

ATLANTIC NOCTURNAL OWL SURVEY 2021

A Program of:



BIRDS CANADA OISEAUX CANADA

Owl Trends	2
NSWO Research	3
20-Year Publication	4
Note from the Field	5
Thanks & Contacts	6

A big **THANK-YOU** to everyone, whether you managed to run your route or not, for hanging with us through the bumps and curves of the past two years. We appreciate all of your efforts for the owl survey, especially if you had your meticulous, pandemic-safe owl survey plans foiled by a change in restrictions. Amazingly, we had enough volunteers able to do their routes in 2021 to be able to add data points on our long-term plots. As always, we encourage you to submit data for any year of the program, including 2021, if you haven't done so yet.

Although data collection hasn't been as strong as usual in the past two years, we have made excellent progress in analyzing and publishing the 20-year dataset that was collected by YOU, our volunteer Citizen Scientists. It has been extremely exciting to publish a scientific paper about owl population trends in the Maritimes, and contribute to another scientific paper about Northern Saw-whet Owl migration! Read more details about these important contributions in the later pages of this newsletter.

Another recent change that requires attention is that Birds Canada Atlantic has a **new mailing address**. If you mail your data sheets to us, please be sure to use the following address: **P.O. Box 6436 Stn. Main Sackville, NB E4L 1G6**

Alternatively, you can email scans or photos of your datasheets to the Owl Survey Coordinator for your province (see Contacts on Page 6), or you can enter your own data through the [NatureCounts portal](#). It is very helpful to us when volunteers enter their own data and we want you to know your efforts are appreciated!

Finally, we would like to give a shout-out to the unsung heroes of the Nocturnal Owl Survey – the assistants! This newsletter only goes out to the volunteer whose name is assigned to the route, so we rely on those receiving it to share it with the many dedicated owl surveyors who are not acknowledged by name. We appreciate your efforts and your important role in making the survey happen safely!

Amy-Lee Kouwenberg & Catherine Dale, Atlantic Nocturnal Owl Survey Coordinators



Long time owl surveyor, Donna Crossland, became an "owl mother" on Mother's Day last year! She saved these little Barred Owlets after the tree they were in was cut down. Hope for Wildlife raised the owlets and Donna helped release the young owls back into the wild!



ATLANTIC OWL SURVEY TRENDS (2001-2021)

