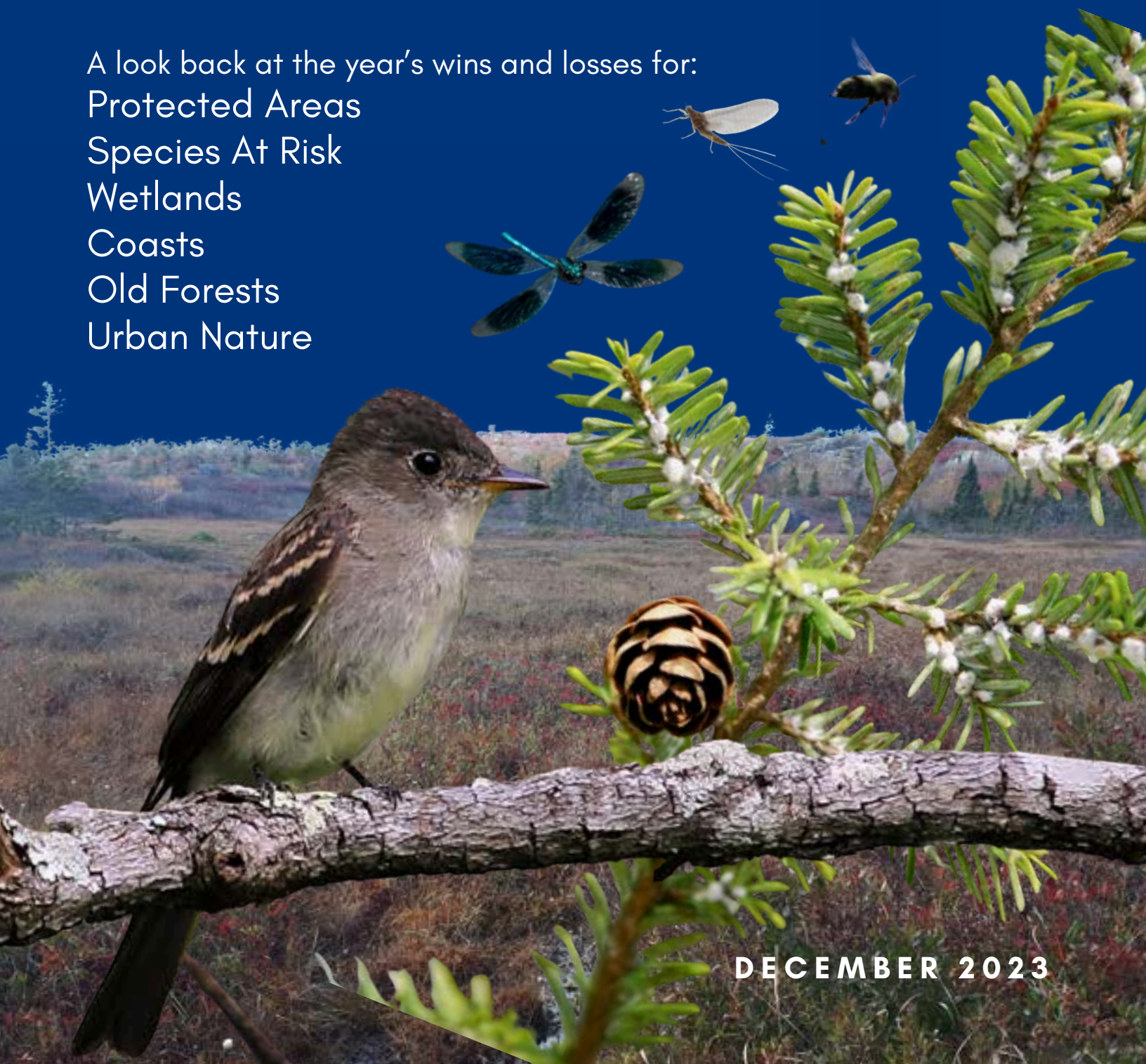
STATE OF NATURE 2023

CITIZENS MOBILIZE TO MAKE CHANGE

A look back at the year's wins and losses for:

Protected Areas
Species At Risk
Wetlands
Coasts
Old Forests
Urban Nature



DECEMBER 2023

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A WORD FROM OUR PRESIDENT

Fire, drought, high winds – Nova Scotians felt the affects of climate change in 2023. Banding together on behalf of nature, Nature Nova Scotia now has 26 groups advocating for positive change, while skewed economics and government priorities relentlessly trash healthy environments and the services they provide.

In 2023, Nature Nova Scotia initiated a Hemlock Woolly Adelgid fund to help keep alive ecologically-important Eastern Hemlock trees on privately-owned lands. We pushed for more protected areas as part of the 20% by 2030 provincial government commitment. After the Owls Head debacle, we fought an attempt to convert West Mabou Provincial Park into a golf course and are pressuring government to update the Provincial Parks Act. Mainland moose are facing more habitat losses, being displaced by forestry, gold and wind developments. We continue to work with the public to change this tragic reality. Assisted by Ecojustice, Nature Nova Scotia and East Coast Environmental Law took the federal government to court for loosening its own habitat laws. Wetlands remain under heavy assault by developers and a complicit government that secretly loosened their wetland interpretation of the Environment Act to permit more developments.

