

EN edition — Vol. 50, No. 1 (June 2026)



Naturaliste du **NB** Naturalist



Special Issue: Community Science

Monarch Survey Efforts in NB | iNaturalist Canada | 30 Years of Point Lepreau Bird Observatory | Ways You Can Help



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Nature NB staff and members at the 2025
Festival of Nature in Miramichi.
Photo: Nature NB



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NB Naturalist
Le Naturaliste du N.-B.

ISSN 0047-9551

Canadian Publication Mail Product Sales
Agreement No. 487716.

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Published by volunteers and staff
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Cette publication est éditée par des
bénévoles et le personnel de Nature NB.
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NB Naturalist carries articles and
reports pertaining to the natural
history of New Brunswick. Articles are
invited in either English or French, and
will be translated in order to be published
bilingually. The opinions expressed are
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Vanessa Roy-McDougall
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Introduction to the Special Issue: Community Science in NB

There is something powerful about noticing. A first spring flower blooming beside the road. A monarch drifting over a coastal meadow. A flock of winter birds gathering at a feeder. A fish pulled from a lake carrying clues about ecosystem health. These moments may seem small and personal, but when shared, recorded, and combined, they become something much larger: knowledge.

This special issue of the *NB Naturalist* celebrates community science*—the idea that everyday people can make meaningful contributions to our understanding of the natural world. Across New Brunswick, volunteers, naturalists, students, birders, anglers, beach walkers, and curious neighbours are helping document the species and places that define our province. Their observations are informing research, guiding conservation decisions, and building long-term records that would be impossible to create through professional science alone.

Within these pages, you will read stories of dedication and discovery: decades of monitoring at the Point Lepreau Bird Observatory, the enduring legacy of the Christmas Bird Count, the growing impact

of iNaturalist, Monarch Butterfly and Piping Plover monitoring, and new research made possible through public participation. You will also see how community science strengthens more than datasets—it strengthens connection. It invites us outdoors, teaches us to observe closely, and reminds us that stewardship begins with paying attention.

At a time when biodiversity loss and climate change can feel overwhelming, community science offers something hopeful and practical: a way for anyone to contribute. You do not need a degree, expensive equipment, or decades of expertise to begin. You only need curiosity, care, and the willingness to look closely.

For fifty volumes, the *NB Naturalist* has shared stories of people who love this province's natural heritage. This issue continues that tradition by highlighting the many hands and eyes helping protect it today.

To everyone who submits sightings, counts birds, monitors beaches, photographs insects, or simply pauses to wonder—thank you. Science is stronger, and New Brunswick is better understood, because of you. 🌸



Left: In 2025, the province's first Research-Grade iNaturalist observation of the Marsh Blue Violet (*Viola cucullata*) was made by Dr. Kaushalya Rathnayake (May 16).

*Note that Nature NB has adopted "community science" as the official term within its programs, but throughout this issue and different publications, you might see it referred to as "citizen science" or even "participatory science".

How Community Science Informs our Work at Nature NB

Adam Cheeseman
Program Director
Nature NB

“Did you check iNaturalist?” It’s a common question around the Nature NB office that shows the value of community science in everyday nature conservation work.

In 2018, Nature NB began working on Monarch conservation as our clubs, notably the dedicated folks at the Saint John Naturalists’ Club, were initiating outreach, milkweed distribution, and tagging efforts.

As the project continues and evolves, we find ourselves turning to community science data often to inform our work. It was community science data that led us to documenting one of the first Monarch migration roosts in New Brunswick, the protection of milkweed patches in Fredericton from being mowed each year, and, more recently, the development of roadside native plant survey protocol.

Beyond the data, community science is about collective action – empowering New Brunswickers to contribute to environmental protection.

Our Protected Natural Areas Stewardship Program recruits community scientists to monitor protected areas; collecting data on threats to wildlife that could not be done by conservation organizations alone.

Over the years, stewards have identified invasive species, illegal dump sites, point source pollution sources, damaged trails, and more; all of which could have easily gone unnoticed.

Our Wele’k Pemjajika’q Sikniqt – Healthy Coast NB project has strong connections to community science, recognizing that nature is stronger when people have a platform to share their perspectives and help shape conservation work in their area. Community science has taught us to listen and learn, before we speak or act; a perspective which aims to empower and give space to different knowledge systems, perspectives, and values.

In many ways, nature clubs and their members have always been ‘community scientists’ – serving as eyes, ears, and, when needed, strong voices for nature in New Brunswick. Now, these leaders are joined by thousands of youth reached by our programs, participants at our action workshops, and the many others who contribute community science data in their backyards, on local trails, etc.

We invite you to read to learn more about the wonderful ways community science is helping celebrate, conserve, and protect nature right here in New Brunswick. 🍄

Adam surveying for Monarchs in 2024.
Photo from promotional video by the City of Fredericton.



Alain Patoine

*Professor of Environmental
Management at the
University of Moncton,
Shippagan Campus*

Botany, Phenology and Bird Biodiversity With Citizen Science in the Acadian Peninsula

Lucille Landry (1943–2026), a member of the Acadian Peninsula Naturalists' Club (CNPA) since the 1990s, has donated her herbarium to the Université de Moncton, Shippagan Campus. This donation will enable future generations of students, researchers, and naturalists to better understand the flora of the Acadian Peninsula as it existed during the 2000s and 2010s.

Her herbarium consists of 1,144 specimens representing 710 plant species across 97 families. This accounts for 43% of the species and 72% of the families found in the province of New Brunswick.

Lucille has trained many people in botany over the years. She also coordinated the “spring flowering” activity within the CNPA. This activity involves participating members noting the date of the first blooms of woody plants, shrubs, or trees as they go about their travels.

Originally recorded on paper forms, this data was recently compiled into a spreadsheet to identify long-term trends. Over a 17-year period (2005–2022), 48 members participated in the flowering observation effort. The years with the highest participation were 2006 (19 participants) and 2021. In total, 147 species were observed. The year 2006 saw the highest number of species (or genera) reported (115), followed by 2012 (66). Coltsfoot (*Tussilago farfara*, Asteraceae, Figure 1) and grey alder (*Alnus incana*, Betulaceae) stand out for their early flowering dates (April 14–23), while downy yellow violet (*Viola pubescens*, Violaceae) and Canada bunchberry (*Cornus canadensis*, Cornaceae) are the last to flower during the observation period (April–May, Figure 2).

Such data on flowering dates are not infallible. Indeed, they are influenced by the level of member participation, which can vary from year to year depending on weather conditions; there is likely greater observation effort in years with good weather than in years with rainy and cold springs. It is nevertheless possible to identify trends that would otherwise have gone unnoticed without the spontaneous and voluntary efforts of the members.

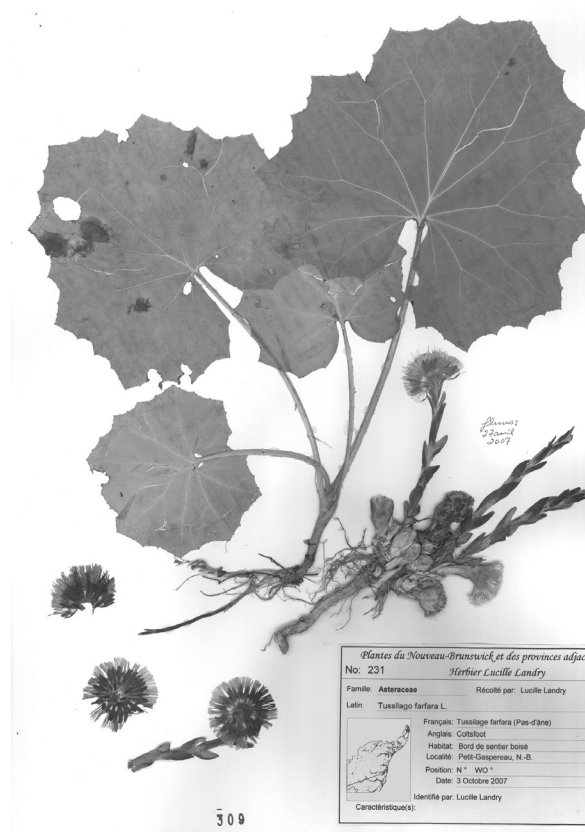


Figure 1. From Lucille Landry's herbarium, the coltsfoot (*Tussilago farfara*, Asteraceae), one of the first plants to bloom in spring on the Acadian Peninsula.

