMJ).

LITTLE GULL Six were observed at the Tip September 16 (EJR, SHM). Individuals were observed off the Tip September 24-26 (SMJ); at Turkey Point September 28

Locations referenced in this section are part of the **Long Point Birding Trail**



Prairie Falcon
—Long Point's second record was observed between the 'New' Provincial Park and Breakwater August 24.

Vermilion Flycatcher
—A young bird was observed at the Tip September 22. This is Long Point's second Vermilion Flycatcher after a long run as one of Long Point's 'next' birds.

Western Kingbird
—Individual observed at The Coves October 4

(SAM), October 12 (JBG, KGC), and October 22 and 25 (SMJ); in Port Dover October 23 (SAM); on the Inner Bay October 25 (SAM); and at the Tip October 26 (SAM). Three were observed at the Port Rowan Harbour October 28 (SAM). A high count of 23 was observed off of Turkey Point beach November 9 (SL, WL).

LESSER BLACK-BACKED GULL Individuals were observed at the 'New' Provincial Park July 11 and September 8 (SAM), at the Tip September 5 (JBF), September 26, 29, and 30 (SMJ), October 9 and 14 (LPBO), and October 19 (SBC), and Old Cut October 5 (SMJ).

BLACK TERN Individuals were observed at the Tip October 27 (SHM) and Port Rowan Harbour October 28 (SAM).

COMMON LOON A group of 123 was observed on the Outer Bay June 26 (SAM).

AMERICAN WHITE PELICAN One was observed flying over Old Cut November 6 (JBG) and was observed in the channels around Long Point until November 8 (M. Obs.).

CATTLE EGRET Scattered sightings of one individual making the rounds near Port Rowan October 23 (SM, DL et al.) and a high count of four at Townsend Sewage Lagoons October 21-24 (JSL).

YELLOW-CROWNED NIGHT-HERON One immature bird was observed at the Tip October 7 (SBC). If confirmed, this would be the fifth record for Long Point and the first since 1987.

HERON SP. A small dark heron, presumed Little Blue, was observed flying at Highway 59 and Highway 3 in Courtland July 18 (DL).

RED-TAILED HAWK A dark (calurus/abieticola) Red-tailed Hawk was observed along the Lakeshore Road Fields December 22 (SAM).

PRAIRIE FALCON Long Point's second record was observed between the 'New' Provincial Park and Breakwater August 24 (SAM, RWW). Coincidentally, the first was observed at the Tip 23 years to the day in 1996. One observed December 18, 1976 was thought to be a bird that had recently escaped a falconer near Toronto.

VERMILION FLYCATCHER A young bird was observed at the Tip the afternoon of September 22 (SHM, ERB). This is Long Point's second Vermilion Flycatcher after a long run as one of Long Point's 'next' birds. The first, an adult male, was observed April 27, 2018.

WESTERN KINGBIRD One was observed at The Coves on October 4 (RS).

WHITE-EYED VIREO Individuals were observed in the New Long Point Provincial Park Oct. 12, 17 and 19 (SAM, EG, EG2), Old Cut Oct. 29 (banded), Nov. 3, 4, and 9 (LPBO), and the Port Rowan Wetland Dec. 6 (SAM).

PURPLE MARTIN High counts for the season of 30,000 were observed at Old Cut (SMJ) and 12,500 at Breakwater (MTT, ZWD) August 27 and August 28 respectively.

SWALLOWS A conservative minimum estimate of at least 100,000 birds was present at Big Creek National Wildlife Area August 24 through 29 (SAM, M.Obs). The roost is primarily comprised of Bank, Barn, and Tree swallows and very small numbers of Rough-winged and Cliff swallows.

VARIED THRUSH One flew over Old Cut October 17 (SAM).

GRASSHOPPER SPARROW One late bird was observed at the Timpf Farm November 8 (APT).

WHITE-CROWNED SPARROW One moulting adult was banded at Old Cut August 9 (LPBO). This is the first August record for Long Point.

LECONTE'S SPARROW One was observed at the Tip October 3 (EJR).

NELSON'S SPARROW One observed at the 'New' Provincial Park September 22 (CL).

HENSLOW'S SPARROW A territorial male was present near Walsingham from early June through early August (APT). It was observed carrying food in mid-July but breeding was not otherwise confirmed. This is the first summer record at Long Point since 2005. The last migrant was observed at Old Cut April 29, 2011.

YELLOW-BREASTED CHAT One was banded at the Tip October 20 (LPBO).

YELLOW-HEADED BLACKBIRD One was observed at BC Headquarters October 18 (DL).

GREAT-TAILED GRACKLE One female-type was observed at the Port Rowan Wetland December 6 (SAM). This is the third record for Long Point and second record at this location.

BLACKBIRDS Conservative estimates of one million Red-winged Blackbirds and three million Common Grackles were made at Big Creek National Wildlife Area November 1 (SAM).

GOLDEN-WINGED WARBLER Individuals were observed at Breakwater August 14 (MTT) and Old Cut September 15 (SAM).

'YELLOW' PALM WARBLER One was banded at Old Cut October 14 (LPBO).

PRAIRIE WARBLER One was observed at Breakwater September 5 (MTT).

DICKCISSEL One flew over Port Rowan September 22 (SAM).

OBSERVERS Jody Allair (JRA), David Bradley (DB), Emma Buck (ERB), Kyle Cameron (KGC), James Casey (JC), Santiago Castro (SBC), Henny Giles (HG), Ethan Gosnell (EG), Elaine Gosnell (EG2), Julian Grudens (JBG), Sean Jenniskens (SMJ), Sarah Lamond (SL), William Lamond (WL), James Lees (JSL), Denis Lepage (DL), Catriona Leven (CL), Stu Mackenzie (SAM), Dan MacNeal DM), Taylor Marshal (TM), Sam Meigs (SHM), Steve Moore (SM), Elijah Rodgers (EJR), Ron Ridout (RR), Richard Skevington (RS), Graham Sorenson (GS), Adam Timpf (APT), Matthew Timpf (MTT), Julie Webber (ZWD), Ross Wood (RWW), and Long Point Bird Observatory staff (LPBO).

