Ontario Owl Survey Newsletter
April 2020

Inside…

2020 Marks our 26th Ontario Owl Survey Season! – *COVID-19 Limited Edition*

All the staff of Birds Canada want to extend our heartfelt thank you to everyone. We ask that you continue to bird at home and report your backyard birds to eBird.ca taking into consideration their Guidelines for Sensitive Species. Please take comfort in the fact that the 25-year owl dataset is long term and robust – one single year of missed data collection will not affect our analyses. New for 2020, we are working on plans for a potential national owl analysis instead of the typical annual Ontario trends that we provide each spring (page 9). Here are some clarifications as to why our outdoor work decisions were made, what they mean, and how we plan to react moving forward birdscanada.org/some-frequently-asked-questions-about-surveys-and-field-work-during-covid-19-2/.

The 2019 Survey Summary

Effort for the 2019 Ontario Owl Survey remained similar to 2018 with 207 routes completed across Ontario (Fig. 1, Fig. 2). Completed northern Ontario surveys decreased to 83 and central Ontario surveys increased to 124. When we looked at the compiled data, the overall number of owls reported was down from 2018, with 782 owls of eight species recorded. Northern Ontario routes had slightly more owls in 2019 than during the 2018 survey, with the average number of owls recorded per route increasing to 2.61 (1.99/route during 2018) (Table 1). However, in central Ontario, the number of owls decreased while the number of routes increased which meant the 2019 average number of owls per route in central Ontario declined to 4.76 owls per route as compared to 4.95/route in 2018.

Overall, there is considerable annual variation in the route occupancy trends for many owl species in northern and central Ontario between 1995 and 2019, as shown in Fig. 3. In northern Ontario

Barred and Great Gray owls continue to be stable with no significant trends in the proportion of stops occupied per route. By contrast, Boreal Owl (-5.3%) shows a significant decline markedly greater than previously seen while Great Horned Owls (-1.1%) and Northern Saw-whet Owls (-0.7%) show smaller but still statistically significant declines (Fig 4).

In central Ontario the data show that Barred Owls increased by 1.9% per year between 1995 and 2019, a smaller increase than seen in 2018 (-2.3%). Central Ontario's Great Horned Owls (5.4%) and Northern Saw-Whet owls (5.1%) decreased significantly from -4.4% and -3.7%, respectively, in 2018 (Fig. 4). Game bird species, including American Woodcock, Ruffed Grouse and Wilson's Snipe, continue to show a large amount of year-to-year variation with no obvious patterns over time (Fig. 5).

A big "***thank-you***" to the dedicated Owl Survey Participants, volunteers who travel Ontario's remote roads to collect important data and rearrange their schedules to match road conditions and weather patterns. Thanks also to the Ontario Ministry of Natural Resources and Forestry for its continued support and to Birds Canada's Dr. Danielle Ethier for the 2019 data analysis.

Kathy Jones, Volunteer Manager, Ontario Program

2019 Owl Results

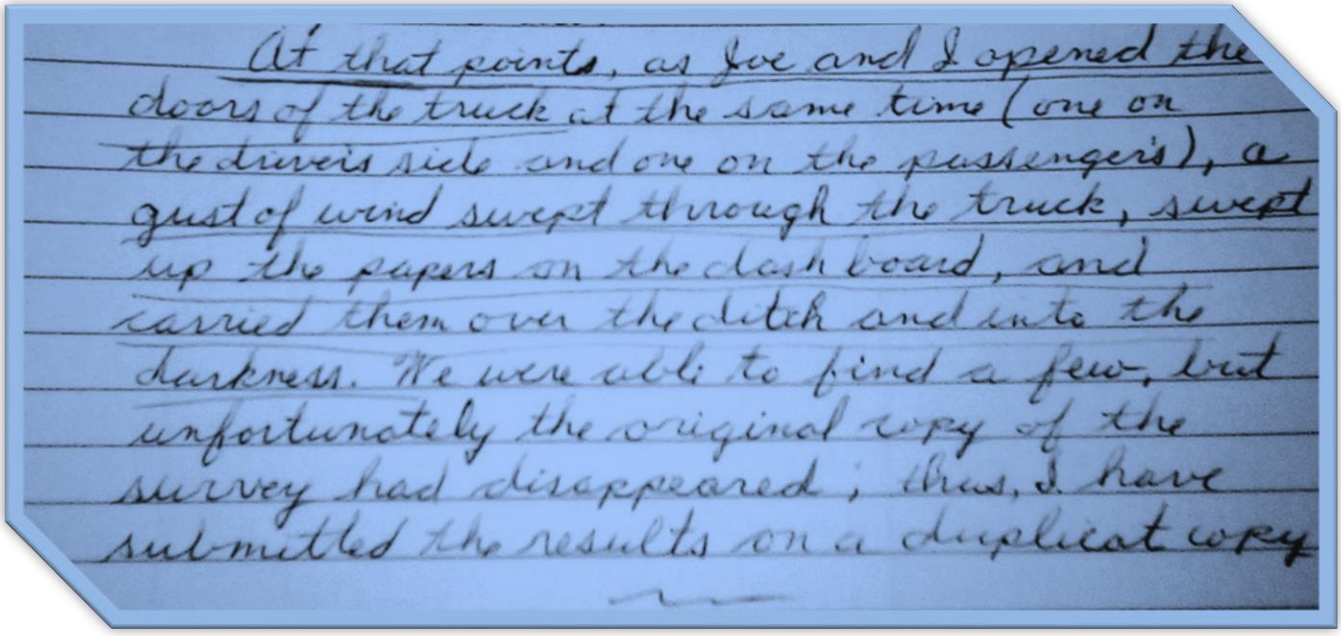
Table 1 shows the total number of individuals of each species detected, and the average number of owls detected per route for each species, as detected during the 2019 Ontario Owl Survey in central and northern Ontario.