Photo: Herbier Lucille Landry

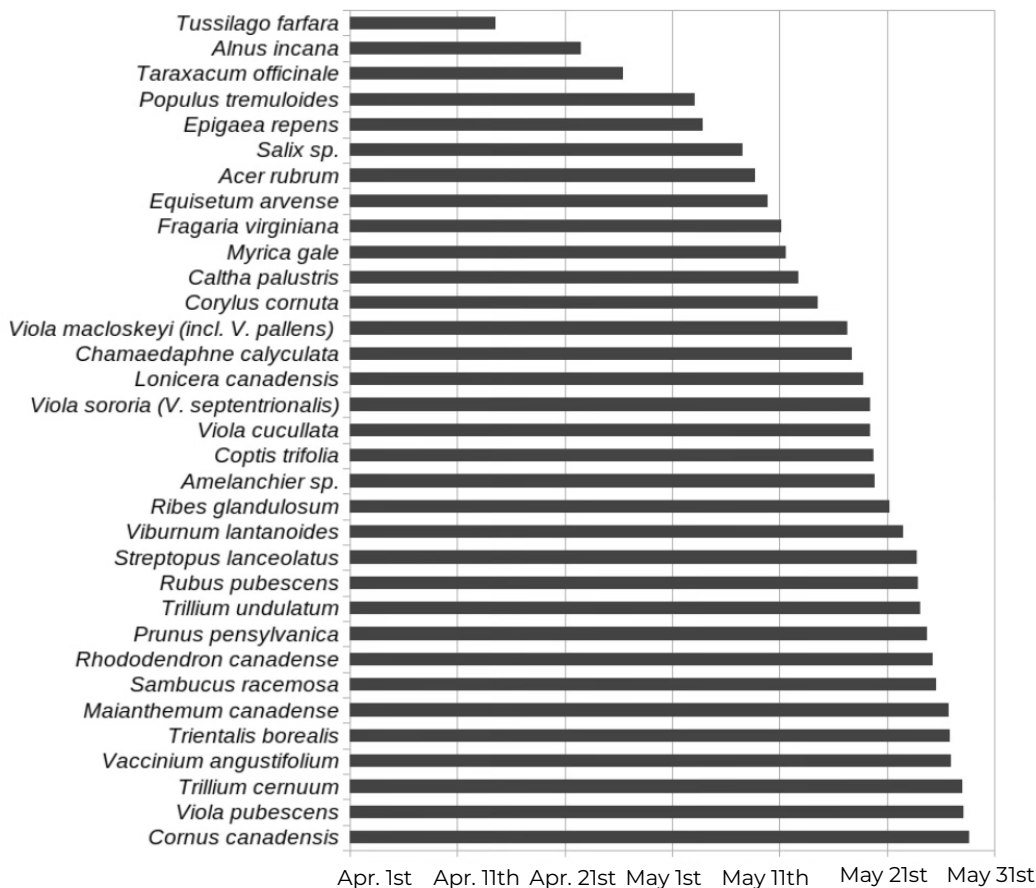


Figure 2.

Average flowering dates for species reported eight or more years between 2005 and 2022 (excluding 2014) by members of the Acadian Peninsula Naturalists' Club.

Birdwatching is another regular activity for CNPA members. Several members have been meticulously recording their bird sightings since the 1980s. As a result, some members have documented sightings of more than 300 bird species within the Acadian Peninsula alone. Other members systematically record “feeder birds,” i.e., birds that spontaneously come to feed around homes from October through May. The highest number of birds of a given species seen simultaneously in a single month by an observer is recorded. The maximum counts for a given species reported by each member are then tallied during monthly meetings. Here too, paper forms have been converted into electronic spreadsheets to enable quantitative analyses over a period of approximately 35 years (1989–2024). Preliminary analyses confirm

the impressions previously reported by several members, namely that years of high abundance for Redpolls (*Carduelis flammea*) are years of low abundance for the Goldfinch (*Carduelis tristis*) and vice versa. One might think that these inverse variations reflect a competitive relationship between the two species. This data will soon be compared with temperature and precipitation data to determine to what extent these annual variations in bird abundance can be explained by weather conditions.

Naturalists take the time to observe the flora and fauna around them and are happy to share their notes. Once compiled, their observations help identify long-term trends in the state of the environment and encourage more people to take an interest in nature and care for it.



Lisa Fauteux
Director, Verts Rivages
vertsrivages.ca

The Heartbeat of Post-Pandemic Citizen Science

Citizen science—also known as participatory science, or community science—refers to knowledge-generation initiatives in which non-professionals actively contribute. Individually or in groups, these citizens voluntarily participate in the collection and interpretation of data. Nature clubs are essential and living examples of this.

Throughout my scientific training, despite the deep fascination nature inspires in me, I never felt like a “real” naturalist. I admire those who can identify, name, and classify with rigor, archive observations, and return faithfully to the field. These qualities do not come naturally to me. Yet their presence reassures me. Why?

First, because these passionate individuals know their territory intimately: its treasures, its vulnerabilities, its cycles. Second, because they act as sentinels. Without their observations, certain warnings would go unnoticed.

Consider, for example, the monitoring of the Whimbrel, which has helped raise

awareness among blueberry farmers and improve coexistence. Finally, their consistent participation offers an antidote to our era marked by speed and transience. Their commitment anchors a lasting relationship with the living world.

The pandemic has weakened groups like Verts Rivages, but it has not broken their momentum. Today, requests for collaboration are picking up again, activities are resuming, and ties with the community are being rebuilt.

As the Nature NB Festival of Nature approaches in Shippagan, one question remains: will people show up? I hope so. Now more than ever, we must inspire wonder, train the next generation, and rebuild our connection to the natural world. As it is, our disconnection from nature affects our attention, our health, and our collective well-being. This is not just a scientific observation: it is a warning sign. It is time to slow down, observe, and above all, to share. 🌸



Birdwatching with Purpose through Volunteer Surveys

Lauren Verner
Project Coordinator
Nature NB

Gazing out over the foggy harbour of Saint John, I adjust my binoculars and focus in on a bird bobbing gently up and down in the slowly moving water. He's got his head turned away from me, preening his feathers and going through his normal morning routine.

Come on! Turn back to me already.

I wait patiently, keeping my eyes on the small dark-coloured seabird, waiting to catch a glimpse of a marking, a colour, a spot - anything to help me identify him. Even from this distance, he looks soft and fluffy, like the stuffed animals I had as a kid (okay, I still have them).

It's a chilly morning, and he looks warm and cozy despite the crisp air and the freezing water he's in. I pull my fuzzy scarf up over my face as the wind brushes past me, reminding me how incredible evolution is - shaping this seabird to thrive effortlessly in conditions that my human biology can barely endure.

Finally, the light hits him just right, and I see a flash of purple-green iridescence on its head. He slowly turns in the water to face me.

A ha! — A male Bufflehead. A bird I see quite often on my birding journeys around the port of Saint John, but nevertheless one of my favourites.

He's small but striking, with contrasting black and white feathers on its lower and upper body, and the beautiful iridescence on its head and neck feathers. The iridescence combined with a large white spot towards the back of his head confirms the ID. I quickly scan the surrounding waters to see if he's alone, and he is.

Hmm... Unusual for this type of bird.

With chilled hands I grab my clipboard and pen and scribble down 'BUFF', the four letter short-hand code for Bufflehead, then return my eyes to the water to see what this guy is up to. He's letting the current gently lead him further into the harbour, but he doesn't seem to mind.

What a peaceful existence. Truly just 'going with the flow', enjoying the morning sun and quiet sea.

I spend the next 30 minutes or so scanning the horizon and harbour, watching birds come and go quietly in the calm of the morning. By afternoon, this sea will be rougher and far less forgiving than it is now. I try to breathe in the calm and quiet of the morning and let it sink into my bones. I hope this feeling can stay.

After some time, the morning fog finally begins to dissipate, and there is a noticeable change in the air as the sun rises higher and higher in the sky. Many birds fly off to new sites to continue their day, and I supposed it's about time for me to do the same. I pack up my things and take one final look out to the sea, and it feels like the blue abyss is staring back at me, acknowledging our shared quiet moment of morning stillness before the busyness of the day begins. 

Have you ever dreamed of experiencing moments like this and contributing to science efforts in New Brunswick? Are you a birder in the Saint John or Chaleur regions?

You can reach out to info@naturenb.ca to join the Port of Saint John or Port of Belledune surveys, as we are always looking for volunteers.

This is also just one of the many community science projects you can contribute to in our province.

Go to naturenb.ca/community-science to learn more about what you can do.



Above: Male (left) and female (right) Buffleheads. *Photo : Brian Stone*

Left: Volunteers at the Petit-Rocher wharf for the Chaleur Seabird Survey. *Photo : Lauren Verner*

The Christmas Bird Count, North America's Longest-Running Citizen Science Project

The Christmas Bird Count is North America's longest-running citizen science project. It started on Christmas Day 1900 and at 9 am on that day, a New Brunswicker, William H. Moore, became Canada's first Christmas bird counter.

For the next 50 years, "CBCs" in New Brunswick were patchy and infrequent, only a dozen in all. But since 1956, there have been CBCs, sometimes more than 50 in a year, all over the province.

So, what is a Christmas Bird Count? It is a survey of bird life within a 24-kilometre diameter Count Circle. New circles are established from time to time and can be anywhere in the Americas as long as they do not overlap with another circle. Many circles in New Brunswick were established by local nature clubs and are surveyed year after year. Today, the Canadian portion of the program is managed by Birds Canada.

The circles are surveyed on a single day between December 14 and January 5, with the survey date for each circle being established by the volunteer compiler for the area. The compiler also coordinates coverage of the circle among participants so that birds are not double-counted. She or he then compiles the results from each group of participants and inputs the data to the database operated by Birds Canada and Audubon. This process was followed by almost 2700 compilers from 21 countries and territories in 2025.

