

Blips in the data: no problem!

Highlights

- Annual Summary
- Bird and Frog Trends and Abundance
- Accomplishments
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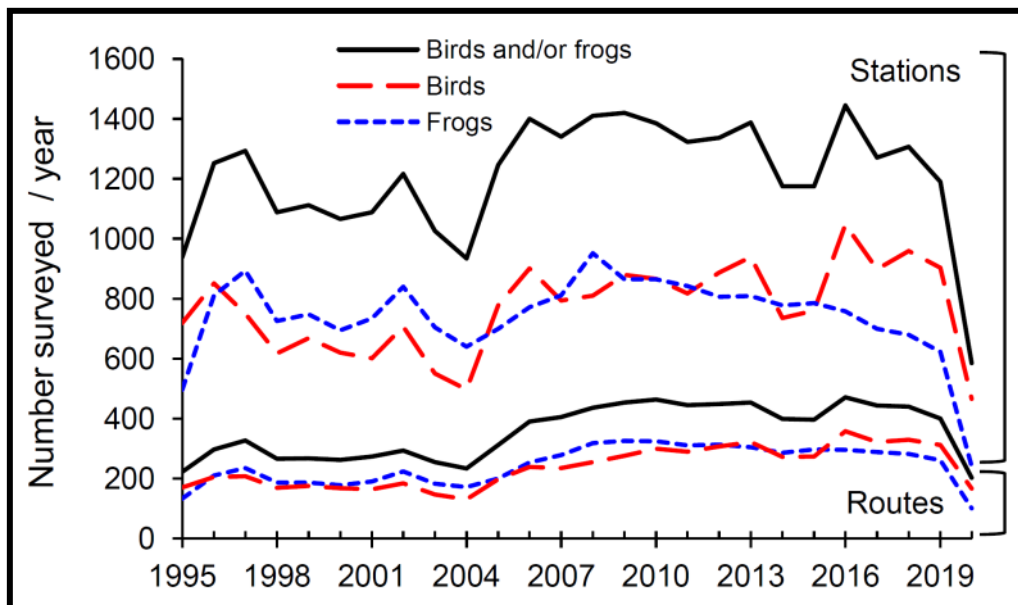
American Toad, Milla Meng

The 2020 GLMMP was challenging no matter how you look at it. Lockdowns, stay-at-home orders, and other necessary public health restrictions—particularly early in the season during the 1st frog visit—meant that many of us were unable to survey. Nonetheless, extreme measures were necessary and we're glad we all did the right thing. But no problem! As you will see, the 2020 results are surprisingly precise, and despite blips in the data for some species, they tell us quite a bit about the state of marsh birds and frogs across the region. So don't despair and rest assured that deficiencies will very likely be remedied in 2021. We thank you and all of our volunteer participants for making the program an outstanding success. Read on and see the ways we've been busy putting your survey results to good use.

birdscanada.org/bird-science/gl_mmp

How are we doing?