White-eyed Vireo
—Individual banded at Old Cut

White-crowned Sparrow
—This adult is the first record for August in Long Point

Henslow's Sparrow
—A territorial male was present near Walsingham from early June through early August. It was observed carrying food in mid-July, but breeding was not otherwise confirmed. This is the first summer record at Long Point since 2005

Special Programs

THE FRIENDS OF LONG POINT BIRD OBSERVATORY

The Friends of LPBO continued in 2019 as a group of around 20 volunteers who greet and inform visitors to the Old Cut Research Station and maintain the LPBO Shoppe and Visitor Centre. The Friends also help with a myriad of other tasks around the station, including scribing, extracting birds from nets, and gathering observations. Revenue from the shoppe provides critical support for the maintenance of LPBO facilities. The Friends have dramatically increased the quality of our visitor and education services at Old Cut and takes a great deal of pressure off of the Banders-In-Charge and our volunteers.

FRIENDS Hugh McArthur, Sandra Maxwell, Evelyn Stone, Ted & Paula Gent, Ruth Ann Logan, Barb Hourigan, Geoff Atkins, Betty Chanyi, Diane Salter, Julia Wever, Otto & Gail Larsen, Gabe Gabriel, Len Grincivicious, Ted Maddeford, Brenda Burville, Ricky Dunn, Donna Fick and Tia McGraff.

The Friends of Long Point Bird Observatory on their Spring Gathering

TREE SWALLOW PROJECT

This long-term research program was initiated in 1963 at the eastern Tip of Long Point under the direction of David Hussell and Geoff Holroyd. While the initial work at the Tip provided valuable detailed data on breeding biology, the need for a broader geographic scope prompted expansion of this project to include two mainland sites in the mid-1970s, presently at Mud Creek and the Port Rowan Wetland (previously sewage lagoons). Across these sites, the current project consists of 207 nest boxes with differing geography, food abundance, and micro-climates. The objectives of this project are (1) to provide a long-term record of breeding performance of Tree Swallows in relation to their food supply and local climate; (2) to provide other opportunities for research on breeding swallows; and (3) to provide training in field ornithology for students and other volunteers.

Table 7. Summary of Tree Swallow Project banding in 2019

Location	Total Nest Boxes	Active Nest Boxes (%)	New Adults Banded	Recaptured Adults	Nestlings Banded
Tip	65	31 (48)	23	8	99
PR Wetlands	62	62 (100)	16	37	251
Mud Creek	80	75 (94)	21	34	271
Total	**207**	**123 (57)**	**60**	**79**	**621**

TREE SWALLOWS

Since its inception, the project has annually supported post-graduate, graduate, and undergraduate students, has involved the training of more than 200 volunteer fieldworkers, and has resulted in over 20 peer-reviewed publications and numerous theses and presentations. The project completed its 49th year in 2019. In total, 60 new adults were banded and 79 adults were recaptured. An additional 621 nestlings were also banded (Table 7, previous page). In addition to collecting basic breeding parameters and maintaining the marked population, the project contributed to a long-term study examining accumulated toxins from the environment being conducted by Environment and Climate Change Canada, and is part of a continent-wide study on variation in insect abundance.

COOPERATORS Megan Hiebert, Emma Buck, Kyle Cameron, Jordan Winter, Callum Gibson, Alex Buxton, Emma Radziul

LONG POINT CHRISTMAS BIRD COUNT

Immature Peregrine Falcon with an early Christmas dinner

The Christmas Bird Count is North America's oldest standardized census providing valuable information on the early winter distribution and abundance of birds. It is also a vital outreach and birder/naturalist recruitment tool, and has become a proud holiday tradition for many. For more information visit **birdscanada.org/volunteer/cbc/**

The 59th Long Point Christmas Bird Count took place on 14 December. The count covers a 24.14-km (15 miles) circle centred on the lighthouse south of St. Williams, ON. Forty-four birders counted 21,247 birds of 92 species which is pretty remarkable considering the conditions. This is the ninth lowest species total, and total numbers were below the long-term average of 28,201 of 102 species, and well below the recent decade average of 38,898 of 102 species. Since the count began in 1961, volunteers have contributed more than 8 000 hours counting more than 1.5 million birds of 194 species.

Generally mild conditions leading up to the count kept Long Point's Inner Bay, Big Creek, and waterways mostly free of ice and there was no snow cover. We couldn't have asked for a more gloriously miserable day for the count. The day began with pouring rain around 3 AM which eventually transitioned to freezing rain, sleet, or wet snow, depending on how far you were from the shoreline. Temperatures ranged between -1 and 2 °C, and the wind was from the west ranging from 10 to 40 km/h later in the day. Despite the horrendous weather, there was a great sense of accomplishment and comradery among all observers that had conquered the day. Birds were extremely difficult to find and all teams observed lower than average, or record low numbers of almost every species.

An estimated 3 500 Sandhill Cranes were counted on December 14, an all-time high for the event

The few highlights from the day included:

CACKLING GOOSE Two were observed at Big Creek National Wildlife Area.
PEREGRINE FALCON The count's sixth ever was observed near Old Cut.
SANDHILL CRANE Highest ever estimate of 3 500.
SNOWY OWL One observed on Hastings Dr.
COMMON YELLOWTHROAT One was observed along the north shore of Long Point Bay near Turkey Point and another in the Big Creek National Wildlife Area.

COUNT WEEK SPECIES Pied-billed Grebe, Double-crested Cormorant, Northern Pintail, Killdeer, Horned Lark, American Pipit, Northern Shrike, Savannah Sparrow, Pine Warbler, Eastern Meadowlark.