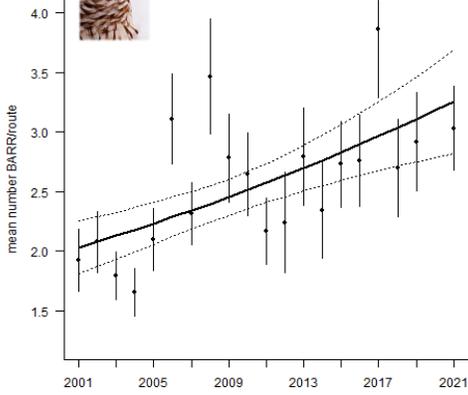
NB

NS

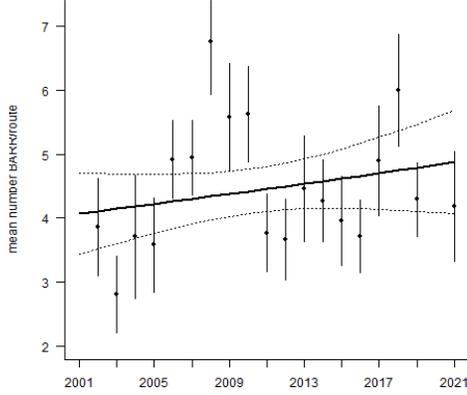
PEI



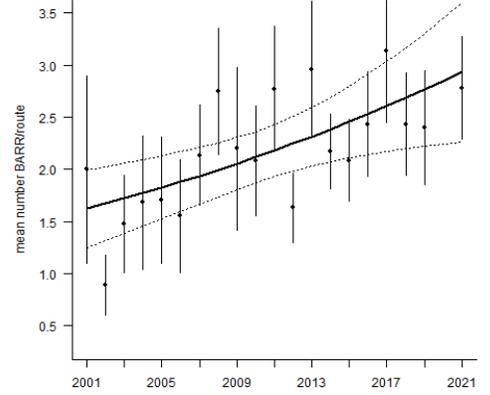
Barred Owl NB



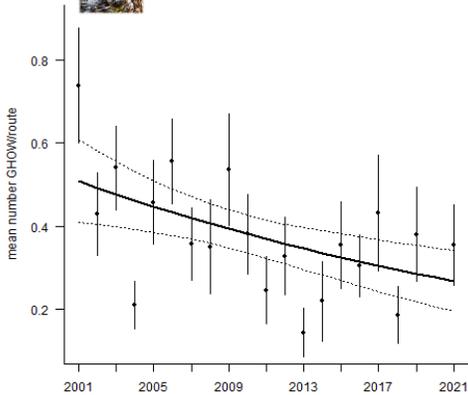
Barred Owl NS



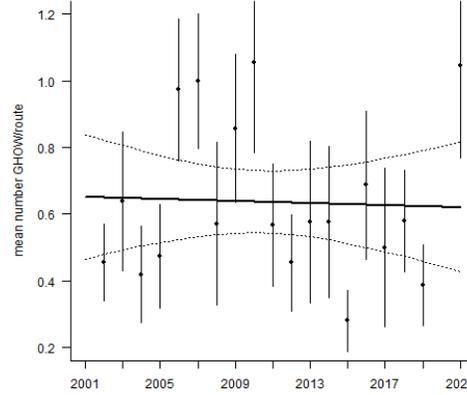
Barred Owl PEI



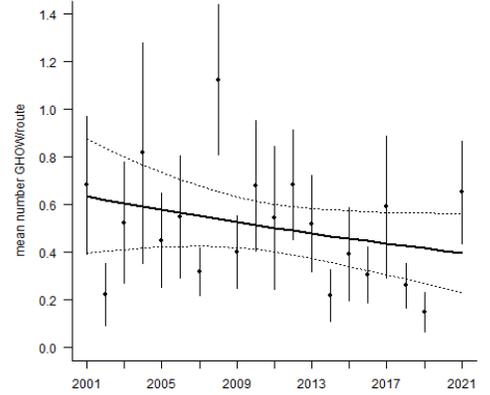
Great Horned Owl NB



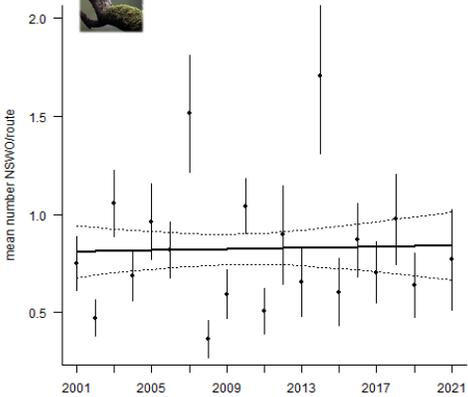
Great Horned Owl NS



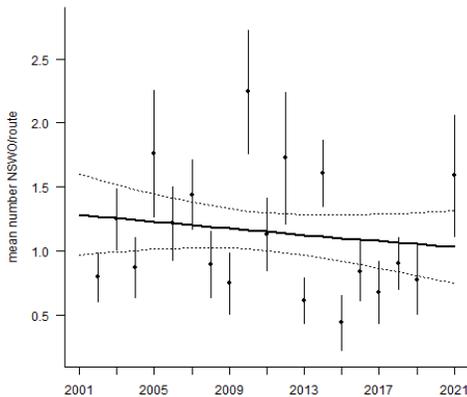
Great Horned Owl PEI



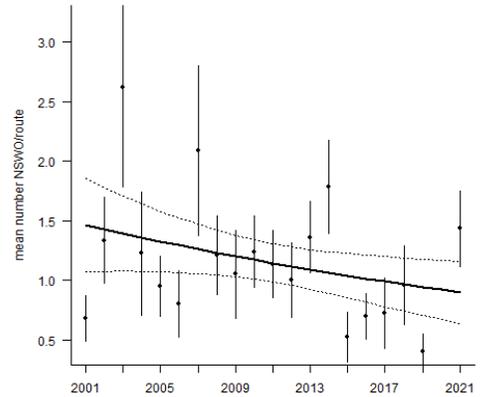
Northern Saw-whet Owl NB



Northern Saw-whet Owl NS



Northern Saw-whet Owl PEI



Fall irruptive migrations of Northern Saw-whet Owls are correlated with abundance of owls during breeding*

By Shawn Craik, Université Sainte-Anne

Some owl species exploit food supplies that are highly variable in distribution and abundance from year to year. These birds can show great flexibility in their movements, concentrating in different areas in certain years, wherever resources are most plentiful at the time. Such species are known as irruptive migrants, one of which is the Northern Saw-whet Owl (NSWO). In some portions of the NSWO range, there is considerable annual variability in the density of individuals encountered during fall migration, most likely driven by regional changes in the availability of important prey, such as voles and mice.