Individual participants do as William Moore did when he stepped out of his Scotch Lake farmhouse in 1900. They record their time outdoors, the distance they cover and the weather. And they count birds. They count species but also the number of each species.

For about a thousand New Brunswickers, the CBC is part of their annual seasonal activities, a chance to get outdoors with friends and see what birds are around.

Every year there are surprises, but it's always surprising to me that during the coldest and darkest days of the year we find that more than 100,000 birds from over 100 species are sharing the province with us.

More than 40 of New Brunswick's Count Circles have been surveyed for 30 years or more. Seven circles have been doing surveys for at least 65 years. Areas like Mount Carleton in the boreal forest are surveyed regularly by just two people and have quite different results from an urban count like Fredericton which has different habitats and 75 to 100 participants. Both areas find very different birds than Ile Miscou or Grand Manan, but all four of these areas have been operating for more than five decades. With wintertime environmental data being scarce and half-century-long data sets even more scarce, the province's CBC data is unique.

Nature NB has supported the Christmas Bird Count since the organization started. It has promoted the CBC across the province and, importantly, has published CBC results continuously since 1969. The published results are all readily available through Nature NB's website. Until recently, 75% of these results had never been posted to Audubon and were locked into PDFs and Excel files, but they are now being brought to life in a searchable database. The almost 7 million birds that have been recorded to the end of 2025 are beginning to tell their stories.

Why not participate in the 2026 CBC? You only need to know one bird, our provincial bird which often has perfect attendance on all CBCs in the province – the Black-capped Chickadee. If you can find birds, you can be paired with someone who can identify them. And who knows, you just may be the one to find our seven millionth bird next CBC season. If you want to find a CBC Count Circle near you, go to Birds Canada's website around December 1. 



Left: Karl Branch searching for Canada Jays on the 2022 Southeast Upsalquitch CBC.
Photo : Rod O'Connell

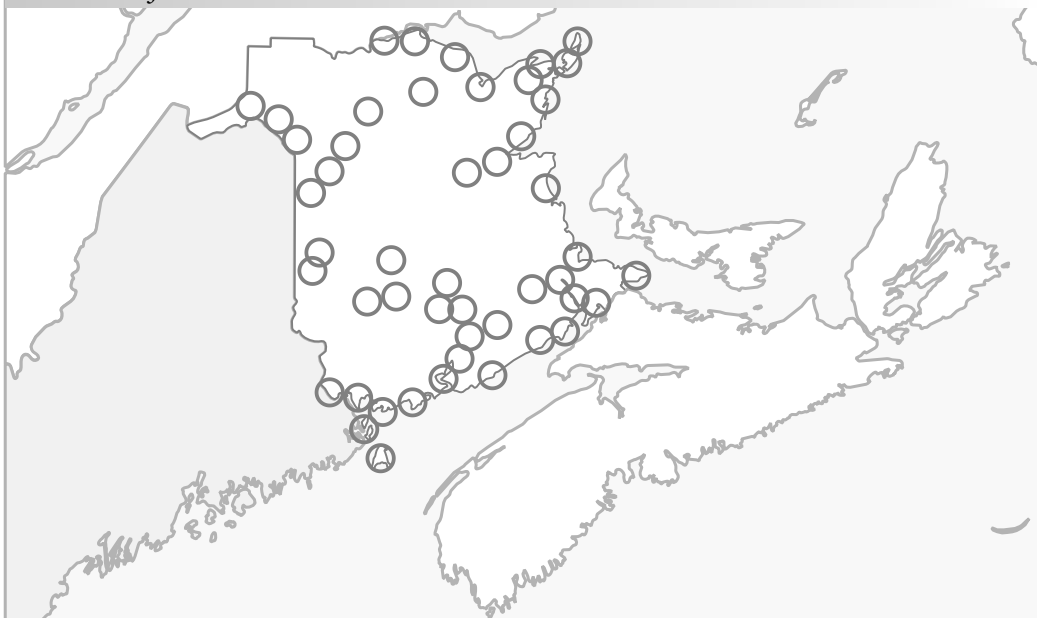
SCOTCH LAKE, YORK COUNTY, NEW BRUNSWICK

Time, 9 A. M. to 10 A. M. Clear; wind, west, light; temp., 32°.

Goshawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 1; Blue Jay, 2; Pine Grosbeak, 1; Brown Creeper, 2; White-breasted Nuthatch, 20; Chickadee, 6. Total, 9 species, 36 individuals.—WM. H. MOORE.

Above: Results from Canada's First Christmas Bird Count; *Bird Lore*, Vol III, 1901

Below: Map indicating the location of 48 New Brunswick CBCs. *Map made with CBC data from 2025*



Find a CBC near you at:
[birdscanada.org/
christmas-bird-count](https://birdscanada.org/christmas-bird-count)

James Pagé

*Canadian Wildlife
Federation (CWF);
founding lead and
administrator of
iNaturalist.ca*

iNaturalist Canada: Community Science in Action

Like nature itself, our ways of exploring and understanding it has evolved. But while natural evolution happens over millennia, our methods to study nature have advanced rapidly in a very short timeframe, and none more quickly than the digital technology we use. Even still, until quite recently advanced technology in science was reserved for highly trained specialists undertaking localized research. But now in Canada nearly everyone, from teenagers to golden-agers, has a technological tool and the knowledge on how to use it for conservation science and many of us don't even realize it. In the same way we use smartphones to connect and share about our daily lives we can also share and receive information that is valuable to understanding our natural world.

In the realm of biodiversity, community scientists (everyday people who contribute information for science) can fill data gaps that researchers could not accomplish on their own, largely because scientists can't be everywhere. A convenient and effective way to do this is by using the device that people carry around in their pocket already. One of fastest growing initiatives of this type in

Canada and beyond is iNaturalist which encompasses a simple but state of the art app, enabling people to work in concert with scientists amplifying our ability to observe, record and conserve wildlife. Beyond that, every photo or sound recording of a wild species uploaded using the iNaturalist app or online at iNaturalist.ca represents a moment in time where a person has stopped and taken the time to notice and connect with nature... and this has happened more than 22 million times in Canada!

Some people go to the iNaturalist app to instantly learn what species they're looking at by using the image recognition software. Others appreciate the feedback they get from real species experts who comment on and help identify their observation after it's uploaded to the database. While scientists and people curious to know what's been posted around them will check the map and species lists to explore and answer questions. Many of us fall into all these groups and most everyone on iNaturalist is keen to contribute biodiversity data that is used for meaningful conservation decision making and action.



Left: A 2025 entry of a Burrowing Owl, observed in 2017 by Paul B. Jones on Grand Manan, one of the few observations recorded in Atlantic Canada for this endangered bird mostly seen in the Prairies.

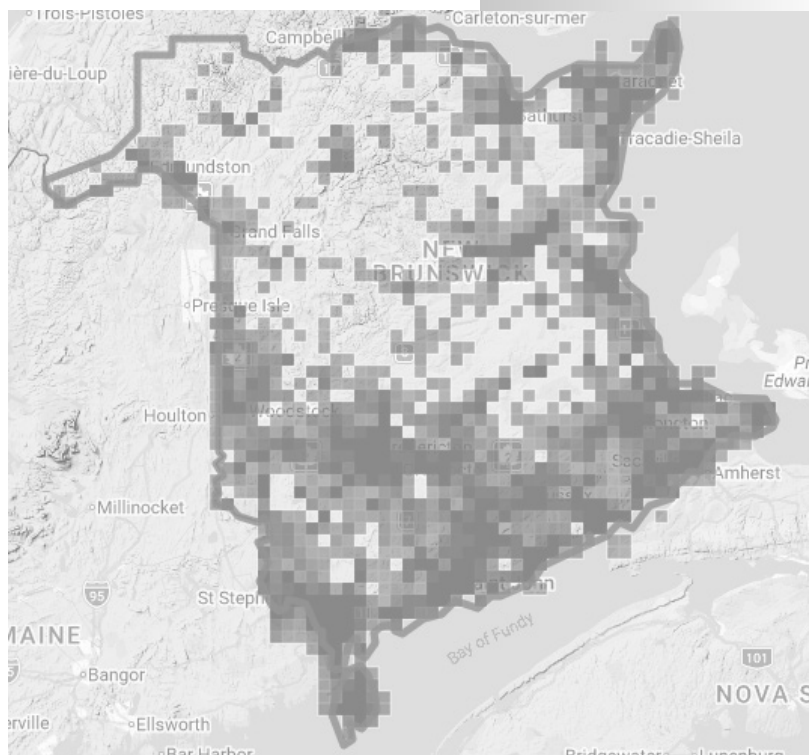
Photo: Paul B. Jones

While it may not feel like it every time we make an iNaturalist observation, each one is a key piece of information and may turn out to be more significant than we think. The Illinois tick-trefoil (*Desmodium illinoense*) was recently rediscovered in Canada, by someone who had assumed it was a more common plant (since this one hadn't been seen in Canada for more than 40 years) until an expert came across the observation and helped identify it. The Committee on the Status of Endangered Wildlife in Canada used this observation and those of other species at risk to undertake their assessments which lead to the legal listing on the federal Species at Risk Act. iNaturalist houses nearly 450,000 observations of species at risk in Canada, with over 8,000 observations in New Brunswick alone.