A VERY SPECIAL THANKS TO OUR HEARTY OBSERVERS Geoff Atkins, Yousif Attia, Gregor Beck, Amanda Bichel, Brendan Boyd, Michael Bradstreet, John Brett, Kyle Cameron, Cindy Cartwright, Mary Gartshore, Paul Gent, Ted Gent, Peter Carson, Barb Charlton, Ian Fife, Christian Friis, Joseph Gabriel, Eric Giles, Audrey Heagy, Alex Israel, Barry Jones, Kevin Kavanagh, Bill Lamond, Sarah Lamond, John Lounds, Tim Lucas, Stu Mackenzie, Matt Mills, David Okines, Becky Pearce, George Pond, Ron Ridout, Diane Salter, Josh Sayers, Evan Sinclair, Bob Stamp, Terry Tait, Adam Timpf, Megan Hiebert, Karen Wood, Ross Wood.

BREEDING BIRD CENSUS

The Long Point Breeding Bird Census was established by LPBO in 1991 to monitor the response of vegetation and breeding bird communities to a reduction in deer browse due to deer management practices on the Long Point National Wildlife Area. The Long Point Company reintroduced White-tailed Deer to the point in the late 1800s. A lack of natural predators resulted in a population explosion that, by the 1980s, was demonstrating severe negative impacts on the fragile ecology of Long Point. Following the beginning of deer management conducted by Environment and Climate Change Canada - Canadian Wildlife Service in 1989/90, LPBO established fifteen 10-ha plots covering all the major habitat types on Long Point (Figure 2). Since 1991, breeding bird communities have been surveyed on these plots on a rotating basis, and comprehensive vegetation surveys have been conducted on all plants annually by the late Jane Bowles and Michael Bradstreet with additional support from Environment and Climate Change Canada. In 2019, LPBO cooperators conducted censuses on five plots mapping 690 territories of 49 breeding species.

COOPERATORS Emma Buck, Kyle Cameron, Aidan Place, Jory Teltser.

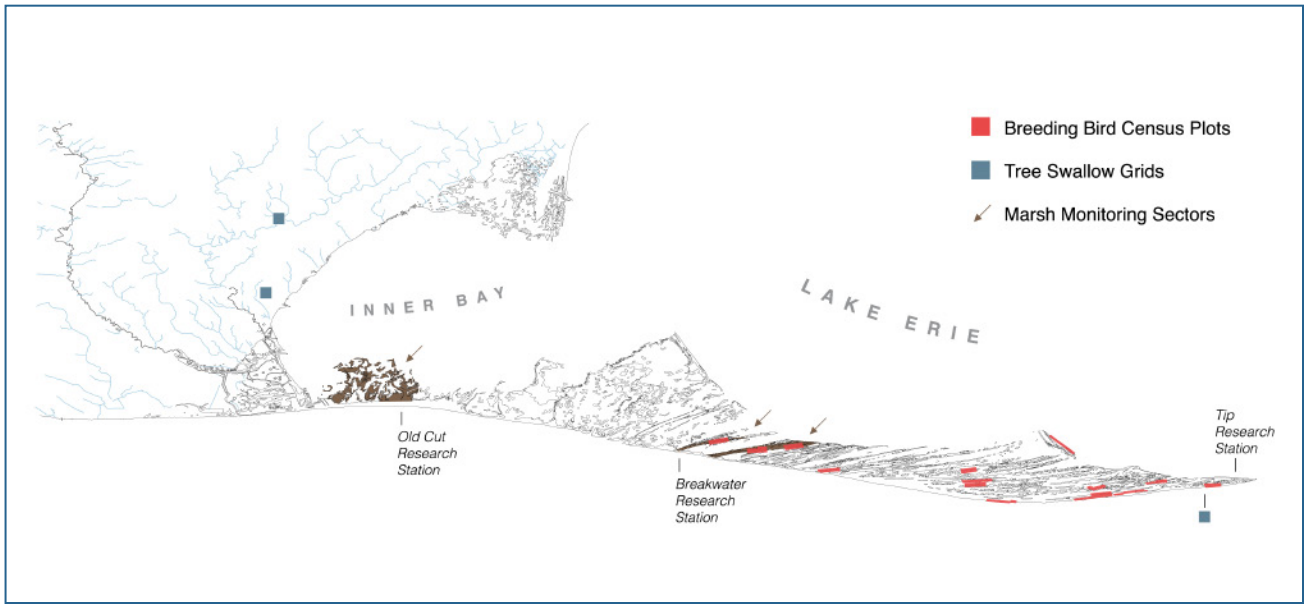


Figure 2. Map of Long Point Breeding Bird Census plots, Tree Swallow grids, and Marsh Monitoring sectors

NORTH AMERICAN BANDING COUNCIL CERTIFICATION

The **North American Banding Council** promotes sound and ethical banding techniques and practices across the Americas. LPBO adheres to the standards, guidelines, and recommendations established by NABC, and is a steadfast contributor to their mission.

On November 8 to 9, LPBO held an NABC certification session in collaboration with the Ontario Bird Banding Association to assess the skills, knowledge and practices of candidates.

NEWLY CERTIFIED BANDERS Shane Abernethy, Emma Buck, Stefany Desroches, Julian Grudens, Sam Meigs, Lakesha Smith.

ASSISTANT BANDERS Sanitago Castro, Alison Hackney, Reyna Zuasnabar Yauri.

GREAT LAKES MARSH MONITORING PROGRAM

In 2019, LPBO conducted Great Lakes Marsh Monitoring Program (GLMMP) surveys on Courtright and Squires ridges as well as the Crown Marsh as part of an ongoing effort to monitor the long-term health and changes in the diversity and abundance of wetland birds and amphibians on Long Point. In the short-term, these data are being used to monitor the results of extensive management of *Phragmites australis* in the region.

The Least Bittern is one of five GLMMP target species to be detected on the 2019 surveys. See results from this program in a new publication **here**

The historical and recent surveys on Courtright Ridge, Squires Ridge and Crown Marsh routes followed the GLMMP protocol of fixed-distance point counts (100-m semicircle) using playback to elicit responses from target species. Each route consisted of seven point count stations. In 2019, two point counts were conducted at each station during the month of June. A vegetation assessment was also conducted at each of the stations in accordance with the GLMMP protocol. Three amphibian surveys were also conducted along each route for the GLMMP. Five of the nine GLMMP target wetland species were detected on the 2019 surveys: Pied-billed Grebe, Least Bittern, American Bittern, Virginia Rail, and Common Gallinule. For more information visit **birdscanada.org/volunteer/glmmp/**

The Young Ornithologists' Workshop has fostered 163 of Canada's brightest young scientists, naturalists, and conservationists since 1975.