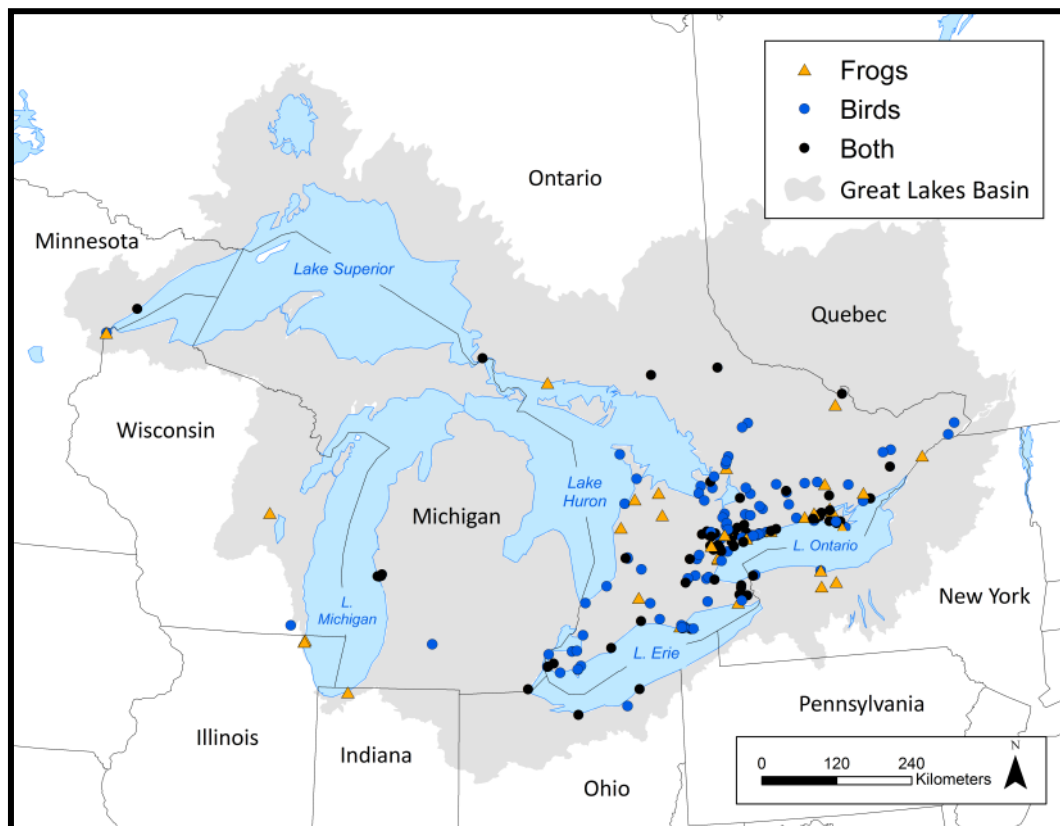
In the 2020 season, we completed bird surveys at 166 routes and 466 stations, and frog surveys at 101 routes and 241 stations. Just over 200 volunteers contributed nearly 2400 hours of effort. Despite the many challenges associated with COVID-19, the 2020 effort amounted to a respectable 52% of the average annual effort over the previous 5 years for birds and 35% for frogs. Even though these are big reductions (see graph), it's still very impressive that we managed to survey over 100 routes and hundreds of stations in 2020 for both birds and frogs. So well done! Using your contributions, we draw important conclusions on the status and trends of species and help guide conservation actions. Thank you!



Great Lakes Marsh Monitoring Program Surveys From 1995 to 2020

How are birds and frogs doing?

The latest trends show that populations of 6 of 18 (33%) marsh-associated bird species significantly declined between 1995 and 2020, and 1 of 8 (13%) marsh-associated frog species significantly declined (see page 4). On the up side, 8 of 18 (44%) bird species, including the at-risk Least Bittern (hooray!), and 3 of 8 (38%) frog species significantly increased. These trends tell us how species change over many years. To get a sense of year-to-year differences, take a look at the annual abundance indices for birds (see page 5) and occupancy for frogs (see page 6). Take note that bird results for 2020 based on about half of our normal routes were within expected values for all species save Trumpeter Swan, which dipped quite a bit for reasons that are unclear. By contrast, frog results for 2020 based on about a third of our typical sample showed blips for 3 of the early-breeding species (Chorus Frog, Spring Peeper, and Wood Frog). This was apparently because many 1st frog visits were delayed by 1-2 weeks compared to normal, almost certainly due to COVID-19 public health restrictions. This all suggests that our normal



Great Lakes Marsh Monitoring Program Routes Surveyed in 2020

effort to survey a large number of routes according to our survey guidelines generates very robust information on the status and trends of these species in the region.