Recent research has revealed that NSWO can demonstrate fall irruptions in Atlantic Canada. Since 2012, a team from Université Sainte-Anne has monitored fall migration of NSWO by banding birds captured with mist nets on the university’s campus at Church Point, Nova Scotia. Their work has revealed an increase in the density of NSWO encountered at the site every two years (2012, 2014, 2016, 2018, 2020; Fig. 1). Each of these ‘irruptive’ years was also characterized by fall flights in which immature owls were at least twice as abundant as adults, and up to 21 times as abundant in 2020. In contrast, immatures were not more numerous than adults during the ‘non-irruptive’ years (Fig. 1).

One explanation is that irruptive migrations are a function of regional increases in the density of breeding NSWO due to elevated availability of prey, followed by dispersal of immature birds during fall. Data collected by Citizen Scientists for the Atlantic Nocturnal Owl (NOS) support this idea. Specifically, NOS data collected from 2012 to 2020 show that NSWO abundance in Nova Scotia and New Brunswick, but not Prince Edward Island, was greater in years with fall irruptive migrations at Church Point compared to non-irruptive migration years. It is suspected that some NSWO originating from breeding sites in Atlantic Canada move south along the Atlantic Coast in fall. Hence, elevated density of immature owls encountered during fall at Church Point should reflect in part increased reproduction in neighbouring regions.

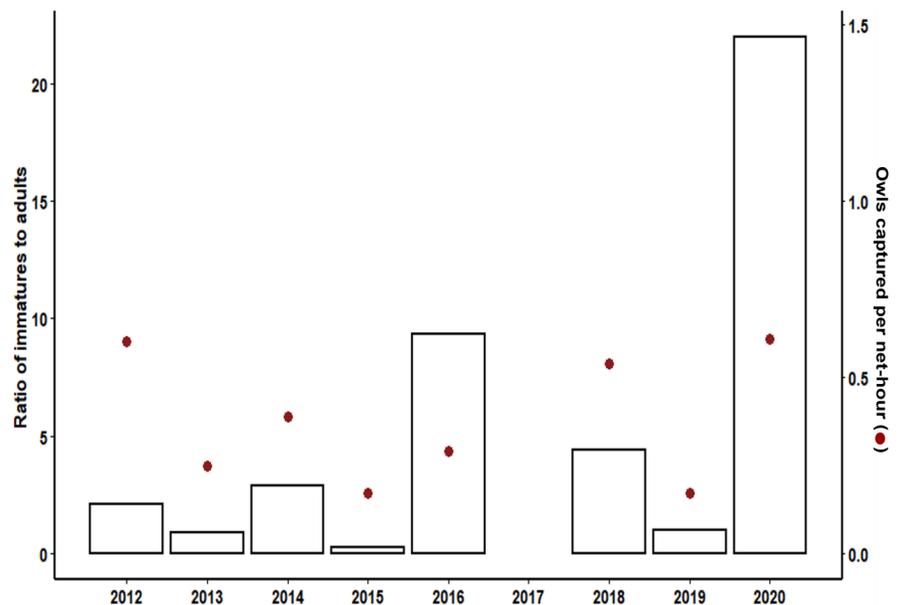


Figure 1. Annual ratio of immature to adult NSWO (vertical bars) and annual capture rate of NSWO per net-hour (red circles) during fall migration at Church Point, Nova Scotia, 2012-2020. Data for 2017 were not included because birds were captured during one evening only in that year.

*Scientific manuscript in preparation by: Amélie Doucet, Mathieu Manuel, Chloé Roy, Taylor Brown, David Shutler, Phil D. Taylor, Randy F. Lauff, Danielle Ethier, Amy-Lee Kouwenberg, and Shawn R. Craik. NSWO photo by Liam Hanks, U. Ste.-Anne.

