



Biolink

Official Newsletter of the Atlantic Society of Fish and Wildlife Biologists

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2022 Fall Annual General Meeting in Fredericton, NB



Dr. Joe Nocera (conference organizer) left, and presentation winners from left to right: Cléa Frapin (1st), Sylvain Christin (2nd), and Larissa Simulik (3rd).

The 59th Annual General Meeting of the Atlantic Society of Fish and Wildlife Biologists was hosted on November 14 – 16th in Fredericton, New Brunswick. The conference had 75+ registrants, 8 posters and 24 oral presentations. We saw a diverse representation of topics this year, and several different universities represented by both student posters and presenters.

Notable topics included three separate presentations on stable isotopes and its importance to research and conservation management. Bobby Nakamoto (Post-doc, UNB) gave a very interesting talk on the long-discussed co-existence of Lynx and Bobcat in the Maritimes and the implications of using stable isotopes to better our understanding of this relationship. Damien Mullen (PhD candidate, UNB) dove into some of the results of his Wood turtle research and shared some amazing photos he was able to capture during the field season. Both Cléa Frapin and Sylvain Christin (MSc and PhD candidates, Université de Moncton) have created complex models that are attempting to better our understanding of food-webs and species presence in the Arctic, and their presentations earned them 1st and 2nd place respectively. Larissa Simulik came in 3rd with her presentation on Woodcock in New Brunswick. You can see the top 3 presentation abstracts on page 5 of the newsletter.

The silent auction was extremely successful, raising close to 1000\$ to put towards ASFWB sponsored scholarships puts out each year. The executive team sends their thanks and major kudos to Dr. Joe Nocera and his lab cohort for organizing this successful event. It is always a major undertaking to put on a conference!

We want to thank everyone for attending the 59th conference, it was an absolute pleasure to be able to come together and share what wildlife research and conservation education efforts that are going on in Atlantic Canada!

We look forward to seeing everyone at the 60th AGM in Newfoundland next fall. Details to follow in the upcoming months.

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The Newsletter is published twice a year. Articles and opinions do not necessarily reflect the views of the Society or its members. Do you have a research project, wildlife topic, upcoming event, photo, story, or anything else that you would like to see included in Biolink? If so, our newsletter editors! We are always looking for content ideas and photos from our membership!

Thank you to all who contributed to this issue!

Attention: We are looking to fill our VP Programming position!

We are also looking for someone to **HOST** the 60th general meeting in **Newfoundland**, do you know someone who we should contact or are you interested in hosting? Please send one of the exec an email!

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ASFWB Fish and Wildlife Research Grant

The ASFWB Fish and Wildlife Research Grant was established in the fall of 1994 to assist members who are conducting or supervising wildlife or fisheries research in Atlantic Canada. The grant provides funding up to **\$500 annually for research projects**. Any aspect of fish and wildlife research will be considered, but projects with applied management goals will receive priority. Applicants must be members of the ASFWB. Projects that are largely government sponsored or funded are not eligible for this award.

Applications are OPEN until March 30 of each year.

For more information or **TO APPLY**, visit: <http://asfwb.ca/the-asfwb-wall-of-fame/asfwb-fish-wildlife-research-grant/>

Supporting Students in Atlantic Canada

ASFWB members have always been committed to helping advance the careers of Atlantic Canadian students in the field of biology. To this end, ASFWB has been integral in setting up scholarships that directly support top biology students at three universities in Atlantic Canada.

The David J. Cartwright Memorial Scholarship was established in 1991 at the University of New Brunswick, to honour David J. Cartwright who was a member and strong supporter of the ASFWB for many years and contributed to wildlife management in Atlantic Canada. The Cartwright scholarship is for students entering the final year of Forestry (Wildlife Option) or Science (Biology Option). The Donald G. Dodds Scholarship was established in 2010 at Acadia University with preference for graduate students in the Biology Department, though honours and undergraduate students are considered. Potential candidates for all scholarships should have combined scholastic ability with a demonstrated interest in biology and/or wildlife management. Disbursement is approximately \$1000/ year. **This year, Ava Hart a 4th-year Environmental Management student was the recipient of the award! Congrats Ava!**

Funds continue to be raised for the Gilbert R. Clements Scholarship at Holland College for graduating students entering the University of Prince Edward Island Wildlife Conservation Program. If you would like to support our students, consider making a donation – contact Holland College today!