We have continued to engage new citizens and generations of Nova Scotians in nature activities, as you will read. I'd like to extend my gratitude to Becky Parker, Jess Lewis, Juli Bishwokarma, and Lindsay Lee for their hard work in this regard. Lastly, special thanks to our funders, our board of directors, and our volunteers, donors, and supporters. Your help is greatly appreciated!

BOB BANCROFT

President, Nature Nova Scotia

Mike Lancaster of the St. Margaret's Bay Stewardship Association and Healthy Forest Coalition discusses forest ecology and the need for protect significant forests like those in the Ingram River, on a hike with Nature Nova Scotia. Photo by NatureNS Conservation Programs Coordinator Jess Lewis.

MAKING ROOM FOR NATURE

NEW PROTECTED AREAS DESIGNATED ACROSS NOVA SCOTIA

Becky Parker, NatureNS Executive Director, with insights into the Provincial Parks Act from Lindsay Lee, Parks Act Project Coordinator

In response to the UN Convention on Biodiversity call for expanded global protected areas, Canada has committed to establish new terrestrial and marine protected areas totalling 30% of Canada's land and waters by 2030. For Nova Scotia's part, with protected areas planning limited by the fact that most of the province's landmass is held by private owners, the provincial government has committed to increasing protected areas to just 20% in the same time.

In the 2022 State of Nature Report, we outlined our concern that a lack of planning could delay meaningful protection for Nova Scotia's most at risk wild spaces. Later that year, we criticized government for releasing only a short online consultation for the new Collaborative Protected Areas Strategy and being slow to designate the parcels already identified in the current Parks and Protected Areas Plan. We also criticized the new Old Growth Forest Policy, which protects old forests within and outside of protected areas, for adopting few recommendations from the scientific and conservation community and falling short of meaningful old forest protection.

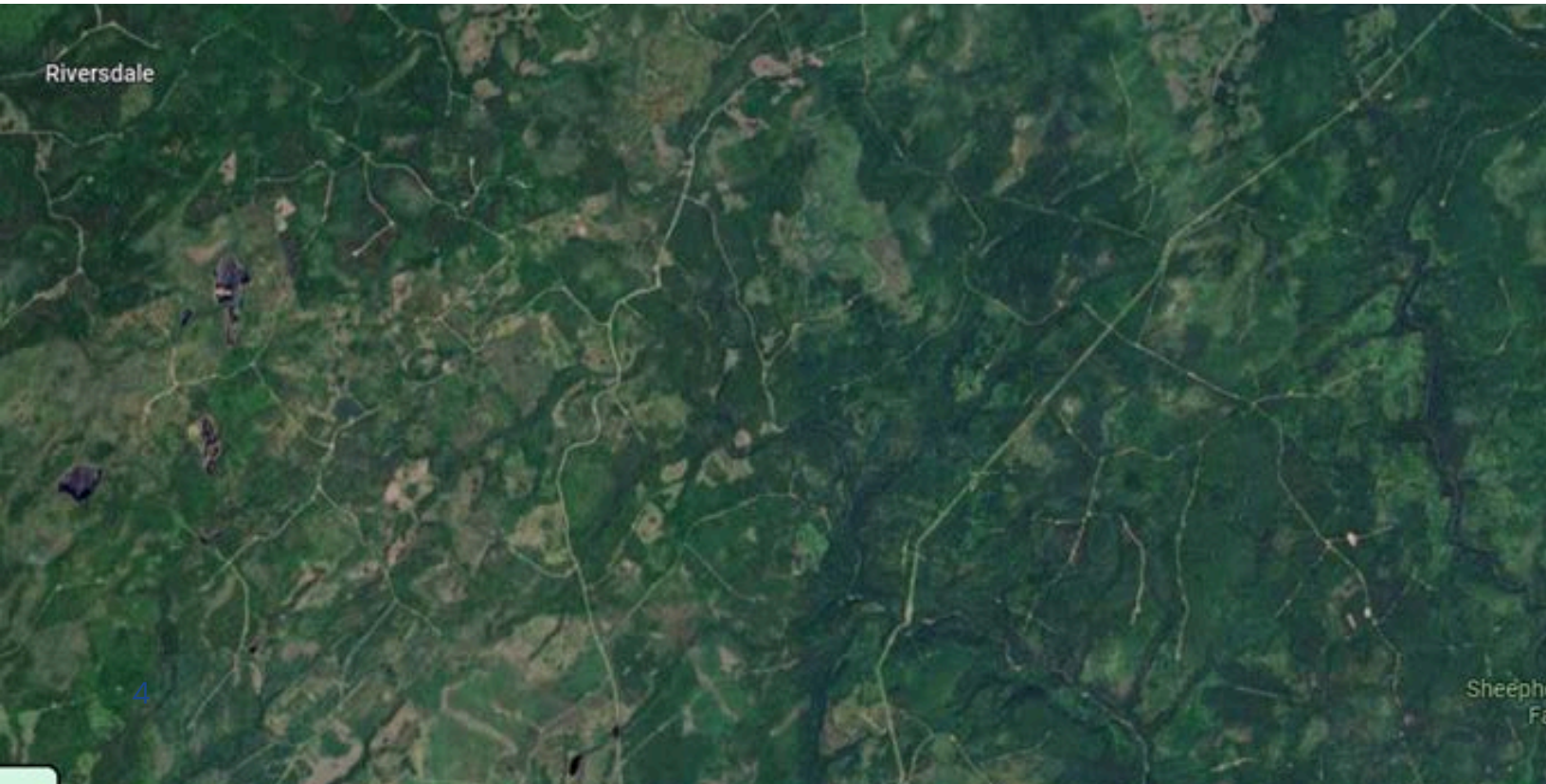
Still, the province achieved some wins for nature in 2023, by continuing to fund private land conservation initiatives, protecting lands in Southwest Nova Scotia against the hemlock woolly adelgid, furthering work on the national urban park plan for Blue Mountain-Birch Cove Lakes in Halifax, signing the new Canada-Nova Scotia Nature Agreement, and designating a few new protected areas across the province.