YOUNG ORNITHOLOGISTS

LPBO began the Young Ornithologists' Workshop in 1975, as the Bird Study Workshop. The project received major ongoing support in 1994 thanks to the generosity and foresight of the late Doug Tarry, establishing the Doug Tarry Natural History Fund. The fund supports educational activities for young Canadians at LPBO, which currently includes the Young Ornithologists' Workshop and Internship, and group-based education programming. The workshop currently invites six of Canada's best and brightest young naturalists and environmentalists to be fully immersed in a ten-day, experience-based ornithological and natural history smorgasbord of hands-on research, lectures, field trips, and related activities. Graduates of the workshop are invited back to participate in the Young Ornithologist Internship where they spend a month immersed in the research and conservation programs of the observatory and Birds Canada. Six pre-university level youth from across Canada participated in the 2019 workshop in early August, which brings up the total to 163 students fostered since 1975. To learn more visit **birdscanada.org**

YOUNG ORNITHOLOGISTS Jack Farley (Toronto, ON), Sasha Fairbairn (Vancouver, BC), Ethan Gosnell (Kitchener, ON), Delaney McHugh (Stratford, ON), Rebecca Reader-Lee (Vancouver Island, BC), Simeon Rodgers (Sault Ste. Marie, ON).

YOUNG ORNITHOLOGIST INTERN Eva Visscher (St. Thomas, ON)

PROJECT VOLUNTEERS James Cowan (Canadian Raptor Centre), Mary Gartshore, David Okines (Ontario Bird Banding Association), Megan Hiebert, Will Van Hemessen, Sarah Bonnett, and Amy Wilson.

LATIN AMERICAN TRAINING PROGRAM

LPBO has been operating a series of Latin American training initiatives since 1987. In 1995, LPBO began bringing trainees north to Long Point for a formal month-long (or longer) training stint immersing them in the Migration Monitoring Program. Participants receive the most up-to-date training in bird banding, migration monitoring, and data management. To date LPBO has trained over 100 individuals from 15 countries throughout Central and South America. LPBO also contributes to the development of protocols, training opportunities abroad, and certification through the North American Banding Council and the Western Hemisphere Bird Banding Network.

This year the program hosted Santiago Castro from Mexico for the entire fall season and Reyna Zuasnabar Yauri from Peru for two months. Through Birds Canada, additional support and training was provided for ongoing training work in Colombia associated with a project on Swainson's Thrushes and Canada Warblers.

Latin American trainees along with part of the fall 2019 LPBO volunteers and staff during a NABC session

YOUNG PROFESSIONAL EXCHANGE

LPBO has entered into a Friendship Agreement with the bird observatories of **Cape May** in the U.S., **Falsterbo** in Sweden, and **Spurn** in the UK. The goal of this agreement is to share experiences and expertise and to foster the development of young professionals. To this end, we have embarked on a Young Professional Exchange where the best and brightest youth from our organizations get a chance to immerse themselves in life at other observatories and learn firsthand about their birds, practices, and programs. In spring 2019, LPBO coordinator Emma Buck and volunteer Callum Gibson visited Spurn and we welcomed Tim Jones from Spurn.

Collaborative Research

LPBO collaborates with a wide variety of investigators to maximize the scientific output of our operations and data, as well as integrate research into our training regime and vice versa. The following is a brief summary of LPBO's collaborative research contributions in 2019. All projects are conducted with appropriate permits and have been approved by animal care committees.

Breeding season carry-over effects of forest fragmentation on Wood Thrush (*Hylocichla mustelina*)

Brendan Boyd (PhD candidate)

Principal Investigator: Dr. Bridget Stutchbury, York University

The Wood Thrush is an iconic North American long-distance migrant that has been steadily declining for decades. Habitat loss and fragmentation on the breeding grounds have been shown to cause short-term negative effects on immediate breeding success. However, long-term impacts on adults, or carry-over effects, have not been studied. The Motus Wildlife Tracking System, for the first time, has allowed me (Brendan Boyd) to examine the link between breeding fragment size and both fall migration and annual survival. Wood Thrushes occupying small fragments are expected to experience high rates of brood parasitism and nest predation. This could directly delay fall migration due to timing constraints from late re-nesting or indirectly delay migration if adults are in poorer condition. Wood Thrushes are large enough to carry radio tags with a one-year battery life, allowing detection of adults who return to the study area in southwestern Ontario. I captured adult Wood Thrushes in large and small forest fragments in Norfolk County during the 2016-2019 breeding seasons and fitted them with radio tags in order to track their movements. I am testing two main predictions: (1) the initiation of fall migration will occur later for birds breeding in small versus large fragments and (2) there will be a lower annual return rate for birds breeding in small versus large fragments.

Sex-related wing shape dimorphism and vertical take-off speed in migratory songbirds

Jessica Deakin (PhD candidate)
Principal Investigators: Drs. Yolanda Morbey and Chris Guglielmo,
University of Western Ontario

The wings of migrating birds are under immense selective pressures that reflect the birds' need to fly efficiently, exploit habitat effectively, and survive as predator or prey. Wing shape, measured by morphometric parameters, plays a vital role in determining the overall flight performance of birds. Low aspect ratio wings (short and blunt) increase take-off speed, which could result in increased predator avoidance. High aspect ratio wings (long and pointy) and low wing loading (large wings compared to body) reduce the energetic costs of flight, which could ultimately increase the overall rate of migration. Common among migratory songbirds during spring migration is protandry, meaning early male arrival. As a result, sex related differences in wing shape should represent ecological trade-offs between overall migratory flight speed and predator avoidance. As part of my PhD research, I (Jessica Deakin) am evaluating this relationship across various species of migratory songbirds. Birds were captured at Long Point Bird Observatory, Ontario, Canada during spring migration in 2018 and 2019 and fall migration 2019. The birds were then released into a vertical flight chamber equipped with quad-level infrared detection sensors that measure take-off speed and acceleration. Pictures of the wings were used to determine various wing morphometrics such as wing span, wing area, and wing pointedness.