There are also 900 species in Canada (49 of which are in New Brunswick) that, as of last June, had only one observation in all of iNaturalist, anywhere, which is incredible given there are more than half a million species recorded in iNaturalist around the world. Thanks to the community, some of these have been found a few more times. Speaking of firsts, iNaturalist contains what is believed to be the first photograph evidence of the Comet Darner dragonfly in the Maritimes and the first (among only a few) observations of the endangered Burrowing Owl in Atlantic Canada.

The observations of rare and common species are key to painting a mosaic of the biodiversity found within Canadian cities, on rugged coastlines, in rural areas and deep wilderness. This data has been and continues to be used for key projects like Key Biodiversity Areas mapping, providing important information for land preserves like those of the Nature Trust of New Brunswick and provide knowledge to the public as the primary data source for the federal Wild Species Report. And all it takes to be a part of it is to get outside and snap a photo or record an animal call. Happy iNatting. 🌱

Below: iNaturalist's New Brunswick observations from April 1st 2025 to April 1st 2026.
Photo: iNaturalist.ca



Above: The first Comet Darner was seen in the Maritimes before... but Denis Doucet was the first to have photo evidence of an observation here, for a species much more common in the southern states. Photo : Denis Doucet

Jim Wilson

The Point Lepreau Bird Observatory – 30 Years and Still Counting

Point Lepreau Bird Observatory (PLBO) turned 30 in 2025. From the founder of the project himself, learn all about how this Saint John Naturalists Club initiative came to be and why it's so important for scientific research in this province.



Background

In April of 1995 two birders, David McCurdy and Jim Wilson, stood at the tip of Point Lepreau and watched hundreds of sea ducks – Common Eiders, all three scoter species, Long-tailed Ducks and a number of others, stream past the tip of the Point and continue on their way up the Bay, headed to....somewhere.

In the background an empty oil supertanker loomed high on the horizon on its way from the Irving refinery in Saint John to somewhere else. These disparate travelers, moving in opposite directions on entirely different missions, framed a specter of potential disaster if ever there were an oil spill in the Bay.

The two of us were struck by the fact that no one would have any idea how many birds or what species could be adversely affected or when this spectacular annual migration begins and ends. But clearly a major spill or a series of smaller ones could create a wildlife disaster of significant proportions.

That realization sparked the creation of the

Point Lepreau Bird Observatory (PLBO), a project of the Saint John Naturalists' Club (SJNC), formed in 1995 to count and catalogue the skeins of birds that pass through the Bay of Fundy each spring and fall. The Project recently completed its 30th consecutive year of monitoring sea duck and seabird migration.

What began as a simple effort to anticipate an oil spill has gradually evolved into a long-term data capture project aimed at evaluating the population trends of various waterbird species passing along the East Coast every year. And with it came an understanding of why so many birds are observed from the tip of Point Lepreau each spring.

Strategic Location

Point Lepreau is best known to the public as the site of Atlantic Canada's only nuclear generating facility, owned and operated by NB Power at the base of the Point since the early 1980s. But the location offers much more as it's the most prominent finger of land along New Brunswick's mainland coast, protruding over three kilometers into



Right page: Inside PLBO.
Photo : Mitch Doucet
Left page: A flock of Black Scoters, one of the many migrants who pass by PLBO.
Photo: SJNC

the Bay, and providing a unique geographical location to observe marine activity.

Millions of waterbirds spend their winter months at sea within sight of land and spread out along a vast ribbon of ocean stretching from Maine to Florida and the Gulf Coast and a large proportion of them breed in remote areas of the Eastern Arctic each summer. As the days of spring lengthen these birds begin to move north in flocks, following the Eastern Seaboard until many of them near the yawning mouth of the Bay of Fundy which appears to act as a giant funnel as the birds continue their journey.

Migrating waterbirds tend to fly relatively close to the water surface and focus their trajectory toward the next headland ahead. So Point Lepreau, projecting prominently, tends to attract northbound migrants that make a beeline for its tip, then adjust their flight path toward the next promontory. It's theoretically possible that the majority of Eastern North America's wintering sea ducks and seabirds fly relatively close to the tip of Point Lepreau and the Point Lepreau Bird Observatory on their way to more northerly nesting areas.

Critical Partners

Creating and operating a bird observatory adjacent a nuclear generating station is not easy. It has required a high degree of cooperation and coordination with two critical partners.

NB Power owns most of the Point's land mass and appropriately, must adhere to strict security protocols at all times. Therefore each PLBO

volunteer is rigorously screened before being granted access and permission to be on the site. Security officials at NB Power have granted security clearance to more than 300 volunteers over the 30-year life of the project, although volunteer annual involvement averages 30-40 individuals. The project could never have evolved successfully without the initial and continued strong support of NB Power's nuclear management team.

Canada's Department of Fisheries and Oceans (DFO) owns the land at the tip of the Point where its lighthouses have stood since the 1830s. DFO has granted a license to the Saint John Naturalists' Club to have its observatory building located there on an ongoing basis, a second essential component of the project's success.

Financial and Other Support

Annual funding support, accessed through grants from the Canadian Wildlife Service and a variety of other sources (NB Wildlife Trust Fund, NB Environmental Trust Fund, Ducks Unlimited Canada, Baillie Fund, Sea Duck Joint Venture and Nature Canada) has enabled the project to contract up to two Official Counters to lead daily spring migration counts since 1999. There is one four-hour count each morning and a similar count each afternoon. Each Official Counter can be assisted by up to three volunteers.



(continued from page 14)

Methodology and Numbers

Over the past 30 years the Point Lepreau Observatory project has amassed a significant database of spring migration data that is now published online by Environment and Climate Change Canada (ECCC) through its open data portal, providing important research information for use by scientists and other interested parties, worldwide. The PLBO migration counting protocol (Hussell and Ralph, 1998), used since the beginning of the project, was provided through a collaboration with Birds Canada and the Canadian Wildlife Service. The protocol is designed to measure trends in species' populations, but not to estimate those populations.

The protocol for a four-hour migration count is 15 minutes of counting and identifying birds by species, followed by a rest period of 15 minutes. This is repeated seven times during a four-hour count, resulting in two hours of actual counting each morning and again each afternoon on most days. A few high-volume days have recorded bird passage at more than 8,000 an hour which is exceptional, but total birds counted over the life of the project is approaching 1,700,000! Imagine the total volume of bird life that must pass each spring.

Southward migration through the Bay of Fundy in fall is barely a trickle compared to that in spring.

It's believed this is because the adult birds and their young are scattered across the vastness of the Eastern Arctic and make their autumn flights to the East Coast directly without the funneling effect seen in spring. Despite this, a few migration counts are done by volunteers each fall to collect data that can be compared with the spring.

Project Significance

New Brunswick is incredibly fortunate to have this ideal geographic location for monitoring marine bird migration with the support of its two landowners. Point Lepreau is situated north of the wintering area and south of the summer breeding

region of most of these birds and their annual spring migration brings them right past the observatory's doorstep.

It's now generally recognized that a migration monitoring strategy that adheres to consistent count methods, uses consistent counters and conducts counts from the same strategic geographical location over an extended period, is the most cost-effective way to gather research-quality information on sea ducks and seabirds that's impossible to acquire otherwise. This makes the Point Lepreau project an extremely valuable citizen science effort that we hope will continue for many decades to come. 🌸



Volunteers with the Saint John Naturalist Club Monitor OE Infection Rates in Monarchs

Ophryocystis elektroscirrha (OE) is a protozoan parasite that infects monarch butterflies (*Danaus plexippus*). It is present in all monarch populations [1, 2]. Monarchs infected with OE are less likely to survive their larval stage, have more fragile wings as adults, and have shorter lifespans [1]. OE can be transferred between mothers and their offspring, between adults during close contact and mating [3], and when a caterpillar consumes spores shed onto a milkweed plant by an infected butterfly [4]. Monarchs at the very northern edge of their migratory range, including New Brunswick (NB), experience lower OE infection rates, demonstrating the importance of conserving monarch habitat in these regions [5].

The OE lifecycle begins when a caterpillar ingests spores. The spores release cells that migrate through the gut wall to the tissues that later become the scales of the adult butterfly [1, 6]. As the monarch metamorphoses, the OE cells produce millions of spores that emerge on the adult scales, enabling external transmission [6, 7]. The presence of OE spores also hinders the process by which pupae inflate their wings with fluid, altering wing structure and density [8], and potentially contributing to the reduced migration success of infected Monarchs [3].