Thanks to support from both the province and private donors, the Nova Scotia Nature Trust was able to protect lands adjacent to Owls Head on the Eastern Shore, in Pleasant River near Kejimkujik National Park and Historic Site, and on the St. Mary's River. The Nature Conservancy of Canada extended protection of coastal lands in the Prospect area, created new protected lands near the Haley Lake and Sable River Migratory Bird

Sanctuaries, protecting migratory birds and rare lichens, and expanded lands in Cains Mountain, protecting rare gypsum-associated wildlife. In Unama'ki, the province and Unama'ki Institute of Natural Resources signed an agreement to share governance of Kluscap Wilderness Area, a 2777 ha expanse of pine, hemlock, spruce, and fir forests dotted with wetlands, barrachois ponds, and a rocky coast that contains Kluscap's Cave, a sacred Mi'kmaq site also known to settler locals as the Fairy Hole. In April, after significant public mobilizing, Natural Resources and Renewables Minister Tory Rushton announced that the province would no longer consider the controversial golf course development at West Mabou Beach on Cape Breton's western shore.

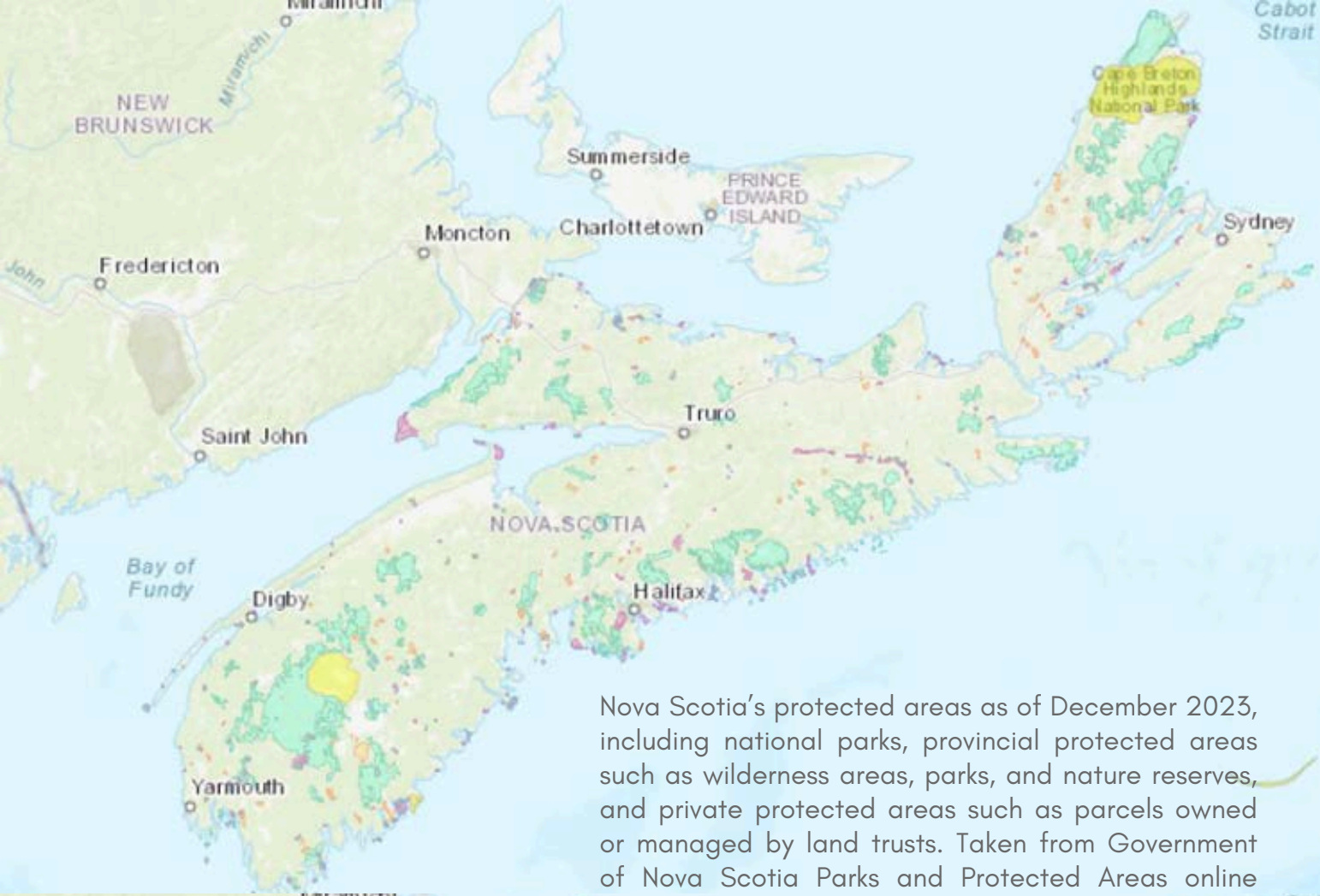
The province signed the new Canada-Nova Scotia Nature Agreement in October, committing Nova Scotia to increasing protected areas by at least 82,500 ha by March 2026. Achieving this interim goal should result in the province reaching nearly 15% total land protection. Acting on this new promise and the previous commitment to reach 20% protected lands by 2030 through the Environmental Goals and Climate Change Reduction Act (EGCCRA), in December, the province announced five new wilderness areas and nine new nature reserves for protection, bringing total protected land in Nova Scotia to 13.5% The new Collaborative Protected Areas Strategy was released at the same time.