Can nest concealment in Wood Thrushes predict reproductive success?

Alexandra Israel (MSc candidate)
Principal Investigator: Dr. Bridget Stutchbury, York University

Predation is an extremely important force in nature, driving the amazing variety of defense strategies we see in prey species. The Wood Thrush (*Hylocichla mustelina*) is a long-distance migrant that has declined severely in the last 50 years and is currently listed as a threatened Species at Risk in Canada. In many species of birds, nest predation is a major source of nest failure, accounting for nearly 80 % of unsuccessful nests on average. To understand how a threatened species might reduce nest failure, I (Alexandra Israel) investigated whether nest concealment increased the success of Wood Thrush nests. During the summer of 2017-2019, Wood Thrush nests were found within large and small forest fragments selected throughout Norfolk County, Ontario. I measured the amount of vegetation concealing each nest, in addition to a variety of other characteristics. With dozens of migratory songbirds in decline, and increasing numbers joining the Species at Risk list, it is critical to understand what

management choices could increase nesting productivity. Predation is the leading cause of nest failure in Wood Thrushes, so finding whether nest concealment is an effective countermeasure is important for informing future conservation efforts for this declining species.

How black-legged ticks (*Ixodes scapularis*) affect haematology and ectoparasite community assemblages of their *Peromyscus* mouse hosts

Erica Fellin (MSc candidate)

Principal Investigator: Dr. Albrecht Schulte-Hostedde, Laurentian University

The two most widely distributed mice species in North America, the deer mouse and white-footed mouse, are both common hosts to external parasites, such as the black-legged tick. As the global climate continues to warm, the geographic range of the black-legged tick expands northwards in Ontario as their hosts' range expands. Understanding the impact this tick species has on the haematology of their hosts (specifically haemoglobin and iron levels) can help make predictions on the health of these mammals, including their mobility and motor skills, which can impact the movement of black-legged ticks. Additionally, recognizing the ecological community of parasites on these mice when black-legged ticks are present can help to ascertain what other parasites carrying zoonotic pathogens may also share these hosts with black-legged ticks. From May to August 2019, I (Erica Fellin) trapped mice across four sites in Ontario (going from Long Point as the most southern site, to Algonquin Park as the most northern) to compare haemoglobin levels of these mice as well as differences in parasitic communities. My two main predictions are: (1) mice that host black-legged ticks in newly established populations (i.e. "naive" mice) will be more negatively impacted in their haematology than those mice that have hosted black-legged ticks in their populations for several years or decades (i.e. "experienced" mice), and (2) mice that carry black-legged ticks are more likely to have a greater diversity of other parasites on them than those individuals that do not carry these ticks.

Over-winter and migratory movements of American Tree Sparrow

Kevin Hannah and Stuart Mackenzie, Environment and Climate Change Canada and Birds Canada

For most migratory birds, most research has focused on events during the breeding season, despite the fact that many species spend the majority of the annual cycle away from the breeding grounds. Information on the migratory routes, timing, and habitat use during the non-breeding season remain largely unknown for most species.

As a result, effective conservation and management decisions remain hampered by a lack of information. For the northern-breeding American Tree Sparrow, the supply of suitable breeding habitat may be sufficient for the needs of the current estimated population. Considered abundant and widespread, trend data suggest this species has experienced troubling long-term population declines in recent decades. Given this disconnect, it is conceivable that events during the non-breeding season may be more limiting for this species. Improving our understanding of winter movements, habitat use, and survival will fill an important data gap critical for the development of effective conservation actions and management approaches. We are using the Motus Wildlife Tracking System to improve our understanding of wintering American Tree Sparrows in central and southern Ontario. The resulting data will provide useful information for evaluating potential limiting factors to their populations and developing conservation recommendations.

Determining bird diets using laser absorption spectrometry

Dr. Keith Hobson and Dr. Chris Guglielmo, Environment and Climate Change Canada and University of Western Ontario

The ratio of stable carbon isotopes differs between plant and insects, and so by measuring the isotopic ratio of carbon dioxide in bird breath it is possible to determine what types of foods they are eating. We used a "bird breathalyzer" to collect exhaled breath of a wide variety of species caught during banding at the Old Cut and analalyzed it for carbon isotopes in real time using a new completely non-invasive laser absorption spectrometer. We found found a very nice breakdown of diets among the likely frugivorous candidates (thrushes, waxwings, some warblers, vireos) compared to others that were purely insectivorous (most warblers).This year's work was experimental and future research plans are being established to study how diets differ from spring to fall migration and between juvenile and adult birds.

The hormone ghrelin: Is it a key player in regulating performance, fuel metabolism and decision-making in migratory birds?

Dr. Sara Lupi (postdoctoral fellow)

Principal Investigators: Dr. Scott MacDougall-Shackleton and Dr. Chris Guglielmo, University of Western Ontario, and Dr. Leonida Fusani, Vetmeduni Vienna, Austria

During migration, birds have the extraordinary capacity of fuelling long non-stop flights almost totally through the oxidation of fatty acids. Fat stores are accumulated before migration and replenished along the journey at favourable stopover

sites. Large evidence that the extent of fat stores is the main predictor of migratory behavior has made the study of appetite-regulating hormones extremely important in bird migration physiology. Ghrelin, a peptide that is mostly produced by the digestive tract, exerts several physiological functions in vertebrates, such as regulation of appetite and energy balance. A number of studies have shown that in domestic poultry ghrelin suppresses food intake and stimulates lipid catabolism. Yet, very little is known on the involvement of ghrelin in the physiological regulation of bird migration. A recent study in a migratory passerine has demonstrated that ghrelin has a key role in the control of migratory disposition and food intake during stopover. The aim of my (Sara Lupi) research is to investigate the role of ghrelin on fuel metabolism, flight performance and decision-making in migratory birds. I make use of the Motus Wildlife Tracking System to track large-scale migratory movements. Furthermore, I take advantage of a specialized wind tunnel (Western University, Advanced Facility for Avian Research) to simulate non-stop migratory flights under controlled environmental conditions. For my study, I chose two species of small migratory passerines, Yellow-rumped Warblers (*Setophaga coronata*) and Blackpoll Warblers (*Setophaga striata*). Both species can reliably conduct multi-hour flights in the wind tunnel. Further, their breeding and wintering distribution are comprised within the area covered by the Motus Wildlife Tracking System. Results of my research will offer novel insights into the hormonal system underlying bird migration.