Volunteers with the Saint John Naturalist Club (SJNC) have been monitoring the presence of OE on migratory monarchs at Point Lepreau since 2021, as part of their work on the Monarch Watch Tagging Program (Fig 1B). As one of the most southern locations in the province, Point Lepreau is an important funnel-point for migrating monarchs. The volunteers measure, tag, and rerelease monarchs to track their migration patterns. Spores are difficult to see by the naked eye, so to diagnose an OE infection, a piece of tape is pressed against

the abdomen of a monarch, and then applied to a piece of white paper and viewed under 30-40x magnification. The OE spores look like vanilla bean seeds between the monarch scales (Fig. 2A). We also examined spores provided by the Canadian Wildlife Service at much higher magnification using scanning electron microscopy (Fig. 2B). At this scale, they are similar in size and shape to a red blood cell: ~10 μm in diameter, oval, and concave on one side.

We digitized and analyzed the SJNC's monarch data for 2023 and 2024 to get an idea of how our monarch population is faring. Of 98 monarchs tested in 2023, 2% carried external spores, and of 324 tested in 2024, 9% carried spores. Reassuringly, these rates are lower than those observed elsewhere in the monarch range, e.g. $\geq 20\%$ at the end of the breeding season in some years in the Eastern US [3]. There were other differences, too. Whereas in other parts of the range, females experience greater infection intensities than males [9], and the higher infection severity of females has been suggested as a possible cause of male-biased sex ratios among migrating monarchs [10], we did not see a sex difference in infection probability in NB. Similarly, infected monarchs tend to be smaller than uninfected individuals in other areas [1], with a larger mass effect in females [9], but in NB, we did not see any association between infection status and size in males or females. Symptoms of infection can vary with the severity of the infection. Overall, the data collected by SJNC suggest that OE infection loads in NB are not very high, which reinforces the importance of northern regions for monarchs.

Situated at the northern limit of the monarch butterfly's range, conservation work in NB may be important to conserving the species in the face of OE and other threats.



Figure 1A:

A female monarch drinks nectar from a goldenrod at Point Lepreau NB, preparing for its migration south.

Photo: Hannah Dickinson



Figure 1B:

Jean Wilson, a volunteer with the Saint John Naturalist's Club, measures wing length of a monarch at the Point Lepreau lookout.

Photo: Hugh Hartloper

Infected monarchs struggle to reach this far north, and those infected here struggle to return to their overwintering grounds to engage in horizontal transmission of the parasite. Those healthy enough to make it to NB reduce their exposure to heavily contaminated southern regions. It is therefore important that we maintain habitat to support monarch populations. Planting milkweed is an excellent step: the more milkweed available, the more that monarch egg-laying is spread out between multiple plants, which can help limit OE contamination of individual plants [3]. We can also support monarchs, as well as other pollinators, by planting and conserving native wildflowers to provide nectar. Finally, ongoing efforts of groups like the SJNC are critical to monitoring and maintaining the health of monarchs in our region. 🍀

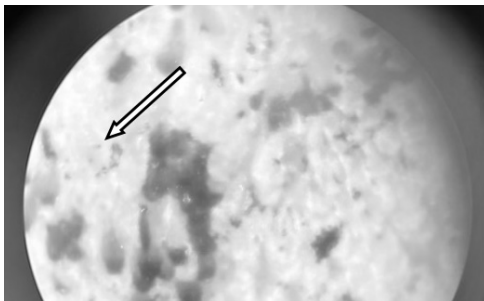


Figure 2A: SJNC volunteers screen butterflies for OE spores by pressing abdominal scales to tape and examining under a hand lens. The small, small, peppery specks in this image (arrow) are OE spores, the larger semi-circles are scales. Photo: Mattea Hansen

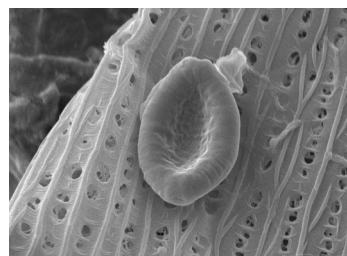


Figure 2B: Scanning electron micrograph showing an OE spore on a Monarch butterfly scale at 4000x.

Photo: Jim Ehrman

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Adam Cheeseman and
Samuel LeGresley
Nature NB

The Monarch Stewardship Cycle at Nature NB and how you can help

Each year, Nature NB works with community scientists to monitor the Monarch Butterfly, restore habitat, and raise awareness about pollinators. Our work follows the natural cycles of this iconic species' life history right here in New Brunswick and has been informed by years of dedicated efforts from staff and volunteers.

Late Fall

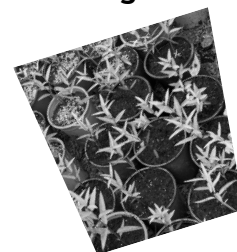
As the weather cools, native plants go to seed. Goldenrods, asters, milkweed, and countless other species produce lots of seeds, some of which are collected by our volunteers, nature club members and our staff. Late blooming plants are critical to the Monarch's journey through New Brunswick in the fall as it migrates south. This last food source fuels their migration south.

Winter

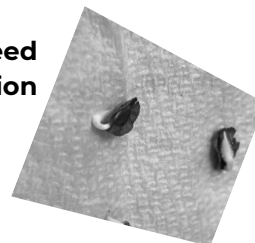
Seeds that have been collected and stored are planted in the winter months during public events and in our own backyards. Winter sowing is an incredibly rewarding gardening technique that helps work with the cold weather to break seed dormancy. Seedlings emerge in the late winter/early spring and are transplanted into larger pots for our pollinator garden projects and outreach events. We are also working with our Seed Sitters Club and staff to establish native plant seed orchards across New Brunswick to help increase the availability of native plant seeds to everyday New Brunswickers.

The Monarch cycle at Nature NB (reads clockwise)

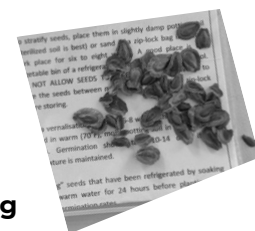
Milkweed Planting



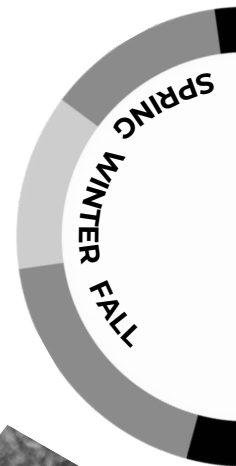
Milkweed Germination



Seed packaging and sowing



Milkweed Seed harvest



Spring

The arrival of spring comes with the emergence of milkweed, a plant key to the Monarch life cycle. Monarchs lay eggs exclusively on milkweed, which provides food for caterpillars. Once fully developed in the summer, caterpillars will leave the milkweed to form a chrysalis and emerge as the beautiful adult butterfly we all know and love. Spring is a time of renewal with Nature NB visiting community organizations, municipalities, schools, and others to host milkweed planting workshops, seedlings

are transplanted, and new pollinator gardens are established. In late spring, the first adult Monarchs start flying in from the south – making way for our busiest season of all!

Summer

With the first adults arriving and laying eggs on milkweed, Nature NB and our partners coordinate public bioblitzes – where volunteers scour thousands of milkweed stems across Southern NB documenting eggs, caterpillars, chrysalises and adults. This data feeds into a tri-national database (Canada, US, Mexico) to better understand how this endangered species is doing across the continent. As the summer progresses, the ‘super generation’ is born – a large, more rigid Monarch that is prepared for one of the most incredible journeys of all. A

flight from New Brunswick to Mexico for overwintering. Nature NB, the Saint John Naturalists’ Club, and our volunteers carefully document the migration at key places like Point Lepreau and Grand Manan by tagging butterflies and looking to identify roosts where they are spending evenings resting before continuing their flight.