The proposed Upper Stewiacke Wilderness Area. Extensive clearcuts can be seen throughout the private lands to the west of the pending protected area, which is also under active management with many logging roads. Image from Google, map data 2023.

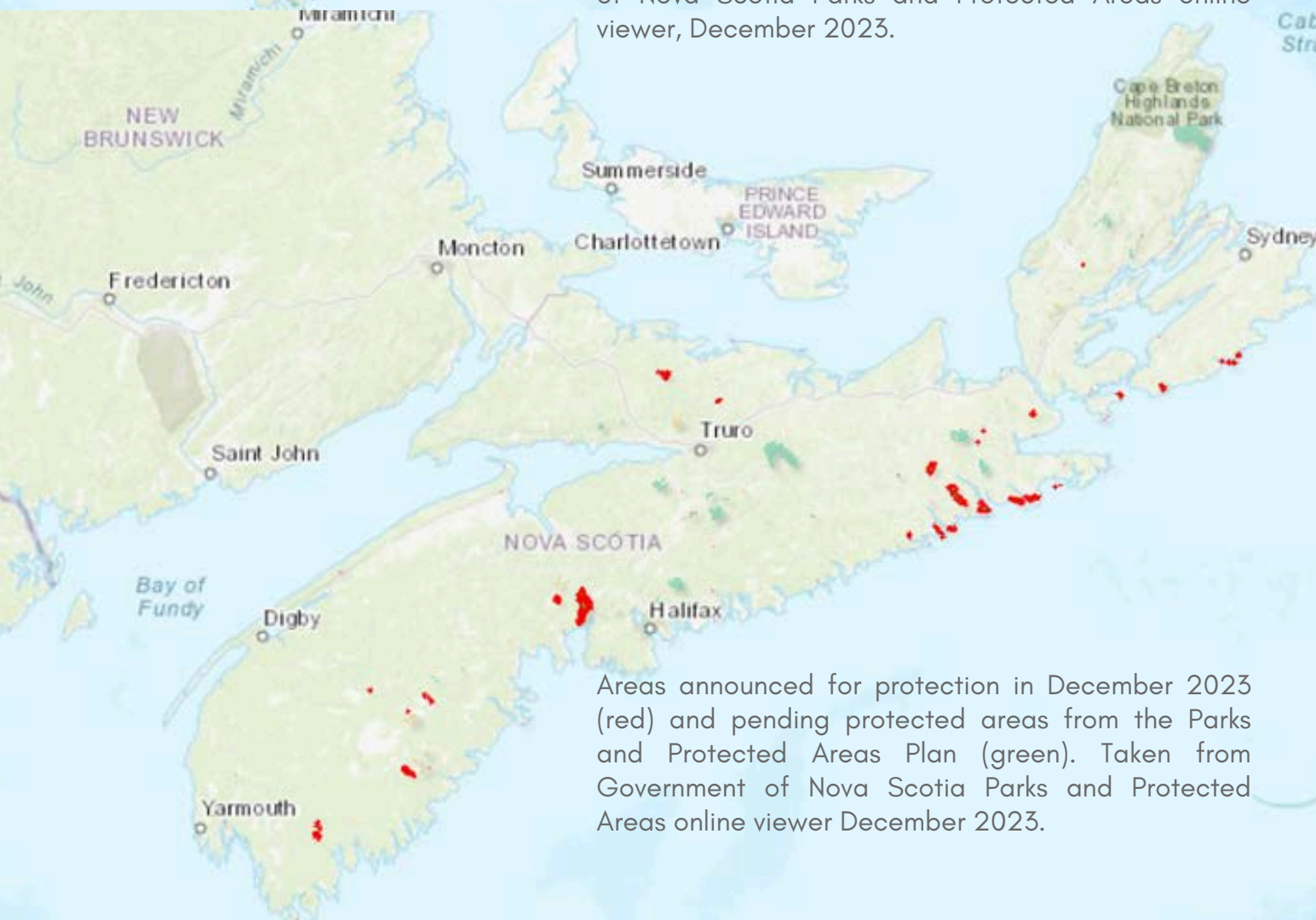


In other areas, government missed opportunities to protect wildlife and essential green spaces. At the provincial level, many sites included in the decade-old Parks and Protected Areas Plan are still awaiting legal designation. A large addition to the Waverly-Salmon River Long Lake Wilderness Area near Porters Lake is pending protection, while the land surrounding it is dramatically changing due to intensive forestry operations. Five Mile River Wilderness Area, pending parcels between Five Mile River and South Maitland, is already fragmented by logging roads, as is the pending Upper Stewiacke Wilderness Area. In the Annapolis Valley, volunteers with the Blomidon Naturalists Society have advocated for the protection of vulnerable forests near the existing Cloud Lake Wilderness Area, without meaningful action from government at the time of report writing.

Municipal governments had fewer tools to contribute to provincial or federal protected areas goals in 2023. Due to amendments made by the province to Halifax's charter in 2022, several advisory committees were stripped of their ability to provide expert and public consultation to new planning projects in Nova Scotia's largest city. For the city's part, no structural changes were made in 2023 that could have given the committees new purpose or roles, leaving planning decisions within the municipality without this meaningful public process. Sandy Lake Regional Park, a collection of parcels at the edge of urban Halifax that support old growth forest, several species at risk, and clean freshwater lakes, was fast-tracked for development after the province's Task Force on Housing decided the area should be included as a Special Planning Area, despite its unique features and inclusion in the Halifax Green Network Plan. Development has moved forward at Eisner Cove wetland in Dartmouth, another Special Planning Area, despite strong local opposition. A controversial RV park development progressed on private land adjacent to Cherry Hill Beach in Lunenburg County, benefiting from a lack of zoning or bylaw in the area and planning gaps that allow for developments like RV parks



Nova Scotia's protected areas as of December 2023, including national parks, provincial protected areas such as wilderness areas, parks, and nature reserves, and private protected areas such as parcels owned or managed by land trusts. Taken from Government of Nova Scotia Parks and Protected Areas online viewer, December 2023.



Areas announced for protection in December 2023 (red) and pending protected areas from the Parks and Protected Areas Plan (green). Taken from Government of Nova Scotia Parks and Protected Areas online viewer December 2023.