Accomplishments

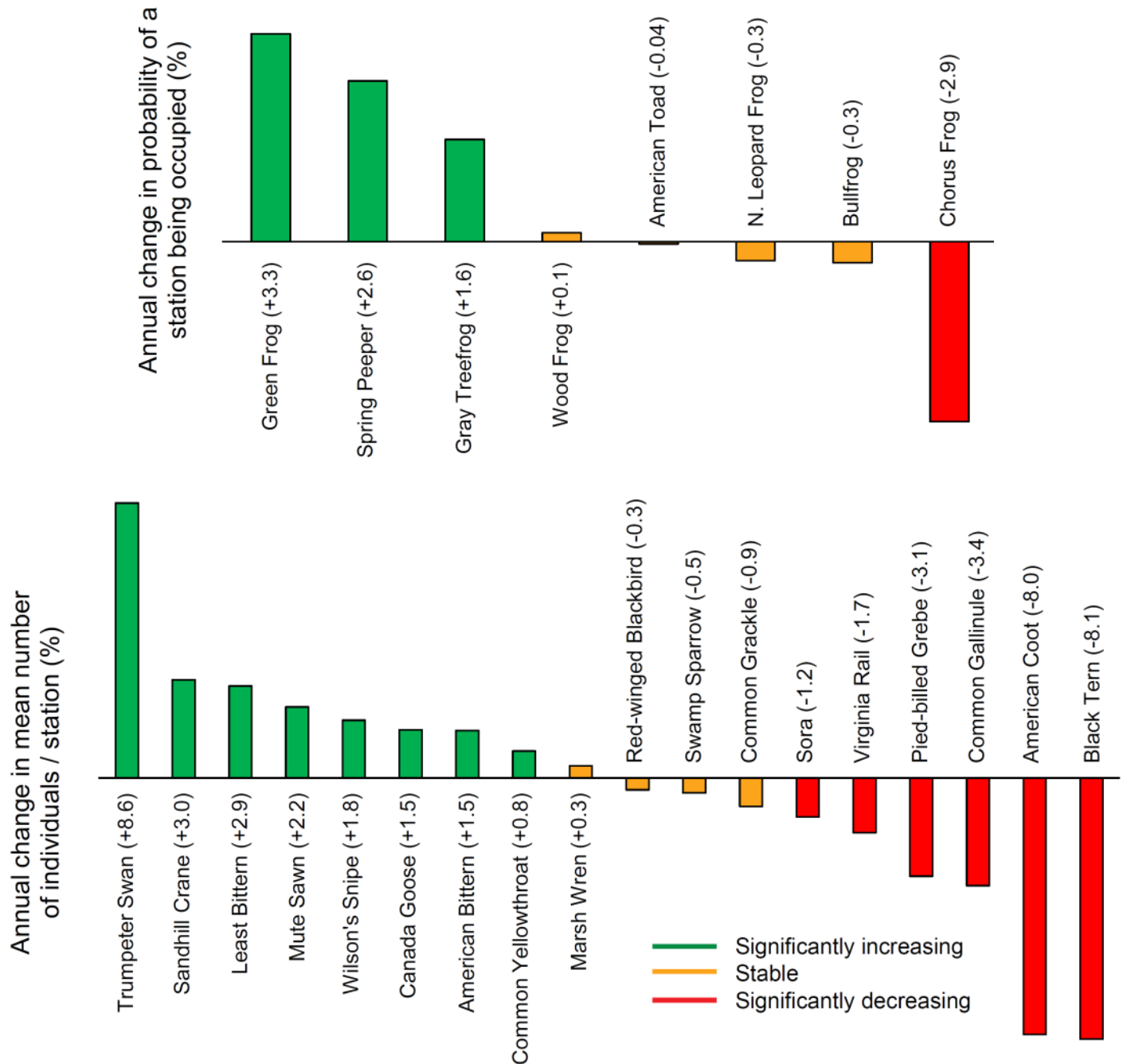
With the tremendous effort of volunteer surveyors and financial assistance from supporters (see last page), we have accomplished many important activities and outcomes over the past year. These include presentations, filling requests for raw data, and reports that summarize and draw conclusions from your hard-earned data. We also respond to media inquiries.