Become an ASFWB Member

Regular Membership: \$20/year

Student Membership: FREE!

To renew or become a new member, visit www.asfwb.ca or contact our Treasurer, Ed Torenvliet (ed.torenvliet@gnb.ca) for other payment options.

Your membership supports:

- Hosting the Annual General Meeting,
- Disbursement of the ASFWB Research Grant,
- Scholarship Contributions

Updates on Invasive Species and Related Projects in New Brunswick

By Claire Ferguson

In recent years, New Brunswick has been facing increasing threats from invasive alien species (IAS) on our environment, economy, and society. At the recent ASFWB 2022 AGM and Conference, Kristin Elton, Program Director for the [New Brunswick Invasive Species Council \(NBISC\)](#), provided updates on the state of various IAS and highlighted some of the work being done to combat them. Below are key IAS updates discussed at the conference and information about the new invasives reporting platform being adopted across the Maritimes.

Zebra Mussels

In September, an established population of Zebra Mussels (*Dreissena polymorpha*) were found in Lake Témiscouata, Quebec, which flows directly into New Brunswick's Madawaska and Wolastoq (St. John) River. Currently, plans are being made by authorities in Quebec and New Brunswick to assess the extent of the spread beyond the lake. In 2023, NBISC will be working with partners to monitor 10 to 15 high-risk sites for the mussels and will be holding an Early Detection & Rapid Response workshop. Anyone spending time on the Madawaska or upper Wolastoq River is being asked to report any suspected sightings to NBISC by emailing director@nb invasives.ca and to [CLEAN, DRAIN, and DRY](#) their boats, trailers, and other recreational equipment when leaving these waterbodies.



Photo by Dave Britton, US Fish and Wildlife Service.

Invasive Phragmites

Invasive Phragmites (*Phragmites australis* ssp. *Australis*), an introduced species of tall reed grass, has been rapidly expanding its range across Canada, including New Brunswick, since its introduction in the 20th century. While early reports described small quantities in urban centres, information gathered by NBISC and partners through roadside surveys completed in 2021 and public databases revealed numerous Phragmites stands scattered sporadically throughout the province and significantly more patches within the central invasion hotspot of Moncton and River-view than anticipated. Also, genetic testing of samples taken during these surveys did not find cases of hybridization with the native subspecies (*Phragmites australis* ssp. *Americanus*). Currently, NBISC is working with partners in southeast NB to determine the extent of the invasion in hotspots and ecologically important areas (e.g., SAR habitats) and in 2023 will be planning a demonstration removal site and developing management recommendations for land managers.



NBISC surveying a patch of suspected invasive Phragmites. Photo by NBISC.

Common Hogweed/Meadow Cow Parsnip

An extensive population of Common Hogweed/Meadow Cow Parsnip (*Heraclium spondylium*), an invasive plant belonging to the same family as Giant Hogweed and Woodland Angelica, has been expanding towards northern New Brunswick from Quebec. NBISC was made aware of this encroaching invasive plant by l'Organisme de Bassin Versant Matapédia-Restigouche, who has been surveying and coordinating the removal of patches of *Heraclium spondylium* in recent years. The two known locations of this plant in New Brunswick are in Atholville and the Sackville Waterfowl Park in Sackville.

Improving the State of IAS Data

Over the last few years, NBISC has been working on increasing the amount and availability of invasive species data in the province. Currently, the data that does exist is piecemealed across different organizations and compiled in different ways. In an effort to centralize invasive species data, NBISC has begun rolling out iMapInvasives, which is a free GIS-based data management system used to map sightings, track management actions, and aggregate data from many sources and user types. In 2023, we hope to continue to roll out this tool to land managers across the province. For more information on iMapInvasives or if you have invasive species data you'd like to share, email director@nb invasives.ca!