without building permits. The Coastal Protection Act, which may have offered new protections for coastal areas like Cherry Hill Beach, is still sitting idle on Environment and Climate Change Minister Tim Halman's desk. And at Hartlen Point, a renowned bird watching site in Eastern Passage, a 20,000-signature strong petition was not enough to halt federal plans for an extensive new military testing facility.

Though the public may have wished to see many areas around the province formally protected this year, when it came to protected areas, 2023 seemed to be characterized more by lacking transparency and limited public participation in planning and decision making.

ACHIEVING 20 & 30 PERCENT GOALS BY 2030

As outlined in the new Collaborative Protected Areas Strategy, the majority of designated protected areas in Nova Scotia are wilderness areas (at 70.1%), followed by national parks (20.0%), nature reserves (3.9%), provincial parks (2.6%), private conservation lands such as those protected by land trusts (2.2%), and other effective area based conservation measures, which includes spaces not solely intended for conservation but that may contribute to conservation goals, such as the Fortress of Louisbourg National Historic Site (1.2%). The Strategy states that once existing protection commitments (presumably pending parcels in the Parks and Protected Areas Plan) are completed, reaching 20% total land protection will require approximately 300,000 additional hectares of land. These areas should be relatively intact, representative of Nova Scotia's natural landscapes or rich in rare biodiversity, maintain ecological connectivity, protect watersheds, and offer restoration opportunities. Beyond that, the Strategy offers little by way of planning or a process for achieving the 20% by 2030 goal or interim 15% by 2026 goal. It seems to commit the province to a two-stage initiative for identifying new lands that could help meet these goals, with each drawing on consultation with the public, indigenous groups, scientists, and conservation organizations. There is also mention of exploring carbon credit sale and biodiversity offsets, extending the Nova Scotia Crown Share Land Legacy Trust, which supports the work of land trusts in the province, and expanding educational initiatives so that more private landowners might participate in voluntary or incentive programs for protecting their lands. The final page states that progress towards achieving protected areas goals will be communicated to the public through annual EGCCRA reporting.

Though our original criticism of the new Strategy still stands – that the province could come close to reaching interim land protection goals by simply designating all pending lands under the current Parks and Protected Areas Plan – we are encouraged by the renewed commitment to partnership and a holistic approach to new site selection in this guiding document. If the province is earnest in its plan to consult, Nova Scotians should expect meaningful opportunities to both propose areas for conservation and advise on their management. We hope that these consultations will be significantly expanded from the simple one that informed the Strategy's creation last year, as well as include more stakeholders than those invited to the planning process for the current Parks and Protected Areas Plan, which was light on public input.