Population trend estimates of owls in the Maritime provinces of Canada and the influence of call-playback

D. M. Ethier, R. Torrenta, A.-L. Kouwenberg, L. McFarlane-Tranquilla

Below are direct excerpts from the manuscript that will be published in the journal *Avian Conservation and Ecology* in spring of 2022:



Introduction

The primary objectives of the current study were to:

- 1. Estimate abundance trends of owls at a spatial scale appropriate for evaluating the ecological drivers of change*
- 2. Investigate the influence of call-playback on trend estimates*

Methods

The Nocturnal Owl Survey consists of a roadside survey protocol in which Citizen Scientists collect counts of owls at evenly spaced stops during the breeding season. In the Maritimes, these surveys occurred between 1 April and 15 May of each year. Each route was made up of 10 stops, spaced 1.6 – 2km apart. At each stop, a Citizen Scientist trained in owl vocalization identification conducted a 2-minute point count (silent listening period), and subsequently, played a standardized set of owl calls over a speaker to elicit responses from target species.

Our analysis encompassed 183 Nocturnal Owl Survey routes within the provinces of New Brunswick (number of routes = 108), Nova Scotia (51), and PEI (24).

Results

Generally, owl populations in the Maritimes region of Canada appear to have remained stable over the past 20 years. This result was unaffected by the count method used (during playback vs during 2min silent listening period)

In 2019, Barred owl were the most abundant followed by Northern Saw-whet owl, and Great Horned owl. On average, all species were found in higher abundances in Nova Scotia compared to surrounding regions. Northern Saw-whet owl were also found in higher abundance in northwestern New Brunswick compared to surrounding regions.

Discussion

Our results at the provincial and regional scale suggest that owl species included in this analysis are stable. However, analysis at finer scales revealed trends that may have important implications for conservation and management of these populations. For example, we found trend estimates for Barred owl and Northern Saw-whet owl were negatively correlated with abundance (i.e., negative trends in areas of high abundance, and vice versa). Although trends are presently not significant, they could have a disproportionately large influence on the local population if they became significant in either direction, since they could quickly increase or decrease the local population size.

A Wild Evening on Route NS041!



A photo of the culprit taken by Natalie Thimot

"I've been conducting owl surveys over many years, and this was the first time that I've ever had a barred owl come and actually clutch the head of one of the participants! I think the owl struck her head (she was wearing a tuque at least) because she had been holding the speaker on top of her head periodically to broadcast the sound in different directions. She reported that it was a rather gentle but firm clutch of her head rather than a strike. Just for a fraction of an instant and then gone. One can imagine the surprise, however, since the owl arrived unannounced from the darkness and approached from behind. Interestingly, the owl did not vocalize after the incident but sat on a perch. It's amazing how barred owls can have different personalities. And it's an amazing way to wake up if an owl makes physical contact with you part way through the survey night, as I am sure Jennika would agree."

~Donna Crossland

"What a wild memory from the field! It was quite the experience and I'm glad Natalie saw the owl because otherwise no one would have believed me. I didn't see a thing, I just felt the thud. I took my speaker holding job too seriously perhaps, it was my first owl survey evening and I would definitely do it again. I held the speaker and spun slowly in circles to project to all, perhaps too convincingly."

~Jennika Hunsinger

Please share your photos and stories with us!

We'd love to see your photos and hear about your experiences during the 2022 Atlantic Nocturnal Owl Survey!

“Owl-standing” Volunteers!

We greatly appreciate all the time and effort contributed by our owl surveyors and their assistants! Your efforts have also been recognized formally in the *Acknowledgements* sections of the scientific manuscripts described on pages 3 and 4 of this newsletter.



CONTACT INFORMATION

For inquiries about routes in **New Brunswick** or **Nova Scotia**, please contact Amy-Lee Kouwenberg
akouwenberg@birdscanada.org

For inquiries about routes in **Cape Breton**, please contact Susann Myers
myerss@eastlink.ca

For inquiries about routes in **Prince Edward Island**, please contact Mark Arsenault
maarsenault@gov.pe.ca

For inquiries about routes in **Newfoundland and Labrador**, please contact Catherine Dale
cdale@birdscanada.org

Don't Forget! You can view a map of all the Atlantic Nocturnal Owl Survey routes by logging into **NatureCounts** and clicking *Available Routes*: www.birdscanada.org/naturecounts/atowls/main.jsp
 Using the map, you can sign up for an available route (indicated by green balloon) or retire from a route that you are currently surveying (indicated by blue balloon).

If you need **help** registering for or using NatureCounts, please don't hesitate to contact Amy-Lee!



Many thanks to our generous partners and funders: The New Brunswick Wildlife Trust Fund, TD Friends of the Environment Foundation, The New Brunswick Department of Natural Resource and Energy Development, and the Prince Edward Island Department of Agriculture and Forestry.



TD Friends of the
Environment Foundation