Winning presentations from the Annual General Meeting —see their abstracts below!

Modeling and exploring the structure of the seasonal Arctic terrestrial trophic network

Presenter: Cléa Frapin, Université de Moncton

The Arctic is transforming at a fast pace with unprecedented climate change impacts. These novel conditions can drastically alter the species compositions and interactions in this biome with new species arriving and possible extinctions. Modelling seasonal trophic interactions in this biome in the Arctic is an essential tool towards predicting how large-scale food web structures will be affected. Here we explore the Arctic trophic network at a circumpolar scale. To this end, we developed a metaweb, a model of all the predicted interactions among arctic species. This metaweb is built around the allometric scaling relationship between predators and their prey, which can be a major determinant of ecosystem functioning. To do so, we compiled the diet of terrestrial Arctic predators based on published literature and established a presence-absence matrix of the Arctic species at the circumpolar scale. We then mapped the structure of Arctic ecological networks in space. This allowed us to identify areas with the greatest complexity of interactions and those most sensitive to extinctions. Because of the logistics and access constraints, it is hard to get information on the trophic interactions during the winter period in the Arctic. For the first time, however, we predicted the Arctic terrestrial trophic network in winter at large-scale, filling an important knowledge gap. This circumpolar study is quantifying the potential shifts in trophic interactions across a fast-changing Arctic. The results of our analysis will provide large-scale measures of species composition changes that can impact ecosystems and help predict cascading effects.

Studying bird phenology with passive acoustic monitoring and deep learning

Presenter: Sylvain Christin, Université de Moncton

As the global climate is changing, so can the phenology of living species. Birds for example can adjust the timing of their migration or breeding in response to warmer springs. However, monitoring bird communities on a large scale can be challenging especially in remote areas. As bird vocal activity is closely linked to breeding phenology. Thanks to advances in acoustic technology, we are able to record sounds for months in harsh conditions and at multiple locations. And with the recent progress made in the field of artificial intelligence, we can automatically detect bird songs with record accuracy. Using strongly annotated field data collected in 8 arctic sites in 2018 and 2019, as well as publicly available bird song datasets, we trained a lightweight bird song detector using a deep convolutional network. When evaluated on a dataset representing a full summer of acoustic recordings, our model achieves an AUC score of 89.4%. More importantly, the curve of vocal activity during the summer provided by our model very closely follows the one obtained with our reference dataset, making it possible to reliably detect variations in vocal activity through time. As deploying audio recorders becomes easier and cheaper, we believe that our model provides a fast, easy and reliable way to study avian phenology responses to climate change at the community level on a global scale, even in the most remote areas.

Where the woodcock are: the nesting and diurnal habitat requirements of the American woodcock in New Brunswick

Presenter: Larissa Simulik

The American woodcock (*Scolopax minor*) is a forest-dwelling shorebird whose population has declined 1% annually since the 1970's, mainly attributed to the loss of young forest across its entire range. As such, the Eastern Habitat Joint Venture in Canada now considers the American woodcock to be a priority species for conservation. The population goal for New Brunswick is to maintain the current population through some sort of habitat management effort. However, field data available for the woodcock habitat availability and quality only focuses on singing grounds. No field data exists on the requirements for woodcock nesting and diurnal habitats in New Brunswick. We surveyed forests from late April to early June 2022 across five different sites in New Brunswick and used thermal cameras to identify nesting and non-nesting woodcock. Coordinates were noted of each bird found at either the flush point or the nest site; we found 13 nests and 33 diurnal sites. At woodcock and control sites (n = 46 for each) we conducted habitat surveys. The circular survey plots were 0.04 ha within which we measured tree basal area, tree and shrub stem density, tree height, canopy cover at a 30cm height, and sampled soils. Preliminary results indicate a preference for intolerant hardwoods and that different hardwoods are preferred between the southern and northern sites. Forest age ranged wider than expected with some birds being found in forests with more immature than mature trees. Understanding the regional habitat requirements of woodcock will allow for more informed forest management policies and improved conservation efforts.