Owls Head Provincial Park narrowly avoided being sold off to a private developer, thanks to strong opposition from well mobilized citizens across the province. Photo by Nicolas Winkler and provided by friends at Eastern Shore Forest Watch.

Achieving 20%, though, will likely require significant pressure from Nova Scotians who value parks, wilderness areas, and other protected spaces. After all, Owls Head was only formally protected in 2022 after locals mobilized to prevent a secret land sale, West Mabou Beach only narrowly avoided development (again) in 2023, and several gaps in protected areas legislation still leave Nova Scotian wildlife at risk.

We encourage you to take action for protected areas in 2024 by speaking with your MP, MLA, and local councillor about the wild spaces near you and join us in calling for legislative changes for our provincial parks.

FIND YOUR REPRESENTATIVE

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Find your MLA, organized approximately south-west to north-east below, and reach out via phone or email to discuss protected areas planning near you. Visit www.nslegislature.ca/members/profiles for more.

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IT'S TIME TO UPDATE THE PROVINCIAL PARKS ACT

When the Provincial Parks Act was created in 1959, it governed only roadside picnic parks. In the past 64 years, Nova Scotia has only amended the Provincial Parks Act a few times, most notably 34 years ago, in 1989. As a result, the Act has not kept pace with today's threats and values, particularly when it comes to protecting parks intended primarily for nature conservation. Updating this legislation is vital to reaching our protected areas goals, which is why the Natural Resources Strategy (2010) and the Parks and Protected Areas Plan (2013) both call on the government to amend and strengthen the protections of our provincial parks. A refreshed Parks Act is also important for avoiding the commercialization and privatization of our parks, which seems to be an increasingly common threat in Nova Scotia.

The purpose of the Parks Act is to provide outdoor recreational opportunities, preserve unique, rare, representative or otherwise significant elements of natural and historic resources, provide opportunities for understanding and appreciating natural and cultural heritage, and maintain a land base adequate to meet present and future needs in outdoor recreation and heritage resource protection.

The wording of the Act allows the Minister and Cabinet sweeping powers over what happens in a park and is vague about how these powers should be exercised. For example, the Minister may construct buildings or allow for leases to construct things like food concessions or "other facilities" for the benefit of the public. This was likely intended to allow for washrooms and small food operations, which may be suitable and environmentally friendly additions to a park depending on the purpose for its protection. It wasn't meant to allow for permanent development like golf courses. The Minister can also "dispose of flora and fauna" in a park. This may have been meant to allow for the removal of dangerous wildlife or removal of invasive species, things that are in the public's interest or the interest of maintaining the biodiversity values of the park, but it is concerningly vague. The Minister can allow for the removal of forest products in a provincial park, a troubling clause in a time when governments try to secretly sell our parks and when unsustainable forestry practices continue to dominate the landscape.

It's perhaps ironic that the Act stipulates that the general public may not destroy natural features or create a disturbance in a park, while government may entertain offers for potentially destructive developments with little public input – or even knowledge.

The Act is also significantly weaker than legislation for other kinds of protected areas. The legislation governing wilderness areas is far more restrictive than the Provincial Parks Act. You can often hunt fish, and camp, even use ATVs in many Wilderness Areas, but extremely destructive activities like mining, quarrying and energy development are specifically prohibited and, importantly, removing a wilderness area's designation to, say sell it off to a golf course developer, requires an act of legislature.

Together, we can put pressure on government to update and strengthen the Provincial Parks Act to ensure that all of our provincial parks and park reserves remain protected, forever. Sign our petition at www.naturens.ca and help us ensure that "protected" means protected for good.

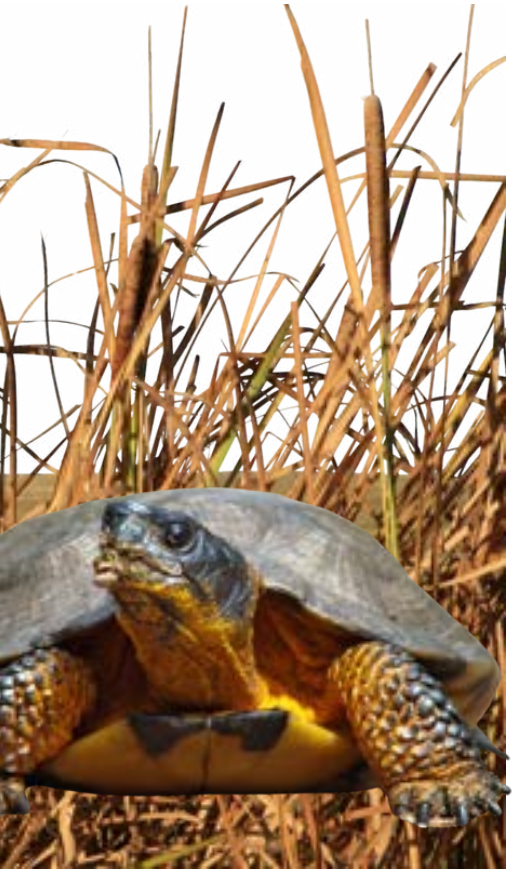
Young Nova Scotians exploring Carters Beach in Queens County, soon to be designated as a provincial park, as part of our Turning Young Naturalists Into Activists program supported by Nature Canada. Photo by Jess Lewis.