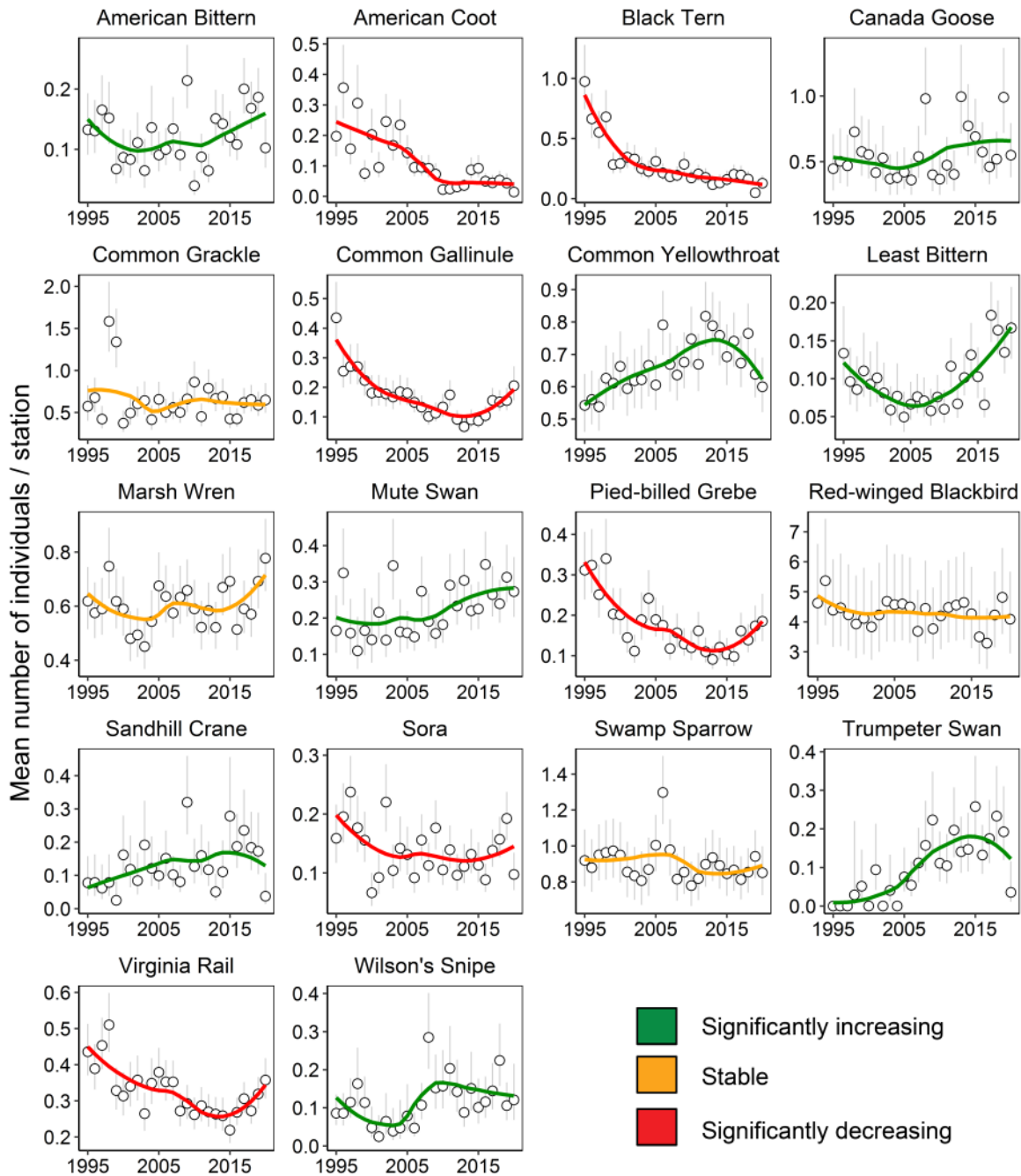
Great Blue Heron, Reigh Higgins

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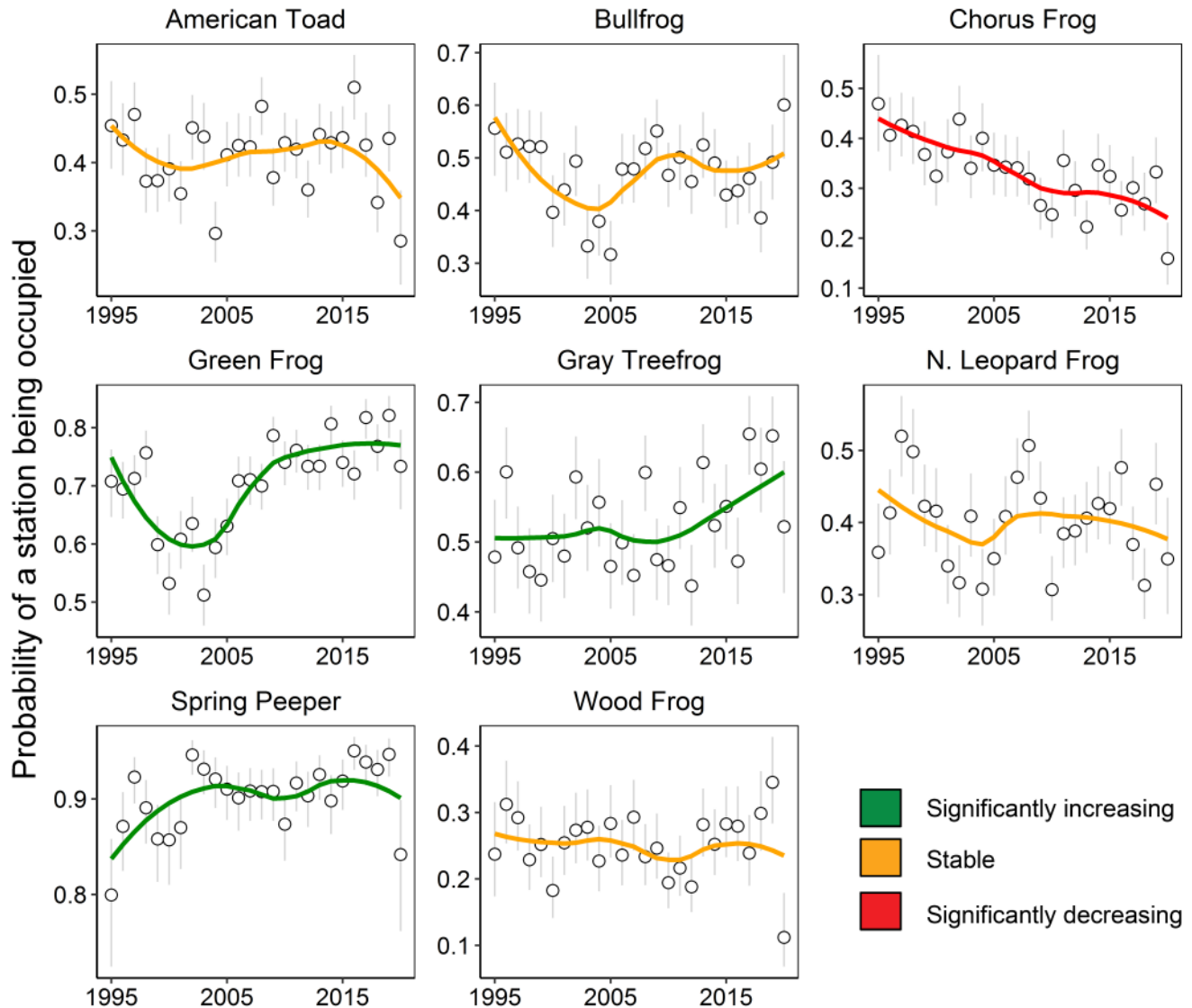
Great Lakes Marsh Monitoring Program Trends for Birds and Frogs 1995 – 2020



Great Lakes Marsh Monitoring Program Annual Abundance for Marsh Birds 1995 – 2020



Great Lakes Marsh Monitoring Program Annual Occupancy for Frogs 1995 – 2020



Would you like Marsh Monitoring Program Data? You can request a copy of the information that you or others have collected. See the download tab at birdscanada.org/naturecounts/.

Presentations:

Great Lakes Marsh Monitoring Program: 25 years of conserving birds and frogs. Research and Conservation Conference, Long Point World Biosphere Reserve Foundation, online meeting. Available here: youtu.be/2KA96HvJ5k8?t=1325.

Ontario Breeding Bird Atlas-3 Marshbird Survey. Atlas-3 Launch Weekend, online meeting. Available starting at min 16:15: here: youtube.com/watch?v=irtkNvsKkcg. See article on p. 9 for more details.

Data:

We supplied the following partners with your hard-earned data to achieve and advance wetland conservation: Ducks Unlimited Canada; Environment and Climate Change Canada; Nature Conservancy of Canada; Ontario Ministry of the Environment, Conservation and Parks; Ontario Natural Heritage Information Centre; Parks Canada; Royal Botanical Gardens; Raisin Region Conservation Authority; and various consultants for environmental assessments and students for research projects.