Students on Ice: Ocean Conservation Expedition

Kristine Hanifen & Jessie Wilson, Acadia University



©Kristine Hanifen

From September 7th to 29th, the Students on Ice (SOI) Foundation embarked on their first ever Ocean Conservation Expedition, exploring the outer coasts of Nova Scotia and the Bay of Fundy. This expedition took place aboard the Polar Prince, a former Canadian Coast Guard light icebreaker that is now an Indigenous-owned expedition vessel belonging to Miawpukek-Horizon Maritime Services. It is the only Indigenous-owned icebreaker in the world! This expedition emphasised the need for marine protected areas, and was primarily focused on ocean research and stewardship, education, outreach, and ocean literacy. A diverse group of over 100 research partners, artists, Indigenous community leaders, youth, media, and industry were brought together over the course of this journey.

We (Kristine Hanifen and Jessie Wilson, Acadia University graduate students) felt very fortunate to be invited to join this expedition. We not only received extensive Seabird Observer training under the Canadian Wildlife Service's Eastern Canadian Seabirds at Sea survey protocol, but also made numerous connections and friendships, participated in various research activities, visited coastal islands and protected areas that are otherwise very difficult to access, and learned about ocean conservation and issues from multiple perspectives.

To explore these ecologically significant islands and marine areas with a group of like-minded yet diverse individuals, with aligning passions and goals, was inspiring and special. Whether we are aware of it or not, the ocean holds significance in all of our lives. It is responsible for every other breath we take, and covers 71% of our planet. It holds an abundance of ecological, economic, and social value, and must be sustainably conserved and protected.

We have left this journey with an increased passion for ocean conservation, and an eye-opening experience that will remain with us indefinitely. We are appreciative of the spectacular work being done by the SOI team, and we can't wait to see what they accomplish next!



©Kristine Hanifen

Conservation opportunities for Chimney Swifts

Rielle Hoeg, Graham H. Sorenson, Ally Manthorne and Laura Tranquilla, *Birds Canada, Sackville, NB*

Chimney Swifts are Threatened in Canada due to declines of flying insect prey, possible timing mismatch between insect emergence and swift migration, climate change, and loss of habitat used for roosting and nesting. The recently published Recovery Strategy outlines the actions needed to halt or reverse population declines.

Birds Canada is implementing many of these actions, including encouraging stewardship by landowners, volunteers, and municipalities; collaborating with national partners to create the Chimney Swift Chimney Restoration Fund to support repair of active roost sites; and supporting ongoing population monitoring efforts.

Although we know the locations of 32 active roost sites in the Maritimes, their numbers and suitability to swifts are diminishing due to capping, lining, disrepair, and demolition. The Chimney Swift Chimney Restoration Fund, or Chimney Swift Fund for short, is a project supported by Environment and Climate Change Canada and undertaken with partners from Saskatchewan to Nova Scotia to financially support the repair of structures (e.g., chimneys, barns, etc.) used by swifts. Any owner of a structure used by swifts for roosting or nesting that needs repair may apply. Additionally, a third party may lead a structure restoration project and apply on behalf of the owner. Repairs must not alter swift-friendly characteristics and priority will be given to projects likely to have the greatest conservation impact. The Chimney Swift Fund will cover up to 50% of project costs for successful applicants.



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Birds Canada is working to partner with municipalities and regional governments to improve site stewardship for swifts. Our goal is to be able to share information with municipal councils as a means of efficient public outreach and early detection of structures used by swifts. We want municipal councils to be aware of swifts and the importance of protecting the structures they use, and know what to do if those structures face alteration or demolition. —>

—> We want municipal councils to be aware of swifts and the importance of protecting the structures they use, and know what to do if those structures face alteration or demolition. We want to foster a sense of pride for hosting a threatened species, and have them lead by example as stewards of swift habitat. We offer to be a source of information for municipalities and property owners on best practices for hosting swifts and funding opportunities such as the Chimney Swift Fund.