SPECIES AT RISK
3 YEARS AFTER BANCROFT VS LANDS & FORESTRY

Becky Parker, NatureNS Executive Director

It's been 3 years since hobby naturalists took the province to court for failing to adequately protect species at risk. Focusing on six species out of a possible 30 still awaiting legal protections at the time, NatureNS President Bob Bancroft, Halifax Field Naturalists, and Blomidon Naturalists Society made the case that the province had either failed to complete recovery plans on time, identify core habitat, or review existing plans by the legislated deadline, and were ultimately successful when Justice Brothers found the province negligent in its duties. Following the province's work in the time since, we are encouraged by progress made in recovery planning and the identification of core habitat for some species. However, we remain concerned that these legislated requirements sometimes lack teeth for producing on-the-ground conservation and that recovery planning for other species is still delayed.

Here's a summary of what's going on with the six species featured in the 2020 judicial review.



Wood Turtle

Background

The wood turtle is declining throughout its Canadian and American range due to expanding road networks, shoreline development, intensive agriculture near wet habitats, and ATV use on gravel trails. Listed as Special Concern at the federal level in 1996, it was reassessed as Threatened in 2007 and reconfirmed in 2018. In Nova Scotia, the wood turtle was listed as Vulnerable in 2000 and reassessed as Threatened in 2013. The province should have established a Recovery Team and created a Recovery Plan for the wood turtle by 2015, according to timelines set out by the Nova Scotia Endangered Species Act, but never did, nor was there evidence that the province had adopted and implemented the federal Recovery Strategy, which

is allowed under the Act. Nova Scotia formally adopted the federal Recovery Strategy in 2020, after being order to as a result of the judicial review that spring. With it, government also adopted the federal definition of Core Habitat for the wood turtle (or Critical Habitat as it's called at the federal level): "When a minimum of two wood turtle individuals have been observed in any year within the last 40 years, or when a single individual has been observed in multiple years, critical habitat includes aquatic habitat up to the high water mark and 200m inland, as well as 2000m up and downstream from a record and to a maximum of 6000m between two records." Note that identifying "core habitat" doesn't automatically offer a listed species at risk any extra protections, as the discretion to implement policies actually protecting Core Habitat lies with the provincial Minister, in this case Minister of Natural Resources and Renewables Tory Rushton. Meaningfully protecting core habitat relies much more on the implementation and enforcement of Special Management Practices (BMPs), building a culture around stewardship, and incentivizing landowners to adopt BMPs.

What's Happened Since?

The province and federal government both continue to fund wood turtle conservation initiatives led by ENGOs across Nova Scotia. Though not specifically targeting wood turtles, in 2023 the province funded work conducted by Coastal Action monitoring and stewarding snapping turtle habitat in Kespukwitk, work that may reasonably benefit other turtle species. The Clean Annapolis River Project (CARP) continues to monitor for wood turtles and conduct outreach to farmers and the public. The East River St. Mary's Nature Reserve, designated in December, now protects a small area of floodplain forest in a wood turtle hotspot on the Eastern Shore. Research published in 2022 by MES student Thomas Baker created distribution models for the wood turtle, revealing the importance of elevation, distance to alder shrubs, and watercourse density in predicting wood turtle presence. His research also warned that, though the modeled distribution overlapped with 80.4% of the newly identified Core Habitat, just 4.6% of predicted wood turtle distribution is found within protected areas, emphasizing the importance of private land stewardship for protecting the turtle.

Ongoing Challenges

Weakened wetland protections threaten wood turtles by allowing for development in habitats that no longer meet the requirements for a Wetland of Special Significance (see our piece on pg 48 about recent changes to the Nova Scotia Wetland Conservation Policy.) As a result, turtles are only meaningfully protected in designated protected areas and, sometimes, places where they are known to exist and people steward habitat for them – where sightings are frequently reported, where nests are made near homes or along logging roads, or where

conservation organizations maintain survey routes. Tracking turtles isn't easy, though. They're only active during the warm months, have long and complex lives, and, in places where they often overlap with humans, may disappear to poaching before researchers can find them.

Opportunities

ENGOs like Clean Annapolis River Project are working to improve data availability and encourage stewardship for the wood turtle on private lands, sometimes with support from the provincial and federal governments. Considering the high onus placed on conservation-concerned Nova Scotians for proving that a wetland should be considered turtle habitat, and therefore owed legal protection, initiatives like CARP's visual surveys and radio-telemetry tracking are vitally important for protecting both individual turtles and their habitats. The existence of Special Management Practices recommended by the province (and presumably followed on public lands) reduces some threats posed by forestry and agricultural operations. These were in place before the Recovery Plan was adopted. Nova Scotia also has a history of providing incentives for private landowners to adopt stewardship practices, such as the Species At Risk Partnerships on Agricultural Land (SARPAL) via the Environmental Farm Plan, and provincial funding opportunities like the Habitat Conservation Fund (HCF) continue to provide resources for research and habitat protection initiatives.