Effects of experimental malaria infection on migration by Yellow-rumped Warblers

Becca Howe (MSc candidate)

Principal Investigators: Dr. Chris Guglielmo and Dr. Beth MacDougall-Shackleton, University of Western Ontario

Avian malaria is a common disease affecting most bird species. Yellow-rumped Warblers (*Setophaga coronata*) are frequently infected, and populations in Ontario can be as much as 50 % chronically infected by the parasite. Yellow-rumped Warblers also migrate between the Boreal Forest and the Southern United States, taking several stopovers to refuel along the way. Tolerating or overcoming infection has an energetic cost and is known to affect migration. However, the effects of infection at a migratory stopover have not been measured. In the fall of 2019, I (Becca Howe) captured 40 Yellow-rumped Warblers at the Bruce Peninsula Bird Observatory and transported them to the Advanced Facility for Avian Research at the University of Western Ontario. While at Western the birds were radio-tagged, blood sampled, and inoculated to simulate infection at stopover. The Motus Wildlife Tracking System was used to measure activity in the aviaries. Birds were then released at LPBO where an additional 15 birds were captured and radio-tagged. Motus was then used to measure

activity at the release site, and migratory departure from Long Point. Experimental infection and Motus will allow me to test two main predictions: 1) Infection will delay migratory departure from the stopover with a greater effect on birds that overcome infection compared to birds that tolerate infection, and 2) Infection will impact activity at the stopover by increasing activity by birds that overcome infection and decreasing activity by birds that tolerate infection.

Developmental changes in hippocampal neurogenesis in an obligate brood parasite, the Brown-headed Cowbird (*Molothrus ater*)

Antoine Turcotte-van de Rydt (MSc candidate)
Principal Investigator: Dr. Mélanie F. Guigueno, McGill University

An animal's behaviour is linked to adaptations in the brain. For instance, species that have higher spatial memory needs have more production of new neurons (neurogenesis) in the hippocampus, a region of the brain important for spatial memory. The Brown-headed Cowbird (*Molothrus ater*) is an obligate brood parasite (a species which lays its eggs in the nests of other species) where females search for potential host nests. Accordingly, females show superior cognition and higher hippocampal neurogenesis when compared to males, an unusual case of female-biased specialization. Previous research suggests only populations with high space use retain the high levels of neurogenesis that are observed in all juveniles (irrespective of their level of space use). My (Antoine Turcotte-van de Rydt) goal is to see if this difference in developmental pattern is present in cowbirds. In October-December 2019, I sampled cowbirds and Red-winged Blackbird (*Agelaius phoeniceus*), a nonparasitic relative, in the Long Point area. My prediction was that neurogenesis would be high in all juveniles, while in adulthood, only female cowbirds would have comparably high levels. This study investigates the influence of ecology and sex differences on hippocampal development, as well as the function of adult neurogenesis.

Introduction of Southern Ticks by Migratory Songbirds

John Scott, Lyme Ontario

The aim of our study is to identify ticks parasitizing migratory songbirds during northward spring migration. Specifically, we want to get 25 live ticks from several southern temperate and Neotropical passerines collected from April 15 to June 10, 2019 at the Tip of Long Point, Ontario. In order to help with identification, we will retain live, engorged ticks to molt to the next development life stage. Current taxonomic keys will be employed for *Ixodes* and *Amblyomma* species. PCR amplification

and DNA sequencing may be employed for certain ticks. Novel ticks will be catalogued in a biological museum.

Save Our Swallows Project

Brodie Badcock-Parks, Nature Canada

In Ontario, swallow roosts initiate near the end of the breeding season during late July, peaking in early- to mid-August, and lasting through to mid-September within the wetlands of river deltas and along the Great Lakes shoreline. The roosts are first identified using weather radar, and efforts are made to conduct passive field investigations in order to ground-truth and monitor the sites. Field investigations help to provide accurate estimates of how many birds are using the roost, determine species assemblage, and learn more about the dynamics and vulnerability of each site. We are using weather radar imagery to sample the extensive swallow roosts at Long Point and quantify their location, magnitude, and composition using ground surveys.

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Canada

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How You Can Help

LPBO 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 Long Point Bird Observatory: one-time donations, monthly giving plans, or a legacy gift to the LPBO Endowment Fund. You can also contribute to LPBO 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 the Tip Research Station.
$ 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 teen in one of our Young Ornithologist Workshops.
$ 2 500	Supports the training of a pupil from Latin America.
$ 5 000	Heats the Old Cut Research Station for year.

Donations can be made online (link below) or sent by cheque made out to LPBO to P.O. Box 160, 115 Front St., Port Rowan, ON, N0E 1M0. Be sure to specify LPBO 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 Dalgleish at **kdalgleish@birdscanada.org**.

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Appendix 1

LPBO's 2019 banding totals for the Old Cut, Breakwater, and the Tip research stations, plus other special research projects.