Table 1. 2019 Ontario Owl Survey Results

Region	**Central Ontario (n=121)**		**Northern Ontario (N=79)**	
Species	Individuals*	Owls/Route	Individuals*	Owls/Route
Barred Owl	508	4.20	30	0.38
Boreal Owl	9	0.07	29	0.37
Eastern Screech Owl	5	0.04	0	0.0
Great Gray Owl	0	0.00	18	0.23
Great Horned Owl	10	0.08	39	0.49
Long-eared Owl	9	0.07	10	0.13
Northern Hawk Owl	0	0.0	0	0.0
Northern Saw-Whet Owl	23	0.19	72	0.91
Short-eared Owl	2	0.02	0	0.0
Unknown Owl	10	0.08	8	0.10
Total Owls	576	4.76	206	2.61
Additional Species				
Ruffed Grouse	16	0.13	56	0.71
Wilson's Snipe	42	0.35	20	0.25
American Woodcock	44	0.36	32	0.41

*based on compiled data with duplicate owls removed.

Survey tip from Henry and Joe: Don't open all your doors at the same time!


At that point, as Joe and I opened the doors of the truck at the same time (one on the driver's side and one on the passenger's), a gust of wind swept through the truck, swept up the papers on the dashboard, and carried them over the ditch and into the darkness. We were able to find a few, but unfortunately the original copy of the survey had disappeared; thus, I have submitted the results on a duplicat copy

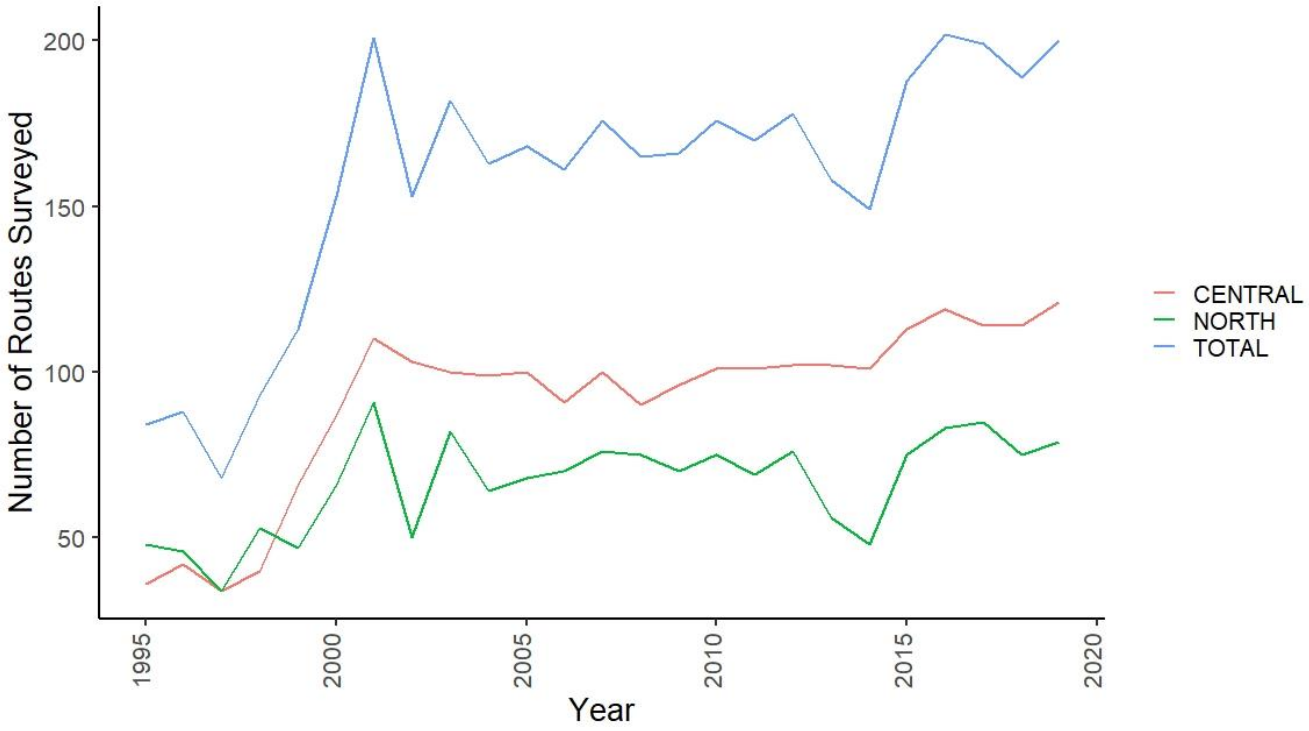
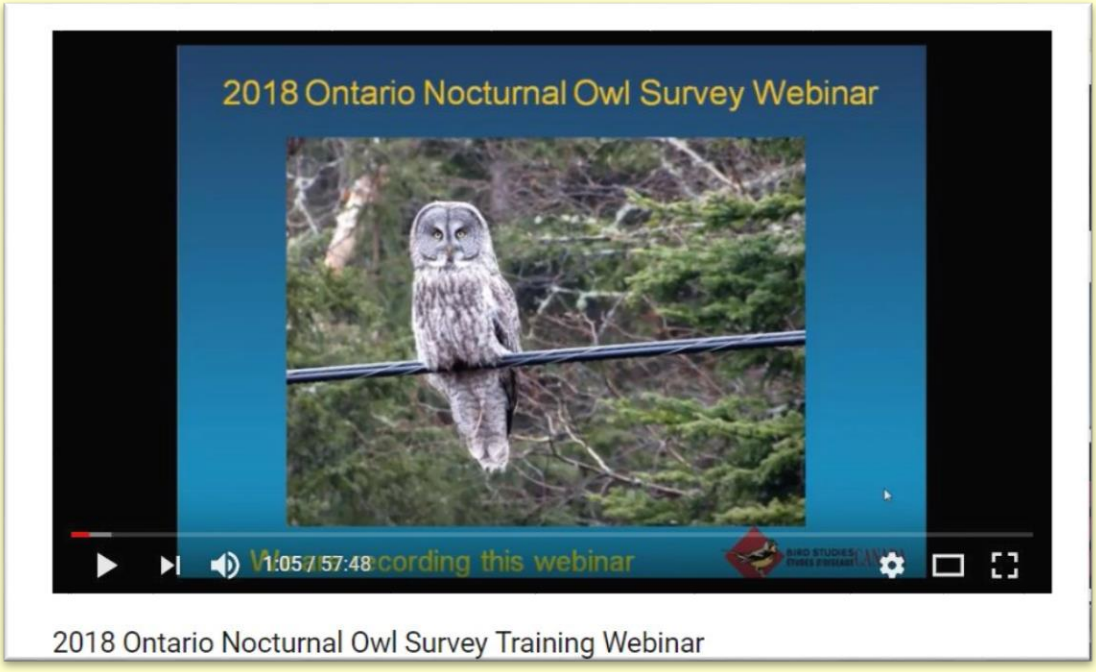