Reports:

Changes in abundance of Least Bitterns in Ontario, 1995-2019. Published in *Ontario Birds*, and based entirely on GLMMP data, this analysis shows abundance of Least Bitterns was relatively stable in Ontario until 2016 and then substantially increased thereafter. The pattern is largely due to increases in Least Bitterns at coastal wetlands (i.e., those directly influenced by fluctuating Great Lakes water levels) compared to inland. The paper discusses the role of fluctuating water levels for this species and what increasingly frequent water level extremes due to climate heating may mean for conservation of this threatened species. Available here: ofo.ca/library/serve/ob-38-3/index.html?page=4.

Ability of three citizen science programs alone and combined to monitor marsh bird abundance. This study compares and contrasts annual indices of abundance and population trends for 18 marsh-breeding bird species across southern Ontario based on data from the GLMMP, the North American Breeding Bird Survey (BBS), and eBird. We found that the GLMMP provides a unique and critical baseline of reliable information for marsh-dependent species that is not provided by BBS or eBird alone. We've also found that adding BBS and eBird data to GLMMP data improves the precision around population trend estimates, which suggests integrating all three datasets is fruitful. The manuscript has been submitted to a peer-reviewed journal for publication.



Are individual encounter histories needed for estimating abundance and population trends of breeding marsh birds? We anticipate results from this project will justify simplifying the GLMMP bird field protocol by doing away with the minute-by-minute encounter histories for focal species. In their place, we think recording only the time of first detection for each focal individual will work equally well. By making the protocol simpler we hope the program will be more attractive to prospective volunteers, which will help boost participation in the GLMMP and the MMP in general across Canada. We're currently doing analysis, but plan to submit the results for publication in a peer-reviewed journal.

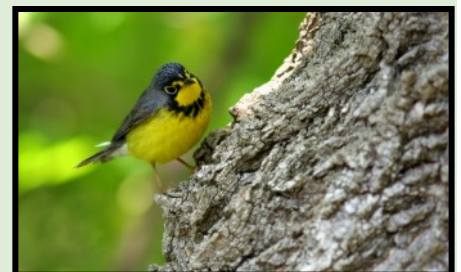
How does landscape change influence marshbirds in lower Great Lakes wetlands? This study uses multiple years of GLMMP data at the same stations throughout southern Ontario to document the influence of concurrent changes in the surrounding landscape on occupancy of over a dozen different marshbird species. The analysis uses remote sensing data from satellites to measure landscape change and will supply some of the most robust evidence to date of the negative influence of threats such as increasing development and loss of surrounding wetlands to marshbirds in the Great Lakes region. We're currently writing up a manuscript for publication in a peer-reviewed journal.



Wetland adjacent to an Industrial site,
David Schandlen

Would you like to learn more about Birds Canada?

- See the birdscanada.org website to learn about Birds Canada, its vision, strategic plan, news, learning opportunities, and so much more.
- You can review the 2020-2021 Birds Canada annual report and financial statements at birdscanada.org/annual-report.
- Our list of citizen science opportunities can be found at birdscanada.org under "[How You Can Help](#)".
- Our list of research activities can be found under "[Where We Work](#)".
- Birds Canada is a national, non-government, not for profit that delivers research, conservation, and education activities to support the conservation of birds and their habitats.
- Our programs are supported in various ways including donations, grants, and government contracts. Donations to help cover program costs are always welcome and help ensure the continuance of our long-term programs. Learn more on the website under the section "[Give](#)".