	SPRING				FALL					
Species & forms	**Old Cut**	**Breakwater**	**Tip**	**Subtotal**	**Old Cut**	**Breakwater**	**Tip**	**Subtotal**	**Other**	**Total**
Acadian Flycatcher	1	0	0	**1**	0	0	0	**0**		**1**
American Goldfinch	16	109	318	**443**	105	11	27	**143**		**586**
American Kestrel	0	0	1	**1**	0	0	0	**0**		**1**
American Redstart	95	37	37	**169**	195	130	47	**372**		**541**
American Robin	26	17	32	**75**	31	3	0	**34**		**109**
American Woodcock	0	2	1	**3**	0	0	0	**0**		**3**
American Tree Sparrow	79	0	7	**86**	19	0	0	**19**	5	**110**
Baltimore Oriole	39	89	142	**270**	9	20	0	**29**		**299**
Barn Swallow	0	1	2	**3**	0	1	0	**1**		**4**
Black-and-white Warbler	29	16	8	**53**	37	38	7	**82**		**135**
Black-billed Cuckoo	2	0	4	**6**	2	2	1	**5**		**11**
Bay-breasted Warbler	16	4	5	**25**	49	109	19	**177**		**202**
Black-capped Chickadee	28	4	5	**37**	21	6	2	**29**		**66**
Belted Kingfisher	0	0	1	**1**	1	0	3	**4**		**5**
Brown-headed Cowbird	26	68	345	**439**	93	0	2	**95**		**534**
Blue-headed Vireo	33	27	14	**74**	42	1	13	**56**		**130**
Blackburnian Warbler	11	8	15	**34**	24	33	4	**61**		**95**
Blue Jay	64	87	396	**547**	6	0	4	**10**		**557**
Blackpoll Warbler	7	22	12	**41**	75	243	270	**588**	34	**663**
Bobolink	0	0	2	**2**	0	0	0	**0**		**2**
Brown Creeper	152	9	108	**269**	61	0	69	**130**		**399**
Brown Thrasher	20	14	48	**82**	5	1	5	**11**		**93**
Brewster`s Warbler	1	0	0	**1**	0	1	0	**1**		**2**
Black-throated Blue Warbler	36	17	11	**64**	66	18	26	**110**		**174**
Black-throated Green Warbler	9	8	28	**45**	15	16	10	**41**		**86**
Blue-winged Warbler	5	7	4	**16**	1	0	0	**1**		**17**
Carolina Wren	2	0	0	**2**	7	0	1	**8**		**10**
Canada Warbler	26	5	12	**43**	17	16	4	**37**		**80**
Clay-colored Sparrow	0	1	3	**4**	0	0	0	**0**		**4**
Cedar Waxwing	2	5	19	**26**	47	7	2	**56**		**82**
Cerulean Warbler	0	0	1	**1**	0	0	0	**0**		**1**
Chipping Sparrow	7	250	160	**417**	6	5	5	**16**		**433**
Cape May Warbler	6	14	13	**33**	111	104	23	**238**		**271**
Common Grackle	154	23	83	**260**	18	2	0	**20**		**280**

Connecticut Warbler	0	0	0	**0**	2	3	5	**10**		**10**
Common Yellowthroat	63	64	64	**191**	67	42	21	**130**		**321**
Chestnut-sided Warbler	53	20	42	**115**	48	23	16	**87**		**202**
Downy Woodpecker	3	6	9	**18**	7	4	5	**16**		**34**
Eastern Bluebird	0	2	2	**4**	0	0	0	**0**		**4**
Eastern Kingbird	3	6	14	**23**	3	2	0	**5**		**28**
Eastern Meadowlark	0	0	1	**1**	0	0	1	**1**		**2**
Eastern Phoebe	33	2	12	**47**	41	0	38	**79**		**126**
Eastern Screeh-Owl	0	0	0	**0**	1	1	1	**3**		**3**
Eastern Towhee	7	5	26	**38**	6	0	1	**7**		**45**
Eastern Wood-Pewee	16	3	23	**42**	26	25	12	**63**		**105**
Eurasian Tree Sparrow	0	0	1	**1**	0	0	0	**0**		**1**
European Starling	3	5	15	**23**	5	0	3	**8**		**31**
Eastern White-crowned Sparrow	27	93	111	**231**	2	0	5	**7**		**238**
Eastern Whip-Poor-Will	1	0	0	**1**	0	0	1	**1**		**2**
Field Sparrow	5	29	31	**65**	6	4	2	**12**		**77**
Fox Sparrow	8	0	6	**14**	18	0	1	**19**		**33**
Great Crested Flycatcher	3	0	0	**3**	8	3	0	**11**		**14**
Golden-crowned Kinglet	219	18	118	**355**	256	0	92	**348**		**703**
Grey-cheeked Thrush	3	1	4	**8**	43	12	13	**68**		**76**
Grey Catbird	114	93	52	**259**	86	17	6	**109**		**368**
Green Heron	0	0	0	**0**	0	1	1	**2**		**2**
Grasshopper Sparrow	0	0	2	**2**	0	0	0	**0**		**2**
Gamble's White-crowned Sparrow	2	0	2	**4**	0	0	0	**0**		**4**
Golden-winged Warbler	1	0	2	**3**	0	0	0	**0**		**3**
Hairy Woodpecker	0	1	0	**1**	0	0	0	**0**		**1**
Hermit Thrush	114	29	23	**166**	166	0	38	**204**		**370**
House Finch	1	0	0	**1**	6	0	0	**6**		**7**
House Sparrow	19	0	2	**21**	71	0	5	**76**		**97**
Hooded Warbler	2	0	1	**3**	2	2	0	**4**		**7**
House Wren	47	39	25	**111**	77	45	20	**142**		**253**
Indigo Bunting	3	20	31	**54**	4	12	1	**17**		**71**
Kentucky Warbler	1	0	0	**1**	0	0	0	**0**		**1**
Killdeer	0	0	1	**1**	0	0	0	**0**		**1**
Least Bittern	1	0	0	**1**	0	0	1	**1**		**2**
Least Flycatcher	57	44	117	**218**	47	63	42	**152**		**370**
Lincoln's Sparrow	27	23	84	**134**	7	0	3	**10**		**144**
Louisiana Waterthrush	0	1	0	**1**	0	0	0	**0**		**1**
Magnolia Warbler	185	60	125	**370**	197	156	35	**388**		**758**
Marsh Wren	0	0	0	**0**	24	0	2	**26**		**26**
Merlin	0	0	2	**2**	0	0	0	**0**		**2**
Mourning Dove	4	1	8	**13**	8	0	0	**8**		**21**
Mourning Warbler	11	5	7	**23**	6	2	1	**9**		**32**
Myrtle Warbler	58	82	63	**203**	178	2	121	**301**		**504**
Nashville Warbler	9	73	53	**135**	137	34	4	**175**		**310**
Nelson`s Sparrow	0	0	1	**1**	0	0	0	**0**		**1**
Northern Cardinal	22	11	22	**55**	31	0	0	**31**		**86**