Figure 1: Number of Ontario Owl Survey routes sampled per year between 1995 and 2019 as a function of region (central, north) and combined (both).

Want to learn more about surveying?

Listen to the 2018 Owl Survey Webinar on the Bird Studies Canada YouTube page https://t.co/utVWY29WsB



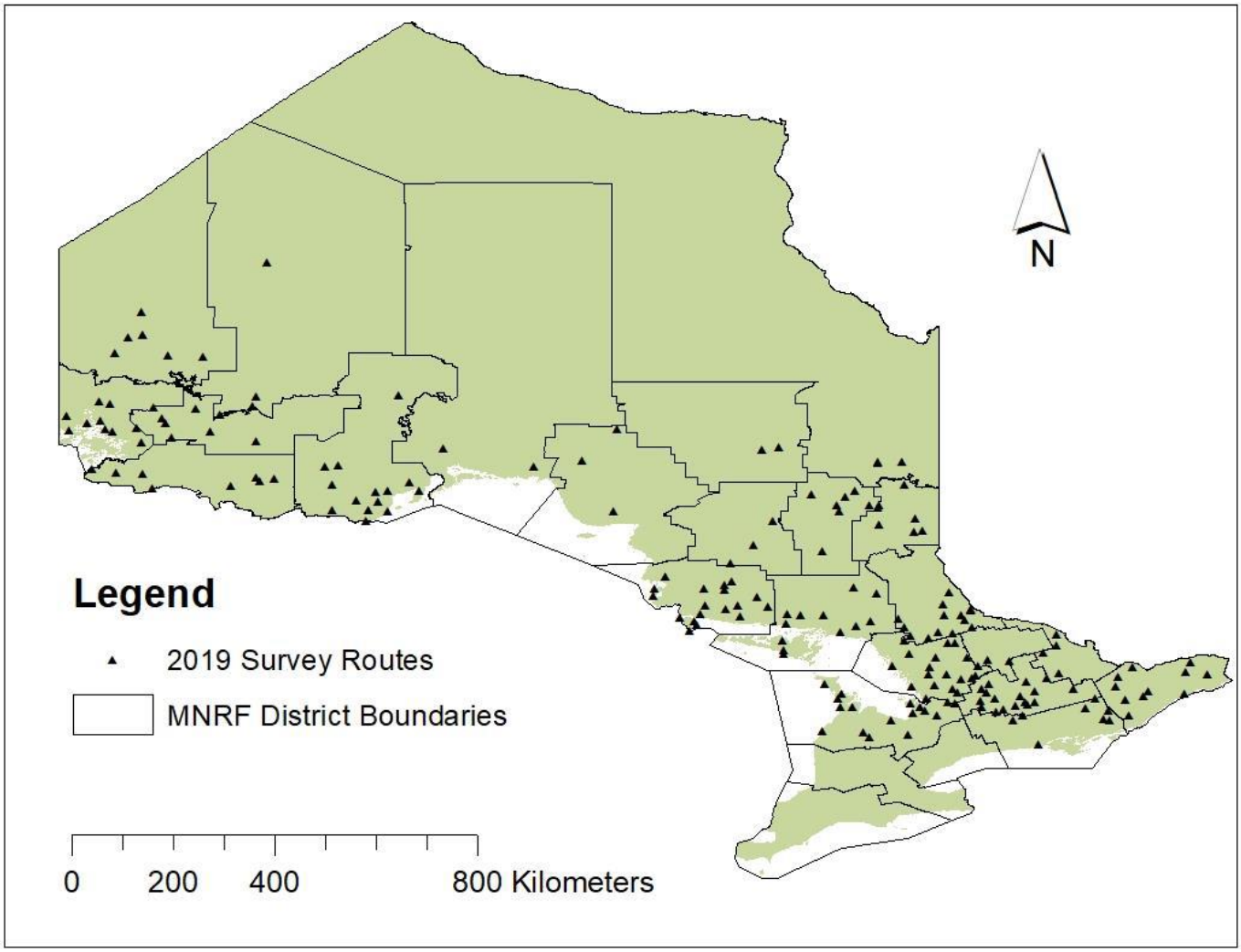


Figure 2: Ontario Owl Survey routes sampled in 2019 (*n* = 200 routes).