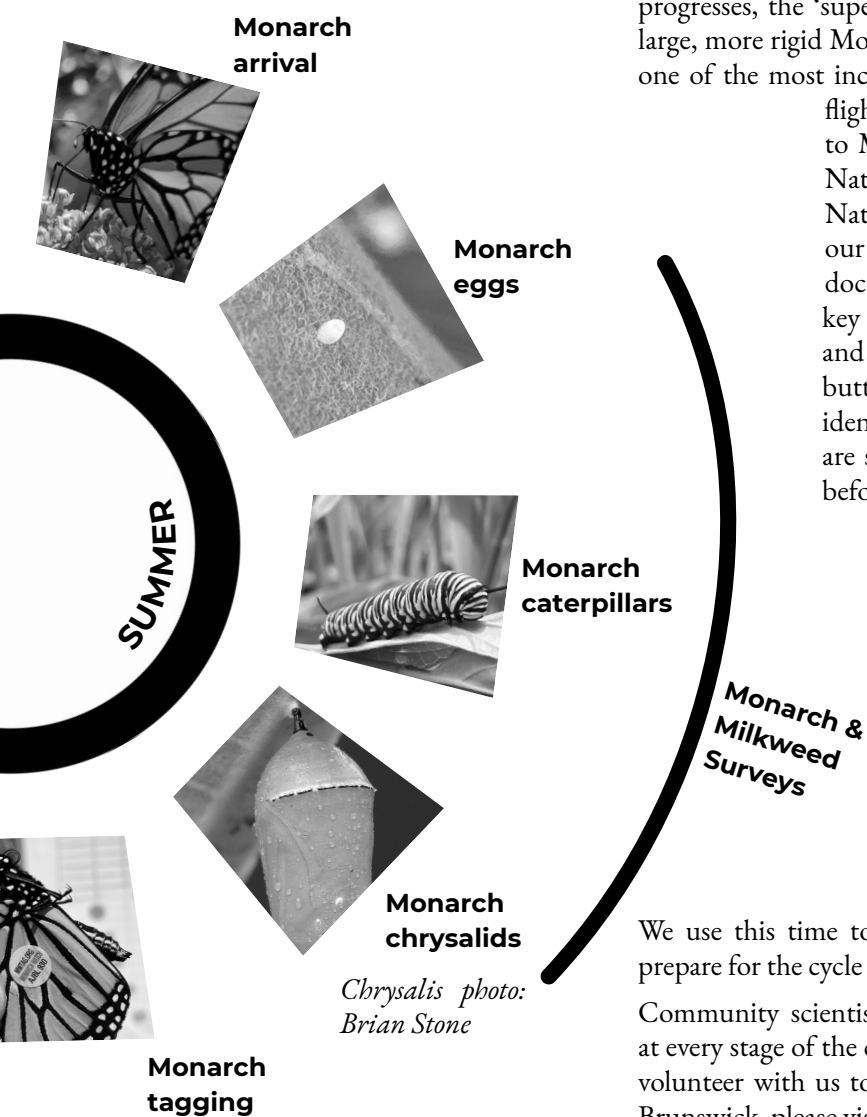
Early Fall

As the summer draws to a close, asters & goldenrod once again offer the last nectar sources for the year as Monarchs depart New Brunswick for the high-elevation forests of Mexico.

We use this time to reflect on the year and prepare for the cycle to start once again.

Community scientists are key to our efforts at every stage of the cycle. If you would like to volunteer with us to help Monarchs in New Brunswick, please visit :

naturenb.ca/monarchs.



*Chrysalis photo:
Brian Stone*



Nature NB Staff
*With additional data from
Saint John Naturalists Club*

Keeping An Eye on Monarchs in New Brunswick: Reflecting on our Collective Efforts since 2006

The Saint John Naturalists Club has been tagging Monarchs for 20 years now. And since 2021, Nature NB has been following suit by regularly hosting public bioblitzes through Mission Monarch across Southern New Brunswick. These events work with local partners, community groups, volunteers, and other community scientists to survey native milkweed patches. Volunteers of all ages scour plants for eggs, caterpillars, chrysalids, all while keeping an eye in the air and in the leaves for butterflies who may be visiting the milkweed patch to lay more eggs.

The table below summarizes the results of our survey efforts over the years. Without the support of volunteer community scientists across the region, little of this work would have been possible:

Mission Monarch 2021-2025 at Nature NB

# of Nature NB and partner led bioblitzes	70+
# of participants at bioblitzes	437
# of Monarchs observed at all life stages during bioblitzes	4990
# of milkweed stems surveyed	35,086

As the summer progresses, monitoring efforts turn to deploying paper tags through a program called Monarch Watch where the Saint John Naturalists' Club (SJNC), Nature NB, and others carefully capture, tag, and release Monarch. These tagged Monarchs continue their migration where Mexican staff and volunteers record any observed tags. The SJNC has been a leader in deploying Monarch tags since 2006, tagging over 5227 individuals, with two tag recoveries reported through the program down south.

Monarchs tagged at the Point Lepreau Bird Observatory (2006-2025) by the SJNC (From Jim Wilson's 2025 report)

2006	75	2016	73
2007	150	2017	199
2008	144	2018	938 *
2009	9	2019	995 *
2010	44	2020	259
2011	17	2021	460 *
2012	200	2022	497 *
2013	0	2023	97
2014	74	2024	349 *
2015	7	2025	640

*In those years, some of the Monarchs were tagged after being raised in captivity.

In 2026, we will be piloting a new tagging technology - the BlūMorpho+ tag. These tags will be placed onto the back of migrating Monarchs in New Brunswick. This exciting new technology allows Motus wildlife towers to help track tagged Monarchs, as well as most cell phones, provided Bluetooth and location services are enabled. This development will allow us, for the first time, to see the path that Monarchs take to their wintering ground in Mexico and then back to the southern United States in the early spring.

This brings a whole new dimension to community science, meaning you'll be able to contribute to Monarch conservation without even knowing it! 🌸

For more information on our programs, please contact info@naturenb.ca.



Top: A Monarch Blitz hosted by Nature NB in Dieppe revealed caterpillars.

Middle-left: A paper-tagged Monarch on thistle. *Photo: Bev England*

Middle-right: Monarch tagged at Long Point Bird Observatory by Birds Canada using BlūMorpho+. *Photo: Samuel Perfect*

Bottom: Catching Monarchs at Point Lepreau Bird Observatory. *Photo: SJNC*



Newly Recorded Tapeworms Infecting Fishes of NB and the Need for Citizen Science

Parasites are organisms that live on or inside of a host organism; the host suffers some level of harm and the parasite benefits (Loker & Hofkin 2015). Parasitism is a common symbiotic lifestyle, and parasites are present in every kingdom of life in many shapes and sizes. Almost all plants and animals are hosts to one or more parasitic organisms. The study of parasites and their hosts is known as parasitology, and the study of parasitic worms specifically is termed helminthology. Parasitic worms belong to a group of parasites called “helminths”, which includes the nematodes (roundworms), trematodes (flukes), and cestodes (tapeworms). Helminths can be ectoparasites specialized to live on the outside of their host, or endoparasites which live inside of their host. To the average person the word “tapeworm” evokes many emotions, mostly those of disgust and repulsion. As odd and admittedly disturbing as tapeworms are, they are fascinating, nonetheless. Not only do tapeworms rob their host of nutrients; some species also modulate their host’s behavior, immune system, and reproductive fitness. Fish are no strangers to helminth infections, with an estimated 30,000 helminth species infecting fish worldwide (Jyrwa et al. 2016)!

I was given the opportunity to dive into the field of helminthology after several tapeworms retrieved from fish in New Brunswick (NB) were sent to Parasitologist Dr. Michael Duffy (UNBF) and passed along to me for identification. Species level identification of tapeworms is difficult, especially during their larval stages. Tapeworms have few distinctive morphological features, and some species infect multiple host fish, so host identity cannot be used for specific cestode identification. Species level identification is further complicated by

the fact that many tapeworms are yet to be discovered and named!

Tapeworms were collected from fish from two separate locations in New Brunswick (Fraser et al. 2023). The first set was retrieved in 2017 from Slimy sculpin in northern New Brunswick, during unrelated investigations on the impacts of forest management on fish health (White 2020, Negrazis et al. 2022). The second set was collected in 2021, following liberation from their host during a fish survey in southern New Brunswick. More of these tapeworms were retrieved from Blacknose dace at the same location in 2022. Upon comparison of the northern and southern parasite specimens two morphological features were obvious; the worms from northern New Brunswick were segmented and relatively short (Figure 1); and the worms from southern New Brunswick were unsegmented and relatively long (Figure 2). Given these morphological differences, I knew that I was dealing with two separate parasite species. I proceeded by collecting a small piece of tissue from the tip of each worm and extracting DNA. Upon comparing the DNA to that of all the known tapeworms available in a large genetic sequence database (GenBank), I made two discoveries:

1. The worms from northern New Brunswick have 89-92% identity with tapeworms of the *Schistocephalus* genus, indicating that these worms likely belong to the *Schistocephalus* genus, but are potentially a new species.
2. The worms from southern New Brunswick have >99% identity with the tapeworm *Ligula intestinalis*, which enabled definitive species identification of this parasite. *Ligula intestinalis* had not been recorded previously in New Brunswick.

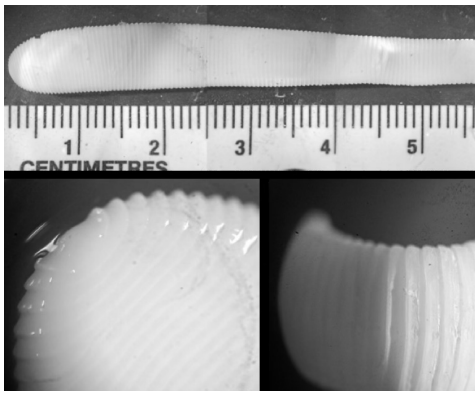


Figure 1. Segmented tapeworms retrieved from Slimy sculpin hosts in northern New Brunswick in 2017. Specimens were collected by Dr. Michelle Gray and her research team. Photo: Megan Fraser

Schistocephalus species are typically regarded as specialists to the Threespine and Ninespine stickleback, but the worms from northern New Brunswick were found in Slimy sculpin. It appears that an undocumented host switch and speciation event may have occurred in the *Schistocephalus* genus, giving rise to the worms found in the Slimy sculpin from northern New Brunswick. This is potentially a new species, and a very interesting scientific discovery!