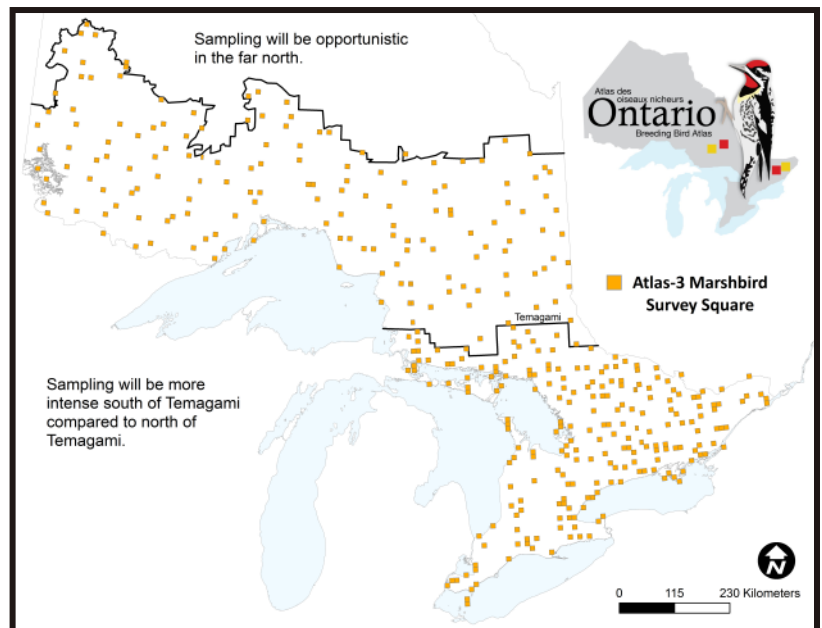
Canada Warbler, Sandra Horvath



Ontario Breeding Bird Atlas-3 Marshbird Survey (a new opportunity)

Your outstanding effort and dedication to the GLMMP is critical for tracking populations of marshbirds across southern Ontario. GLMMP coverage in central and northern Ontario, however, has been comparatively sparse over the years due to relatively fewer citizen scientists living in these areas. Therefore, we have initiated a special marshbird survey as part of Ontario Breeding Bird Atlas-3. The third atlas is a 5-year project starting this year that aims to map the distribution and relative abundance of all breeding bird species throughout Ontario. During this intensive 5-year period of fieldwork, many volunteers and staff will travel throughout the province, providing a unique opportunity to better understand marshbirds in northern areas. As such, the main goal of the Atlas-3 Marshbird Survey is to collect robust, detailed information on marshbirds throughout the entire province. In doing so, it will help fill important knowledge gaps for marshbirds, especially in central and northern Ontario where GLMMP coverage has been sparse.

The Atlas-3 Marshbird Survey will complete GLMMP-style bird point counts at survey stations placed within randomly-selected 10x10 km atlas squares throughout most of Ontario; coverage in the far north beyond roads will be opportunistic depending on other atlas activities (see map). The random selection of squares accounts ahead of time for known differences in marshbird abundance among regions and among different types of wetlands such as Great Lakes coastal versus inland wetlands. It also accounts for lower surveyor capacity in the north. This all helps ensure that the data collected will be as precise as possible and will be representative of wetlands throughout the entire province.



The information made possible by the Atlas-3 Marshbird Survey is expected to produce science products not otherwise possible, such as more-detailed and accurate relative abundance maps for the atlas and more robust total population size estimates for the entire province. The data will also allow calculation of the only population trend information for the entire province, if the Atlas Marshbird Survey is repeated in a similar manner in future atlases, which is currently the plan. Information from the Atlas-3 Marshbird

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Survey will be immediately useful for a variety of conservation initiatives, including species-at-risk status assessments by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and the Committee on the Status of Species at Risk in Ontario (COSSARO). The data will also be important for strategic planning by the Ontario Eastern Habitat Joint Venture (OEHJV), among others.

The GLMMP will continue to operate during Ontario Atlas-3, and data collected by the GLMMP will be combined, where appropriate, with data collected by the atlas's Marshbird Survey. We anticipate minimal overlap between locations surveyed for the GLMMP and the Atlas-3 Marshbird Survey. In cases where survey locations for the two programs are very close or overlap, please collect and submit data for each program separately following the appropriate field protocol. Please note that the protocols are similar but different in ways appropriate for the goals and participants of each program.

We look forward to updating you on this exciting new project as it progresses over the course of the atlas. You can learn more about the Atlas-3 Marshbird Survey here:

birdsonario.org/marshbird-surveys/.

Please remember that data collected by the GLMMP will be combined, where appropriate, with data collected by the atlas's marshbird survey.