Paul's Owl Survey Field note from attempt #2 after attempt #1 failed:
"The weather was dead calm, clear, just above freezing with an almost full moon & moon shadows. At stop 6 a BDOW flew out calling & landed in a tree (be)s the truck & I heard my 1st NSWO at stop 10. I'm glad I could redo it!"

"Had our best owl survey ever on April 20th. 7 owls! 3 Barred and a record 4 Great Grays! Above zero temps but still 3 feet of snow! It was great!" Tammie Hache

See all of last year's moments: https://twitter.com/i/events/1115616597425762309

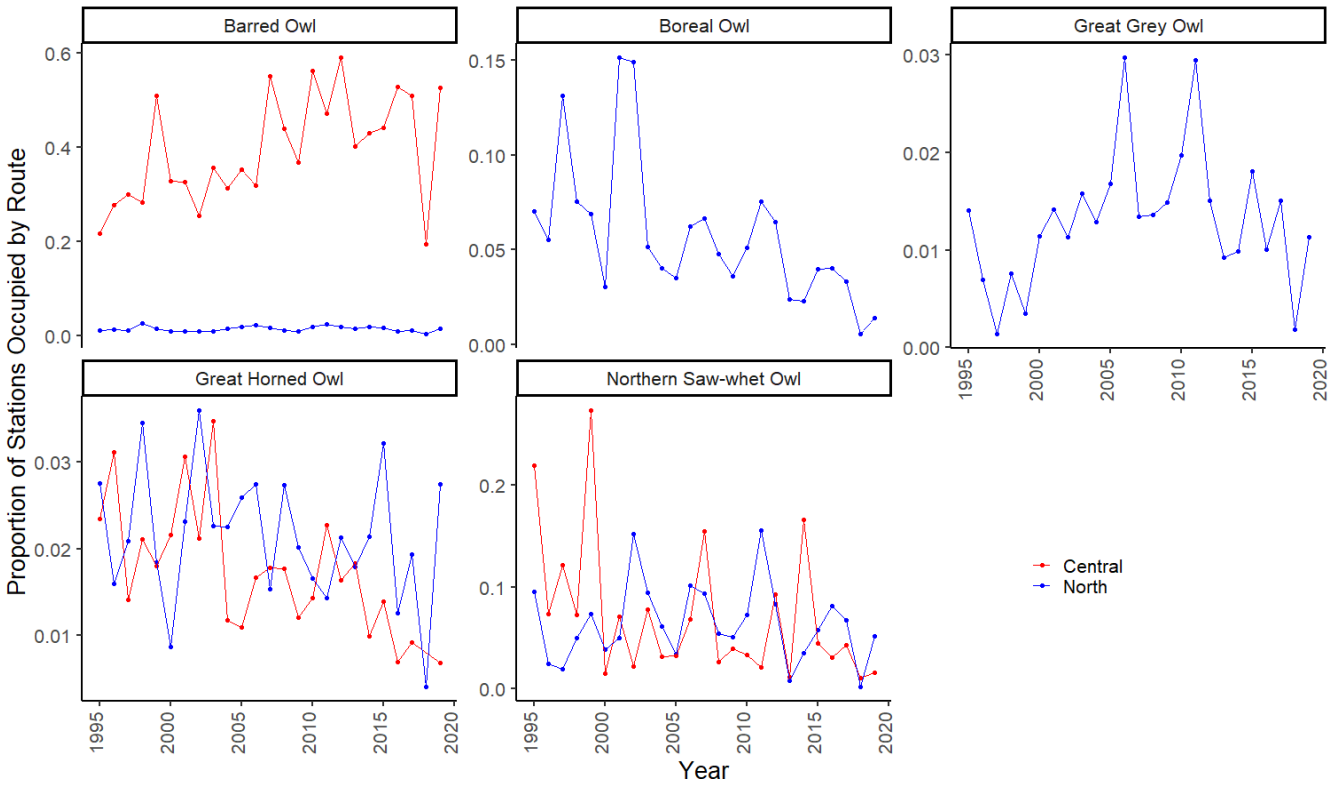
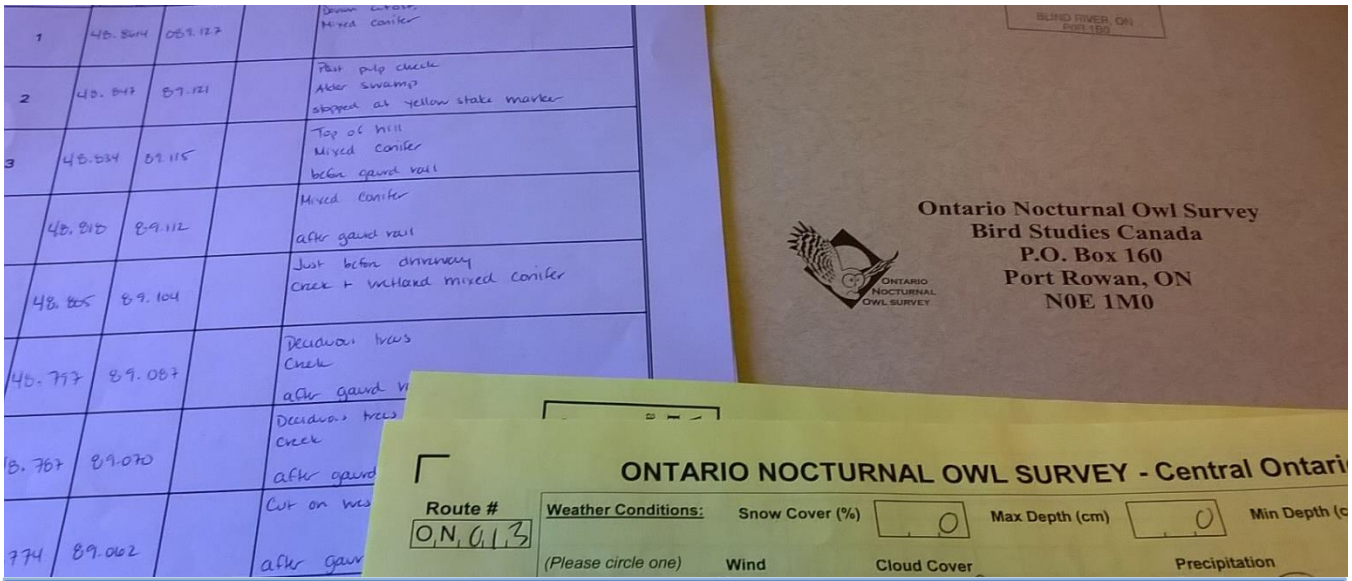