The lack of previous records of *L. intestinalis* in New Brunswick is noteworthy. My recent identification raises the question of whether this tapeworm was recently introduced, or if it has been present for many years without being identified. *Ligula intestinalis* has three hosts during its life cycle (Arme & Owen 1968, Szalai et al. 1989, Loot et al. 2002, Biswas & Ash 2021). It reproduces in the intestine of a fish-

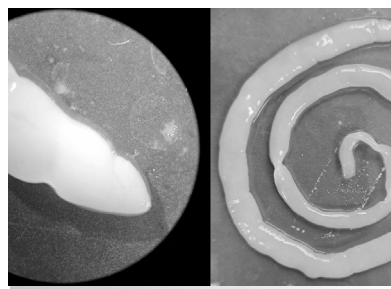


Figure 2. Unsegmented tapeworms retrieved from a southern New Brunswick Lake in 2022. Photo: Megan Fraser

eating bird, and eggs pass with the bird's faeces into a body of freshwater. Eggs hatch before being eaten by tiny crustaceans known as "copepods". Infected copepods are eaten by fish, infected fish are eaten by birds, and the life cycle repeats. *Ligula intestinalis* worms can become very large, growing up to 100 cm in length (Yoneva et al. 2015)! Recent introduction of *L. intestinalis* to New Brunswick is possible given the highly mobile nature of the bird host. However, it is also possible that *L. intestinalis* had not been identified in New Brunswick due to a lack of research focus on cestodes. This question remains to be answered.

Ligula intestinalis can "parasitically castrate" its host fish. In other words, the infection severely limits

the ability of infected fish to reproduce. This castration effect is reported in many European fish species including chub, roach, rudd, bream, minnow, and dace; however, this is not well studied in North American fish populations. Infected fish can present with little-to-no gonadal growth, less prominent spawning tubercles, significantly lower levels of sex hormones, and may exhibit abnormal behavior during their spawning period (Orr 1966, Arme & Owen 1968, Carter et al. 2005, Hecker & Karbe 2005, Schabuss et al. 2005, Trubiroha et al. 2009, Trubiroha et al. 2010). The mechanism that causes castration of the fish host is unknown; however, it is speculated that a protein or other molecule actively secreted by the parasite may be responsible! In the laboratory, my next steps will involve collecting secretions from these tapeworms and identifying the major secreted molecules. Identifying these molecules will hopefully bring us a step closer to better understanding the mechanisms that lead to parasitic castration of their fish host.

I aim to determine the geographic range of *L. intestinalis* by monitoring wild fish populations in New Brunswick; is this parasite restricted to southern New Brunswick lakes, or does it occur throughout the province? Knowing the geographic range is important given the potential negative implications of *L. intestinalis* infection on host reproduction, especially in threatened fish populations. This is where I decided that a citizen science initiative would be helpful! Recreational fishermen often find tapeworms in wild caught fish. By engaging the public, I hope to have recreational fishers retain tapeworms that they find so that I may collect them for identification. If any specimens match with *L. intestinalis*, this will provide valuable insight into the parasite's range across New Brunswick and the species of fish that can act as hosts. Please contact Megan Fraser (email: mfrase12@unb.ca) if you find tapeworms while fishing, and specimen pick-up will be arranged!

Informed by citizen science contributions, I will survey several lakes across New



Figure 3. Blacknose dace infected with *L. intestinalis* found in a southern New Brunswick lake. Photos: Megan Fraser (right) and Erika Ouellette (left).

(continued from page 24)

Figure 4. (Right) A fyke net, one of several methods used to collect near-shore fish during survey efforts in search of *L. intestinalis*. Photo: Megan Fraser.

Brunswick to further answer questions regarding parasite range, permissive fish hosts, and seasonal trends in the prevalence of infection. Morphological indicators of infection such as abdominal swelling (Figure 3) or tapeworms erupting from the vent (the opening where eggs, sperm, and waste leave the fish) will help me select fish to sample. This study will contribute valuable information to the field of parasitology in New Brunswick, and to parasitological work involving *Ligula intestinalis* worldwide.

Project Updates (2026)

Seeing the potential for expansion of this research project, in 2024 I transferred my studies from the MSc to PhD program. Since 2023, I have incorporated a citizen science initiative into my research to aid in the collection of *Ligula intestinalis* cestodes across New Brunswick. This approach to data collection engaged recreational anglers through social media posts, infographic posters, and communications through local news organizations. Contributions from recreational anglers have included photographs of parasite infected fishes and several preserved tapeworm specimens. I have also communicated this project to several aquatic science research organizations and have collaborated to utilize fish specimens collected for alternate research purposes. Data collected through citizen science and research collaborations presented several leads on where I might find *L. intestinalis* in NB, informing my selection of 13 lakes across NB where I initiated ongoing host fish surveys in 2024 (Figure 4).

I have confirmed one preserved tapeworm specimen sent to me by a recreational angler as *Ligula intestinalis*. I have also identified *L. intestinalis* cestodes in fishes from three NB river systems, collected by collaborating researchers. Through my own survey



Figure 5. (Below) *Ligula intestinalis* tapeworms infecting fish from several NB lakes, collected during 2025 survey efforts. Photos: Megan Fraser



efforts, I have confirmed the presence of *L. intestinalis* in several NB lakes, two of which being lakes where recreational anglers had photographed cestode infected fishes. These findings have confirmed that the geographic range of this parasite extends throughout much of our province and is not restricted to southern NB where its initial discovery was made. In addition to the Blacknose dace (the original host fish reported in NB), my efforts have identified several other host fish species in NB (Figure 5).

This project has benefited greatly from the citizen science contributions of recreational anglers. This collaborative approach to data collection has helped overcome logistical constraints such as time, funding, and manpower required to complete this broad geographic survey. Citizen science represents a powerful approach to data collection for my study, which integrates the diverse knowledge and perspectives of the public into my systematic research methods, and has led to a more comprehensive survey for the parasite *L. intestinalis* in New Brunswick. I believe the successes of this project speak to the power of collaboration and community engagement in research. 🌸

Acknowledgements:

I thank Dr. Michelle Gray, Ben Andrews, and Sarah Van De Reep for collecting the original tapeworms for identification. Without their interest and curiosity, I would not be involved in this important research project. I thank my PhD Supervisory Committee, Dr. Michael Duffy, Dr. Shawn MacLellan, and Dr. Tillmann Benfey for their advice and guidance. I thank Kerstyn Dobbs, Erika Ouellette, Nhu Trieu, Tyler Lynn, Sarah Cusack, Jackson Green, Andrew Smith, Angel Kramer, Jorja Donovan, and the UNB Marine Block classes of 2024/2025 for their assistance in the laboratory; and Sarah Van De Reep, Becky Graham, Sara Plant, Allain Cassie, and John Robinson from Parks Canada for their assistance in the field. I would also like to thank my research collaborators who have generously shared their specimens (Mike Rushton- Greater Kouchibouguac Watershed Association, and Kerstyn Dobbs-Duffy lab), and all recreational anglers who have submitted photographs and tapeworm specimens. Lastly, I thank all funders who have supported this project financially: the New Brunswick Wildlife Trust Fund, the New Brunswick Innovation Foundation, the Dr. William S. Lewis Doctoral Fellowship Award, and the University of New Brunswick Fredericton.

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Counting on Piping Plovers on the Acadian Peninsula

It was May 10th, 1993. It was sunny, but cold.

We had already been walking and listening for at least 30 minutes, nothing. The icy sea wind kicked up the sand, making it even harder to see. Remains of sea ice were spotted here and there. Maybe we were too early... We have been counting Piping Plovers on the Acadian Peninsula of New Brunswick since 1988. We know that Piping Plovers can live up to 15 years and frequently return to the same area, to nest, often with the same mate. They are small ghost-like birds that can easily blend into the sand. They can also throw their voice, a vocal illusion used to confuse predators, which makes them even harder to spot. The name Piping, or in French, *siffleur*, the whistling plover, refers to their 'peep-lo' whistle-like call, pitched and gentle.

We continued walking, looking, and listening for another half hour, and still nothing. We scanned the flat, non-vegetated portions of the beach. Piping Plovers prefer to nest on the upper part of the beach, above the average high tide line for protection of their eggs from the tides. Breaches in the dunes help fill that criteria. Their nests look like cobbles on a beach and are extreme examples of camouflage, making them difficult to spot for even expert observers. Our excitement built, as we neared the spot where they nested last year. If they were actively nesting, we might have been able to spot a plover feigning a broken wing to lure us (or predators) away from young or a nest. However, at this time of year, they would more likely be on a sandflat, or on a mudflat, feeding and refueling after their long migration.

Piping Plovers were once plentiful in North America over a hundred years ago. As European settlements increased, people took to shooting all kinds of birds,

including shorebirds, for food, amusement, and fashion (feathers in hats). Some bird populations, including the Piping Plover, almost became extinct. However, after the international Migratory Bird Treaty Act was passed between Canada and the United States in 1918, it became illegal to hunt shorebirds. Most populations rebounded successfully, except for the Boreal (historically known as Eskimo) Curlew, a large, long-billed shorebird, that never recovered. Piping Plover populations initially recovered, but then declined again when beach recreation became popular in the 1960s. This more recent decline was primarily due to human disturbances near nests and chicks, causing negative effects on the Piping Plover's survival. Today, Piping Plovers are listed as an endangered species under the federal Species at Risk Act.