#MMPSurvey #FieldNotes

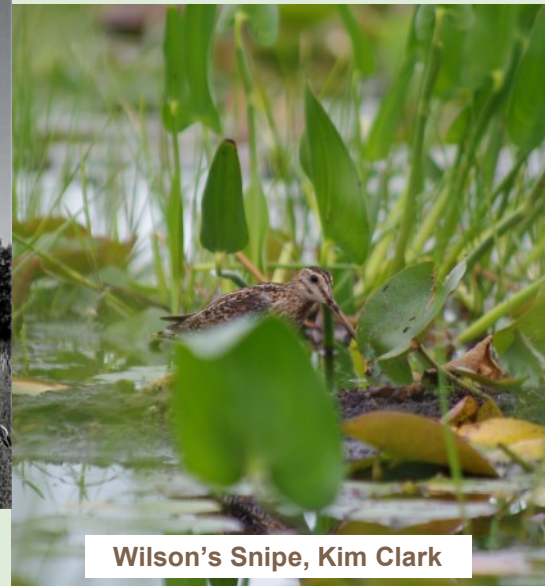


At my first station ... there was a family of Virginia rails running around in clear sight. I've rarely ever seen a Virginia rail, so seeing one this morning was a treat, but to see two adults and 4 (or 5) fledglings was pretty amazing. They were just quietly foraging and scampering, until the recorded VIRA call started. When the recording started, the young got very vocal in peeping back. One of the adults got extremely territorial, and ran right up to within about 3 feet of me (at that point it cleared the margin of cattails that was separating us, and I assume that's when it saw I was a person, and it ran back).

Anyway, a great morning, and first for me (especially nice that it happened during an Atlas year, giving us a "confirmed" breeding for this species). Bill T. (long term participant)



Marsh Monitors in Action!



Wilson's Snipe, Kim Clark

Sign up to Participate in the Ontario Breeding Bird Atlas at birdsonario.org

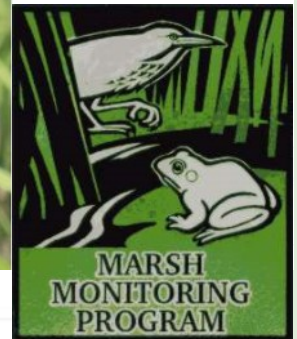
[Click here for the 2021 #MMPSurvey Social Media Photos!](#)



Black Tern Eggs, Kim Clark



 eowyn1458 #mmps survey Red-winged Blackbird
5w
 treegonghealer One of my favorite birds. 🍌
4w Reply



 bobhighcock It's a challenge traversing the slope to the site but visit 1 is done for our marsh monitoring on Richardson's Creek in St. Catharines.
#marshmonitoringprogram
#marshmonitoring #greenribbontrail
#birdscanada
5w



Volunteers and Coordinators are needed on both sides of the border!
Check the website or contact Kathy for more information.



Northern Leopard Frogs,
Carolyn Milne

"The water in the marsh is much lower than last year. This year, mudflats are exposed and there were shorebirds (2 Semi-palmated Plovers, 2 Spotted Sandpipers and 6 Killdeer). A pair of Common Tern are nesting there as well."

Sandra Hawkins
#MMPSurvey #Fieldnotes
birdscanada.org/gl_mmp





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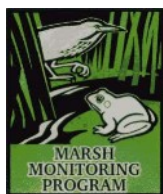
Launched in 1995, the Great Lakes Marsh Monitoring Program is:

- A bi-national, long-term monitoring program developed by Birds Canada and its many partners;
- Built on the commitment of individuals, foundations, governments, and non-governmental organizations that work in partnership towards effective conservation;
- A coordination of skills, interests, and stewardship of hundreds of citizens across the Great Lakes basin.

Contact Kathy Jones, volunteer@birdscanada.org, for more information about the Great Lakes Marsh Monitoring Program and other Birds Canada volunteer opportunities.

Visit the **volunteer portal** at
www.birdscanada.org/bird-science/gl_mmp

**For all your
Marsh Monitoring Needs**



**Thank-you to all the Great Lakes Marsh Monitoring Program
Participants who make this program possible!**

The Great Lakes Marsh Monitoring Program is a program of Birds Canada supported by:

This project was undertaken with the financial support of the Government of Canada.

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Canada



**Great Lakes
RESTORATION**

**NATURE CONSERVANCY | CONSERVATION
DE LA NATURE
CANADA**



**Ducks Unlimited Canada
Canards Illimités Canada**

Ontario

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EHJV
Eastern Habitat
Joint Venture



PCHE
Le plan conjoint
des habitats de l'est