Figure 3: Ontario Owl Survey Trends, 1995-2019, showing the mean proportion of stations occupied (with owls) per route in central and northern Ontario.



Spring peepers were somewhat vocal, but I think the -1 degree temperature cooled their romantic intentions. On that note, I think we interrupted one human romantic liaison. Not sure if they enjoyed the owl vocalizations, but at least they didn't squeal out of there until the monitoring period ended. Don F

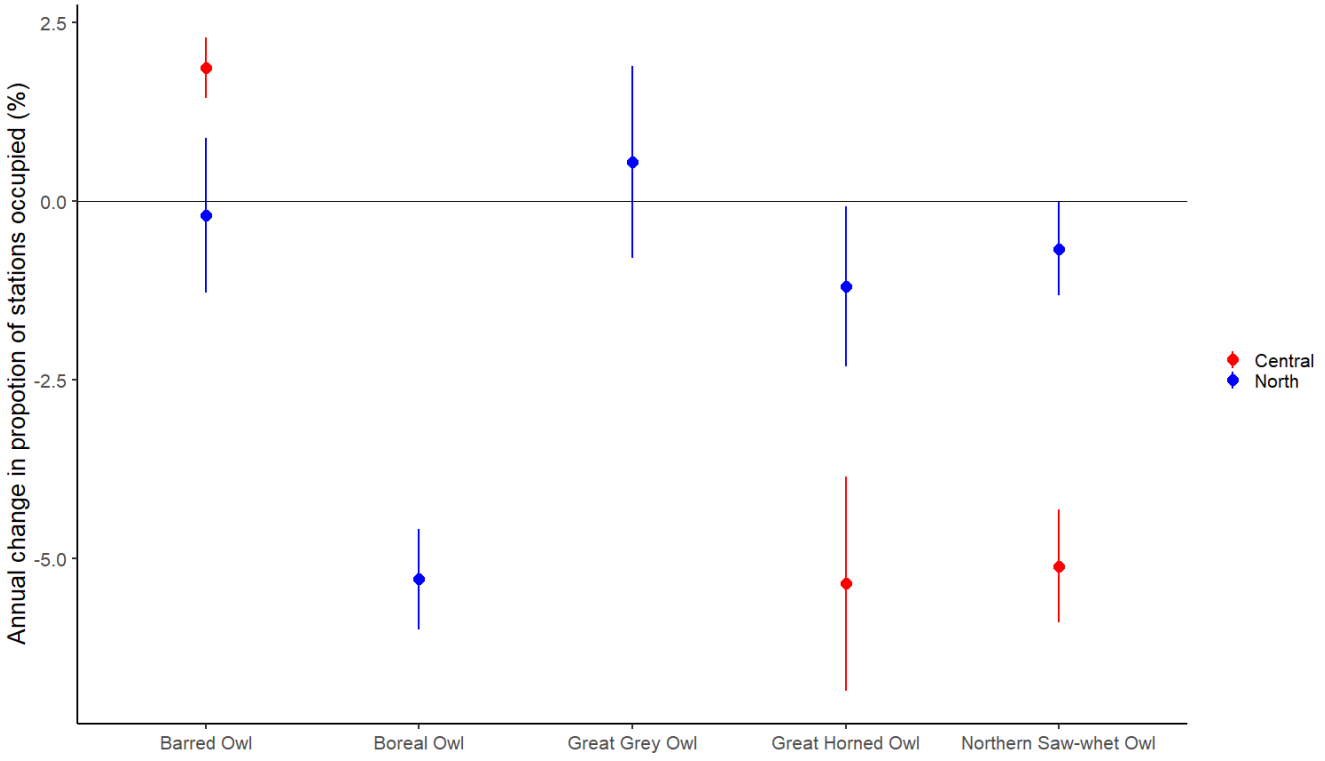


Figure 4: Trends in number of survey stations occupied by owls between 1995 and 2019 in northern (blue) and central (red) Ontario, based on data collected by the Ontario Nocturnal Owl Survey. Vertical lines are 95% confidence intervals. Statistically significant trends do not have confidence intervals overlapping the horizontal line at zero.