As we walked, I thought about the various intensive conservation efforts that have helped slow the species' decline over the past several decades. It begs the question, are plovers worth the effort to save them from extinction? A beach user once asked me: 'How valuable is one species? Shouldn't we put that money into curing cancer, instead of trying to save a small bird?'. While the ecosystem likely wouldn't collapse right after the species disappears, small changes to the ecosystem could have larger negative consequences later. If we let one species go extinct, what's to say that others won't follow? Piping Plovers are critical barometers for the health of our coasts as they are interconnecting with other stages of the food web, feeding on small marine creatures. If the ecosystem is not healthy, plovers can't survive. If the plovers are doing well, then we know that the ecosystem is healthy. Since they have nested on Canadian beaches long before Europeans arrived, they have an intrinsic value. Over millennia they have adapted to live in what might

seem a harsh climate to other species. All these thoughts swirled in my head, as we continued walking the beach. What if we don't find any plovers this year?

As we continued on, we found numerous all-terrain vehicle (ATV) tracks on the beach. Educating ATV users why we should not drive on beaches helps protect plover eggs and young from being crushed.

Driving over Marram Grass (dune grass, *Ammophila breviligulata*) kills it, resulting in increased erosion and the inland movement of sand. Frequent ATV traffic can also compact the sand making it harder for shorebirds to probe for small creatures in the sand. Protecting plovers also helps maintain beach biodiversity. Beaches are surprisingly rich in biodiversity.

Finally we heard something. Through the rough blowing noise of the wind, we heard a soft whistling sound. Wait - there in front of us - did I see a flash of white fading into the sand? There, down by the sandflat, not one but two Piping Plovers were feeding. Yeah! They had returned for another year!

Today, we continue to count on plovers to tell us more about the health of our coasts. 🌸

Roland Chiasson and Sabine Dietz monitored Piping Plovers and carried out conservation education in elementary schools across the Acadian Peninsula from 1988 to 2003. It was called the Piper Project / Projet Siffleur. In 2004, Lewnanny Richardson took over the program. Today the project continues under the umbrella of Nature NB and is now called the Species at Risk Program / Programme des espèces en péril.

For more information about Piping Plovers:

Nature NB Species at Risk Program:
www.naturenb.ca/species-at-risk/

Wele'k Pemjajika'q Sikniqt/Healthy Coasts NB:
coasts.naturenb.ca

Piping Plover Conservation Program:
www.birdscanada.org/bird-science/piping-plover



Left: A Piping Plover nest in Northern New Brunswick.

Bottom: An adult Piping Plover. *Photos by Lewnanny Richardson*



A few decades later, time for the first NB Beach Report Card!

This spring of 2026, we published a resource on the Healthy Coasts Website compiling our data from the past 5 years into an accessible web map.

For 41 beach sites, each report card summarizes information on threats, beachgoer stewardship and nesting Piping Plovers over a five-year period from 2020 to 2024. Surveys of sites identified as critical habitat for Piping Plover, conducted by Nature NB and Birds Canada, provide data for the report cards.

The goal of the NB Beach Report Card is to assess the health of beaches that endangered Piping Plover and other species-at-risk, like Bank Swallow, need for their survival.

Beach report cards can be used to identify sites where conservation efforts are working and where stewardship actions may need to be done.

We invite you to explore results and reach out at info@naturenb.ca with questions or to get involved in our work. 🌸

Nature NB Staff



Visit the Beach Report Card at the Healthy Coasts NB website:
coasts.naturenb.ca/nb-beach-report-card

Migratory bird sightings and coastal litter reports can greatly inform our work to protect our coastlines. To submit a form after your trip, visit naturenb.ca/act

50 seasonal actions you can take to connect with nature

Nature NB Staff

	ACTION	LOCATION
EVERY SEASON	1. Start to list all birds you've seen, or add a bird to the existing life list	Anywhere!
	2. Take your sketchbook and make it your own DIY nature guide	Anywhere!
	3. Take a waste bag with you when you visit the shore	Beach, riverside
	4. Start a 4-season recurring nature journal	Anywhere! You can pick the same spots to return.
	5. Visit a national or provincial park	See Parks New Brunswick and Parks Canada
	6. Watch a webinar made by a nature club	naturenb.ca/experience-nature
	7. Go to a nature club's website and find out about their events	naturenb.ca/nature-clubs
	8. Take up hiking, running, or biking on your local trail system	Trails in your area
	9. Start learning about and cultivating native plants	Your personal / community-owned garden
	10. Camp in a Dark Sky Preserve and look at the night sky	List of Dark Sky Preserves: rascnb.ca/dark-skies/
	11. Take a moment to notice shapes and patterns in the clouds	Anywhere outside or by a window
	12. Learn about the Traditional Ecological Knowledge of your region	Indigenous literature and community resources
	13. Attend a Pow-wow / support Indigenous art	See local Indigenous communities for events
	14. Adopt a sit-spot, a place where you return to observe nature	A peaceful place in a natural area
	15. Argue with a squirrel	A nearby branch or birdfeeder
	16. Take children in your family to an outdoor learning adventure	Any area with interesting animals, plants, etc.
	17. Plant a garden (Pollinator or edible)	Your yard or a community lot
	18. Turn over a rock, a log or a pile of leaves to find what's living there	Anywhere!
	19. Go to the "Nature" section of your local bookstore or library	Any place selling or lending books
	20. Help connect a school to an environmental organization	Your community
	21. Learn how invasive species impact the local ecology	Your neighbourhood
SPRING	22. Look up close for first signs of buds opening or catkins drooping	Any tree
	23. Pick up the garbage left after snowmelt	Your neighborhood or nearby beach/riverbank
	24. Find mining bee nest holes in the ground	A place with exposed earth
	25. Document spring flowers by date of appearance	Nearby woodlot or park
	26. Participate in wildflower walks with your local club	See local club page for details about walks
	27. Take a listen to the spring peepers	Vernal pools and wetlands
	28. Be the first observer of a species for the year	Filter by your current year on iNaturalist
	29. Document the migration timing of different bird species	Local birding hotspot
	30. Before the leaves, observe warblers as you hear them	In a local treed area
	31. Take part in a community garden	Your local community garden
SUMMER	32. Observe the change in calling frog species with the seasons	Your local wetland
	33. Take part in volunteer fieldwork with your local ENGO	Check your local NGO's website
	34. Try out a summer Nature Walk with a club	See local club page for details about walks
	35. Swim in a river or a lake	A water body (check theswimguide.org before)
	36. Look at the aquatic life present on the beach/river and record it	Beach, riverside
	37. Record the Monarchs on your milkweed or at a Monitoring Blitz	Southern New Brunswick
	38. Volunteer as a steward for your local protected area	PNA, nature preserve, volunteer-run park or trail
	39. Go look for wild berries (Never eat what you don't know!)	A local place with berry shrubs
FALL	40. Document fall migratory birds	Local bird observatory or local birding hotspot
	41. Visit an apple / pear orchard or find wild apples	A current or abandoned orchard
	42. Go on an early fall mushroom walk after rain to look at the variety	Nearby woodlot or park
	43. Try to identify a flowering Goldenrod or Aster by the species	A native plant meadow
	44. Find out if trees had a mast year (lots of seeds vs previous year)	A treed area
WINTER	45. Bring a winter tree bud field guide with you when snowshoeing	Snow-filled woodland
	46. Participate in the Christmas Bird Count	Your local count circle
	47. Watch the early night sky at winter solstice	A place far from bright lights
	48. Identify animal tracks in the snow	A snowy place
	49. Find a tree with leaves still attached (marcescence)	A place with the right tree species
	50. Look for sundogs or halos around the moon/sun	Anywhere!



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The Meduxnekeag River
in Western NB, during the
Festival of Nature in 2024

Education - Conservation - Protection



Nature NB is a provincial charitable organization working toward the conservation and protection of and education about our natural heritage. It collaborates and networks with other organizations and provides exceptional educational programs, many of which are directed toward educating youth about nature – sowing seeds of awareness, curiosity and appreciation designed to last a lifetime. Our magazine, which is available in hard copy and digital, provides broad information about nature in New Brunswick.

Information about Nature NB: www.naturenb.ca
Becoming a Member: www.naturenb.ca/membership
Donations: www.naturenb.ca/donate

Éducation - Conservation - Protection

Nature NB est un organisme provincial de bienfaisance qui œuvre pour la conservation et la protection de la nature ainsi que sur l'éducation concernant notre patrimoine naturel. L'organisme collabore et travaille avec d'autres organismes, fournit des programmes d'éducation exceptionnels dont la plupart sont destinés aux jeunes – en espérant susciter un éveil, une curiosité et une appréciation de la nature qui dureront toutes leurs vies. Notre revue offre une variété d'articles sur le patrimoine naturel du Nouveau-Brunswick.



Information sur Nature NB: www.naturenb.ca/fr
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