As an example of a success story, one municipal council was able to flag existing Chimney Swift host properties we shared with them in a database so if property owners were to apply for permits for alteration or demolition that could impact swifts, it would alert the municipality that this is a known site. This flagging system would allow the municipality to connect us with property owners so we could share information and proceed with the best course of action. This project will improve awareness of these birds within communities and help Birds Canada build partnerships, locate new nest and roost sites, and protect existing sites to support these declining aerial insectivores. As this project grows, we hope to continue exchanging information and build relationships that benefit Chimney Swifts.

Birds Canada encourages stewardship of swifts. If you or someone you know hosts Chimney Swifts, please consider requesting a Swift Friendly Property sign so that we can recognize your stewardship ([You can help – landowners, managers, and educators | Birds Canada | Oiseaux Canada](#)). In addition, we can be a reliable source of Chimney Swift information and best practices, and make sure that you are up to date with Chimney Swift news! Other ways to help include joining Maritimes SwiftWatch and volunteering to monitor Chimney Swift roosts and help us locate nest structures. For more information, or to join Maritimes SwiftWatch, email marswifts@birdscanada.org, or visit birdscanada.org/swiftwatch.

Reaching out, so knowledge isn't out of reach; Why eco-outreach education and eco-science literacy is so much more than the pamphlets and posters

Lacey Lescaudron, Outreach and Education Coordinator, Clean Annapolis River Project

We all have our favorite pedagogologist, even if we don't really know what they study. Pedagogy, is the study of science communication, and it is something they don't always teach us in school. How many have sat for hours, glued to the tv watching Bill Nye, Steve Irwin, Sir David Attenborough or Chris and Martin Krat with their favorite leaping lemur Zaboomafoo? For many of us, these shows were the fundamental building blocks of our passion, inspiring many young people to become scientist. They fed our minds, inspired our souls, and armed us with the ability to drive our parents crazy with facts about Tasmanian devils to dinosaurs. Sadly, somewhere along the way, the passion that once excited us grew into serious science, and many of us have lost touch with our ability to communicate our science.



©Lacey Lescaudron

Much like the staff at a national historic site, we are the interpreters, the link between the natural world and our communities knowing and understanding the world around us. Eco-Outreach education and science communication is a vital part of CARP, whether it is teaching youth in the classroom, speaking at community meetings or simply building relationships with landowners and project funders. The ability to translate science into something that everyone, regardless of education level, or age, can understand, without oversimplifying the subject matter, can be a challenge that not everyone is able to meet.



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Most funding organizations are eager to see their efforts include outreach elements and citizen science. Yet many of us see outreach as necessary evil, often seen as a have to, rather than a want to. Causing outreach aspects of many projects fall to the wayside, not getting the same effort as the fieldwork receives. We are often inspired by the brilliant science communicators from our youth but struggle to pass along the passion and excitement that influence our dedication to the eco-sciences. By taking a moment and remembering what it felt like when we heard our first “crikey”, or the first time we heard Mrs. Frizzle say “Bus, do your stuff!” it gives us the chance to step back from GIS, the spreadsheets, and the board meeting reports to remember why we do what we do. By adjusting our outlook and embracing the outreach and educational aspects of our studies we are positively influencing the next generation of eco-scientists to look at science with passion and excitement. All the while helping our communities to understand the world around them and become better environmental stewards.

By engaging the public to get their hands dirty, partake in citizen science, use iNaturalist, and positively interact with the ecosystems around us, we can have a greater impact. We all must reach out, so knowledge isn't miss understood and out of reach for our future generations.

Recent Literature

Heading to the field and need some reading material? Keep up to date with fish and wildlife research publications from Atlantic Canada and beyond. Click on, or paste the DOI provided into your internet browser.

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Eastern red-backed salamander ,

Todd Pearson ©2009

Recent Literature *(continued)*

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Pink earth lichen, © J. Michael Raby

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Jumping worm in NB © CTV Atlantic, 2022

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