2019 Additional Species

The numbers of "non-owl" target species were considerably less than seen during the past 3 years with 62 Wilson's Snipe (178 in 2018, 175 in 2017; 213 in 2016), 72 Ruffed Grouse (143 in 2018, 81 in 2017, 227 in 2016) and 76 American Woodcock (277 in 2018, 509 in 2017, 533 in 2016). These numbers portray the great fluctuation in the presence and number of these species at the time of the owl survey.

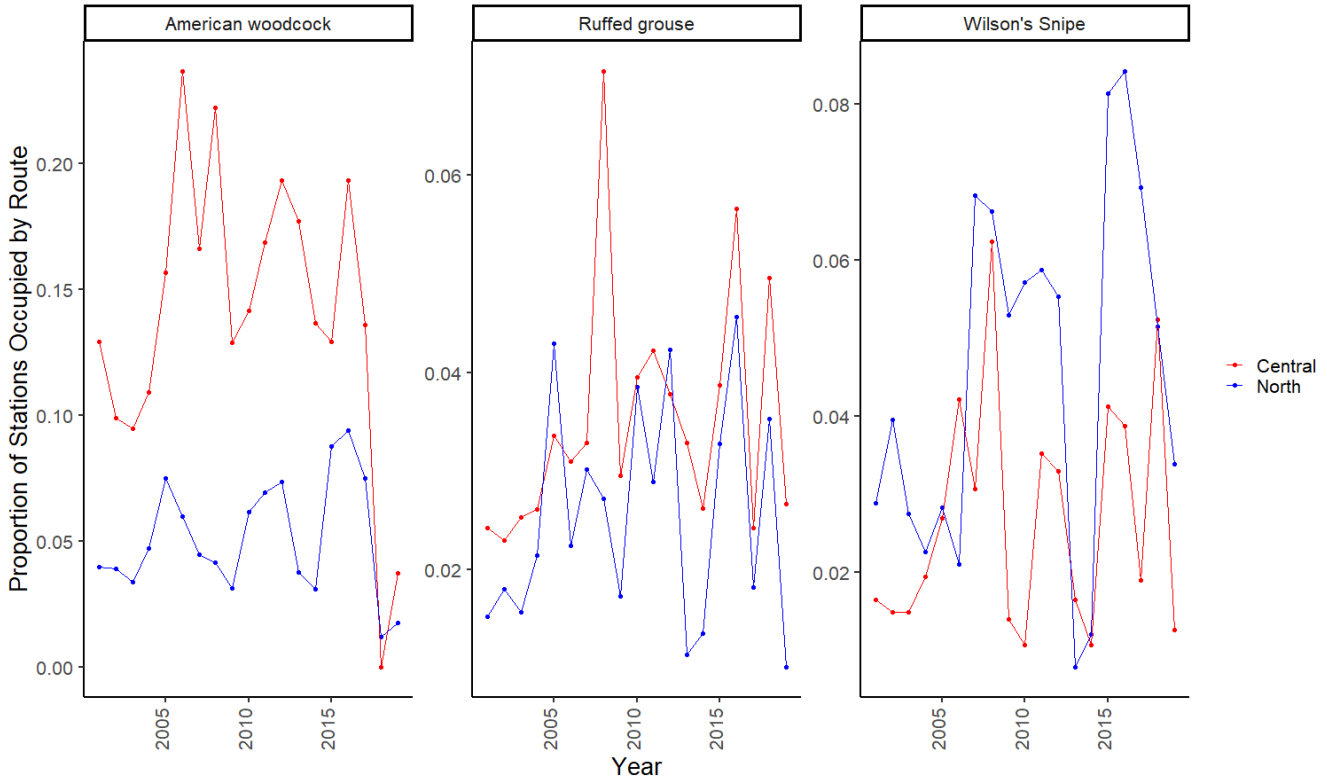
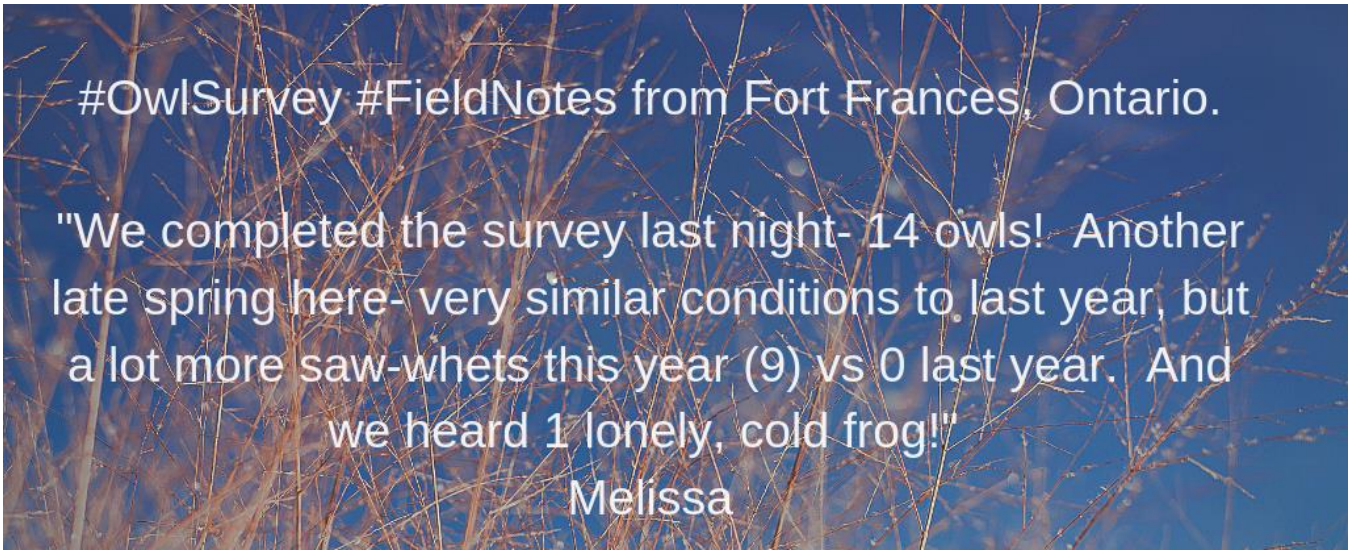


Figure 5: Trends for Ruffed Grouse, American Woodcock and Wilson's Snipe, 2001-2019, showing the mean proportion of stations occupied per route in central and northern Ontario.