Northern Mockingbird	0	0	0	**0**	0	0	1	**1**		**1**
Northern Parula	10	21	3	**34**	30	10	2	**42**		**76**
Northern Waterthrush	14	37	12	**63**	35	35	7	**77**		**140**
Northern Rough-winged Swallow	1	6	1	**8**	0	0	0	**0**		**8**
Northern Saw-whet Owl	0	0	0	**0**	72	0	13	**85**		**85**
Orange-crowned Warbler	0	1	4	**5**	4	0	0	**4**		**9**
Orchard Oriole	0	7	18	**25**	0	0	0	**0**		**25**
Olive-sided Flycatcher	0	0	0	**0**	2	1	0	**3**		**3**
Ovenbird	63	27	7	**97**	38	15	6	**59**		**156**
Philadelphia Vireo	27	7	14	**48**	21	2	2	**25**		**73**
Pine Siskin	8	1	5	**14**	0	0	0	**0**		**14**
Pine Warbler	0	7	3	**10**	0	1	1	**2**		**12**
Prothonotary Warbler	0	1	0	**1**	0	0	0	**0**		**1**
Purple Finch	4	17	49	**70**	0	0	0	**0**		**70**
Purple Martin	0	0	0	**0**	1	0	8	**9**		**9**
Rose-breasted Grosbeak	30	91	71	**192**	19	6	2	**27**		**219**
Ring-billed Gull	0	0	1	**1**	0	0	0	**0**		**1**
Red-breasted Nuthatch	79	142	249	**470**	0	0	0	**0**		**470**
Red-bellied Woodpecker	4	13	29	**46**	2	0	0	**2**		**48**
Ruby-crowned Kinglet	302	274	162	**738**	708	1	128	**837**		**1575**
Red-eyed Vireo	50	19	65	**134**	115	63	19	**197**		**331**
Red-headed Woodpecker	0	1	13	**14**	0	0	1	**1**		**15**
Rusty Blackbird	1	3	2	**6**	8	0	0	**8**		**14**
Red-winged Blackbird	263	117	312	**692**	28	34	21	**83**		**775**
Sanderling	0	0	0	**0**	0	0	4	**4**		**4**
Savannah Sparrow	0	1	27	**28**	0	0	2	**2**		**30**
Semipalmated Plover	0	0	0	**0**	0	0	3	**3**		**3**
Slate-coloured Junco	63	32	328	**423**	124	0	31	**155**		**578**
Scarlet Tanager	3	23	7	**33**	1	2	0	**3**		**36**
Song Sparrow	46	29	112	**187**	86	3	40	**129**		**316**
Spotted Sandpiper	0	0	1	**1**	0	0	1	**1**		**2**
Sharp-shinned Hawk	0	0	0	**0**	5	0	14	**19**		**19**
Summer Tanager	0	0	1	**1**	0	0	0	**0**		**1**
Swamp Sparrow	81	43	45	**169**	80	0	11	**91**		**260**
Swainson's Thrush	68	9	13	**90**	110	54	42	**206**		**296**
Tennessee Warbler	19	21	30	**70**	48	70	7	**125**		**195**
Tree Swallow	14	5	3	**22**	0	6	0	**6**	681	**709**
Traill's Flycatcher	34	9	40	**83**	36	33	11	**80**		**163**
Veery	28	7	4	**39**	16	16	4	**36**		**75**
Vesper Sparrow	0	2	1	**3**	0	0	0	**0**		**3**
Virginia Rail	1	0	0	**1**	0	0	0	**0**		**1**
Warbling Vireo	11	22	21	**54**	88	51	2	**141**		**195**
White-breasted Nuthatch	5	3	3	**11**	1	2	0	**3**		**14**
White-crowned Sparrow	2	0	0	**2**	8	0	4	**12**		**14**
Western Meadowlark	0	0	1	**1**	0	0	0	**0**		**1**
White-eyed Vireo	4	1	0	**5**	2	0	0	**2**		**7**
Worm-eating Warbler	0	1	0	**1**	0	0	0	**0**		**1**
Wilson's Warbler	31	11	24	**66**	33	38	2	**73**		**139**

Winter Wren	11	7	4	**22**	40	0	31	**71**		**93**
Wood Thrush	14	7	2	**23**	4	0	0	**4**		**27**
Western Palm Warbler	21	48	31	**100**	35	9	22	**66**		**166**
White-throated Sparrow	538	151	315	**1004**	300	0	66	**366**		**1370**
White-winged Dove	0	0	1	**1**	0	0	0	**0**		**1**
Yellow-breasted Chat	0	1	0	**1**	0	0	1	**1**		**2**
Yellow-billed Cuckoo	0	1	2	**3**	0	0	0	**0**		**3**
Yellow-bellied Flycatcher	54	5	22	**81**	56	21	17	**94**		**175**
Yellow-bellied Sapsucker	2	0	8	**10**	2	0	2	**4**		**14**
Yellow Warbler	56	121	128	**305**	105	213	6	**324**		**629**
Yellow-headed Blackbird	1	1	0	**2**	0	0	0	**0**		**2**
Yellow Palm Warbler	0	0	0	**0**	1	0	0	**1**		**1**
Yellow-shafted Flicker	2	6	12	**20**	2	0	2	**4**		**24**
Yellow-throated Vireo	1	3	0	**4**	0	1	0	**1**		**5**
Total	3,983	2,942	5,145	**12,070**	4,915	1,907	1,577	**8,399**	720	**21,189**

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