The Science Report:

Research Ambitions by Dr. Danielle Ethier

These unique times are limiting our outdoor adventures and ability to collect new data. However, being deskbound gives researchers a wonderful opportunity to work with existing long-term datasets, such as the Ontario Nocturnal Owls Survey data, to unravel patterns in abundance and distribution of species over time. Researchers at Birds Canada, and external partners, are exploring opportunities to broaden the Ontario owl's analysis to better understand how species are selecting breeding habitat and responding to habitat and environmental changes in order to identify critical areas for protection. Additionally, we are interested in using the Ontario dataset as part of a national initiative to determine how owl populations have change through time across Canada. The long-term commitment of volunteers like you make this research possible! We also want to reassure our volunteers that a missing year of data due to this year's travel restrictions does not affect our ability to use these data for research.

Research Highlight: The Ontario Owl Survey supports OMNRF Fisher research

By Dr. Danielle Ethier

Research lead by Janet Greenhorn, with the Ministry of Natural Resources and Forestry, and coauthors, including myself, used the Ontario Nocturnal Owl Survey dataset to look for correlations between fisher harvest age-ratios and the productivity of the northern saw-whet owl, to determine if this easily monitored species is an appropriate indicator of fisher abundance for use in harvest allocation. Results suggest that a mountain ash berry crop production will lead to abundant red-backed voles the following year and consequently increased northern saw-whet owl abundance. In turn, the next year will see a larger proportion of juvenile fishers in the harvest (Figure 6). The process is linked across 3 trophic levels and is played out over 3 years! Knowledge of northern saw-whet owl abundance, combined with in-year information on fisher population growth, may be a preferable basis for estimating sustainable fisher harvest levels, and may be less likely to lead to unintentional overharvest (*manuscript in review with Wildlife Biology*).

Fisher, Christian Artuso

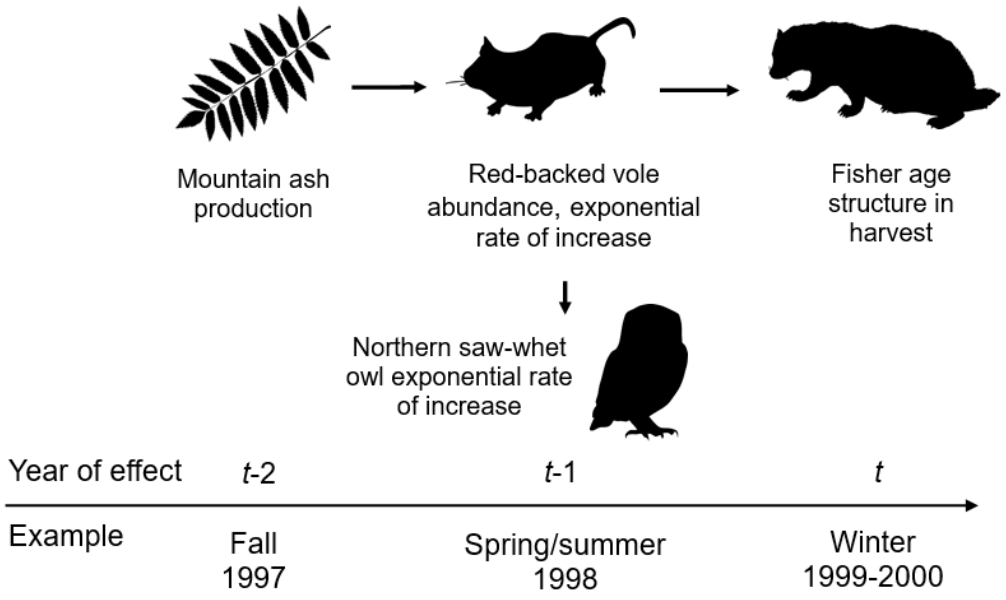


Figure 6: Trophic effects in a Great Lakes-St. Lawrence East forest community including mountain ash production, red-back vole abundance and exponential rate of increase, northern saw-whet owl exponential rate of increase, and fisher age structure in the harvest. Images provided by Janet Greenhorn and Dr. Danielle Ethier.

Research sampling: For your interest here is a selection of informative owl research papers that were published in the last year.

Clement, M. A., K. Barrett, and R. F. Baldwin. 2019. Key habitat features facilitate the presence of Barred Owls in developed landscapes. *Avian Conservation and Ecology* 14(2):12. https://doi.org/10.5751/ACE-01427-140212

Domahidi, Z., J. Shonfield, S. E. Nielsen, J. R. Spence, and E. M. Bayne. 2019. Spatial distribution of the Boreal Owl and Northern Saw-whet Owl in the Boreal region of Alberta, Canada. *Avian Conservation and Ecology* 14(2):14. https://doi.org/10.5751/ACE-01445-140214

Kropacheva, Y.E., Smirnov, N.G., Zykov, S.V. *et al.* 2019. The Diet of the Great Gray Owl, *Strix nebulosa*, at Different Levels of Prey Abundance during the Nesting Season. *Russ J Ecol* **50,** 43–49 (2019). https://doi.org/10.1134/S1067413619010041

Kyle A Lima, Erynn M Call, Thomas P Hodgman, David S Potter, Susan Gallo, Erik J Blomberg, Environmental conditions and call-broadcast influence detection of eastern forest owls during standardized surveys, *The Condor*, , duaa016, https://doi.org/10.1093/condor/duaa016

Matt D. Larson, Jessica C. Larson, Denver W. Holt, Steve Gniadek, and Adam Eckert "The Northern Hawk Owl in Montana: A Summary of Breeding Biology, Diet, Habitat Association, and Records (1994–2015)," Journal of Raptor Research 53(1), 66-74, (25 February 2019). https://doi.org/10.3356/JRR-17-87

Owl observation tips for birders (reprinted from BirdWatch Canada)

If you're not involved in owl research, you can still help owls! An important thing we can all do is respect owls and encourage others to do the same:

- Watch or photograph quietly and from a distance. Do not try to draw the owl closer.
- Move on after a few minutes, especially if the owl seems to be aware of you.
- If the owl flies away, do not follow it.
- To avoid drawing a crowd, use discretion if you share information about your observation. If you submit it to eBird.ca, review the guidelines for sensitive species.
- Enjoy! Where owls find safe places, we can continue to have these unforgettable encounters.

Barred Owl, Lorne Punshun

The People Report:

Nocturnal Owl Survey provides hands-on experience for students

By Ellen Jakubowski (reprinted from BirdWatch Canada)

Owls are top predators, and monitoring them provides insights on the health of their populations and the environment. Given that Canada is home to 16 species of owls and represents an important part of the breeding range for many of these, Canadians play a key role in tracking their population trends.

College Boréal Students, Sudbury, Ontario

Citizen Scientists contribute to this by participating in Nocturnal Owl Surveys across the country. These surveys are conducted in late winter or early spring, after the sun goes down, and are designed to capture data on these unique birds that other surveys may miss. Over 1200 people take part. Some are educators who not only contribute data, but also use the survey as a training opportunity for students.

Dr. Andre Ferron is just one example. He is a biologist and professor at Collège Boréal and has been involving his wildlife management students in the survey since 2014. Each year, new teams of students survey two to three routes southwest of Sudbury, in central Ontario.

"The owl surveys provide hands-on field experience to the students," says Andre. *"Throughout the course, I put a lot of emphasis on bird identification using songs. The owl surveys give an opportunity for the students to learn how to put in practice what they have learned in class, how to follow a bird field sampling protocol, and how to best collect data in the field – skills that are essential for any wildlife technician."*

Andre has a fascination with birds of prey. He finds they captivate the students as well: *"With the owl surveys, they realize they can actually hear the owls and often see them close in their natural environment. The time spent at night in the forest in complete silence is also a special moment for the students."*

A big thank-you to Andre and his students, and to all owl survey participants who are using Birds Canada's citizen science programs to teach our future environmental advocates.

Great Horned Owl, Graham Sorenson

Raymonde Bourgeois

My dad really enjoyed himself.

Kind of mind blowing for him when we heard an owl call back!

Connie Hergott – Muskokas


Beau Daniels
@JBeauDaniels
@bsc #owlsurvey #fieldnote Great evening for our first time doing the survey. We recorded lots of owls and woodcocks and got to explore the Bruce peninsula a little.

Try the newly refreshed Website portal!

Visit www.birdscanada.org/on_owls for all your owling needs.

If you are interested in participating: review the map, the volunteer position description and then complete the "**Request a Survey Route**" form.

If you are a current volunteer: use **birdscanada.org/on_owl** as your "one stop shop" that gives you access to the:

- ✓ **Newsletter**
- ✓ **Survey Availability Map**
- ✓ **Data forms**
- ✓ **Protocols**
- ✓ **Request a Route form**
- ✓ **Volunteer Portal**

Use the "**Volunteer Portal**", to **sign up/sign in** to the secure NatureCounts website for:

- ✓ **Past Newsletters**
- ✓ **Data submission**
- ✓ **Training CD MP3 files**
- ✓ **Stop coordinates**
- ✓ **MP3 broadcast files**
- ✓ **Owl survey vehicle sign**
- ✓ **Owl surveyor in action cards** (to hand out to concerned citizens)

Birds Canada is on Facebook, Twitter and Instagram and I (Kathy Jones) am on Facebook and Twitter. **For 2020 we would LOVE to hear and see photos about your #backyardbirding and #naturemoments.** Perhaps shave your favourite bird or your favourite owl survey memory from a past survey. Tag us or use the hashtag: #owlsurvey so we can find and share your story or just email it directly to volunteer@birdscanada.org .

Thanks to our volunteers and sponsors!

We heartily thank the volunteers, who have become far too numerous to mention by name, for their participation in the 1995-2019 surveys. These people generously donated their valuable time and equipment (broadcast systems, vehicles, flashlights, etc.) to venture forth on cold, dark nights to survey owls. They are making essential contributions to owl conservation across Ontario. We would also like to thank the Ontario Ministry of Natural Resources and Forestry – Provincial Wildlife Monitoring Program for their support of this program, and our local Wiggan's Foodland in Port Rowan who supplied our volunteers with much appreciated hot chocolate.

Kathy Jones, volunteer@birdscanada.org; twitter: @Volunteer4Birds;
www.facebook.com/Volunteer4Birds; https://www.instagram.com/volunteer4birds

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Please donate and help Birds Canada support critical efforts to keep our common birds common while taking direct action to conserve at-risk species.