Our Outlook: Fair

Assuming the province and federal government continue to engage in partnership with ENGOs, incentivize private landowners, and provide funding initiatives like the HCF, we think it's reasonable to be hopeful for the wood turtle. Provincial wetland protections need to be strengthened to help maintain habitat. In the interim, protected areas planning that prioritizes wetlands may benefit wood turtles by protecting habitat, in addition to moving us closer to 20% protected areas by 2030.

Rams Head Lady Slipper

Background

The Rams Head Lady Slipper (RHLS) is rare throughout its Eastern North America range. In Nova Scotia, it's found in only a few locations in the Annapolis Valley and along the North Shore, where it finds a home in rare mature deciduous forests and mixed woods with significant gypsum deposits. All locations, representing 3144 stems, are threatened by a combination of gypsum mining, forestry operations, housing, and other development in forest habitats. The province should have appointed a Recovery Team and created a Recovery Plan for the RHLS by 2008, but only released a plan after the judicial review in 2020. Core Habitat was then defined as "all known occurrences along with a 1,500m buffer of forested lands." This buffer is intended to allow for unknown or yet undiscovered occurrences, which are likely to exist near known stems due to the plant's cloning nature, and was based on a recent discovery of a new patch in the Windsor area at the time of Recovery Plan writing. The Recovery Plan also recommended that this definition be updated regularly, to account for new scientific understanding of RHLS ecology or habitat associations.

What's Happened Since?

Acadia BSc student Katie King presented research to Nature Nova Scotia followers in 2023 discussing her work on propagation techniques for the RHLS and other native orchids. Orchids are notoriously difficult to grow in the lab due to their specific habitat requirements and relationship with symbiotic fungi. Herbarium propagation could benefit conservation goals for wild RHLS populations by creating a stock of plants for regeneration projects.

Ongoing Challenges

The majority of known RHLS stands are found on private lands, necessitating the cooperation of landowners in protecting the plants. There is a lack of awareness among the public that may prevent RHLS protection on private lands as well as the discovery of new stands. Without eyes on the ground looking for the plant, new patches may go unnoticed or disappear to development.

Opportunities

Natural history societies are active in RHLS hotspots and can promote RHLS conservation by introducing beginner naturalists to orchid identification and organizing local searches for new stands. There are woodlot groups in Nova Scotia that share Species At Risk BMPs and other

resources with members, such as the province's Guide to Forest Biodiversity Stewardship. Some of these groups also have a strong history of promoting sustainable forestry practices, which also benefits RHLS.

Our Outlook: Good

Lady slippers are showy, charismatic species. Despite the low population size, assuming continued monitoring by citizen scientists and with work to improve awareness of RHLS among other Nova Scotians, we are hopeful that more patches will be found (or maybe, one day, created) and more landowners will take up active stewardship of these rare orchids.

Mainland Moose

Background

Once abundant and found throughout the province, moose on the mainland are now found only in isolated pockets on the North Shore, Antigonish/Guysborough, interior South Shore, and intact wilderness within the Eastern Shore, where they are threatened by a combination of habitat destruction, poaching, and brainworm introduced by white-tailed deer. The mainland moose was listed as Endangered under the Endangered Species Act in 2003. The province created a Status Report the same year and a Recovery Plan in 2007 (3 years late according to the legislated timeline) which failed to identify Core Habitat or set a goal for population recovery. An updated Recovery Plan was created and released in 2021, after the province was ordered to catch up, which identified Core Habitat based on a model using moose presence/absence data, suspected numbers in areas where there is uncertainty about the population, information about road density and development pressure, and projected future forest cover. This model produced an area of Core Habitat that spans much of the province, particularly interior forests in Cumberland, Halifax, Guysborough, and Antigonish counties. The Recovery Plan also recommended that Core Habitat be officially designated, given the dire situation for moose numbers and the lack of suitable habitat, which was an unusual and significant recommendation for a species at risk Recovery Plan in Nova Scotia.

What's happened since?

Core habitat has not been designated for the moose, or for any listed species at risk in the history of the Endangered Species Act, so it's difficult to predict what action on this Recovery Plan recommendation would look like if the province chose to follow its Recovery Team's advice. The province is experimenting with closing logging roads in moose habitat so that interior forests cannot be accessed as easily by ATVs, in the hope that this may deter poaching. In 2023, government funded work by Acadia University researchers examining the geographic distribution, prevalence, and intensity of brain nematodes in deer in the province. Considering the serious threat brainworm poses to the mainland moose, quantifying prevalence and intensity of brain nematodes and mapping brainworm hot spots is a vital conservation planning initiative. Government also continues to accept sighting reports from the public. At Nature Nova Scotia, we've initiated a public survey asking Nova Scotians for long-term accounts of their experiences in the forest, collecting information on forest cover, trends in deer and other wildlife populations, and public opinion on proposed moose management approaches. We also launched a petition asking government to immediately halt high volume forest harvesting in moose habitat and to amend the current moose Special Management Practice guidelines to allow for wider buffers and better forestry practices. Neither request had been granted at the time of report writing.

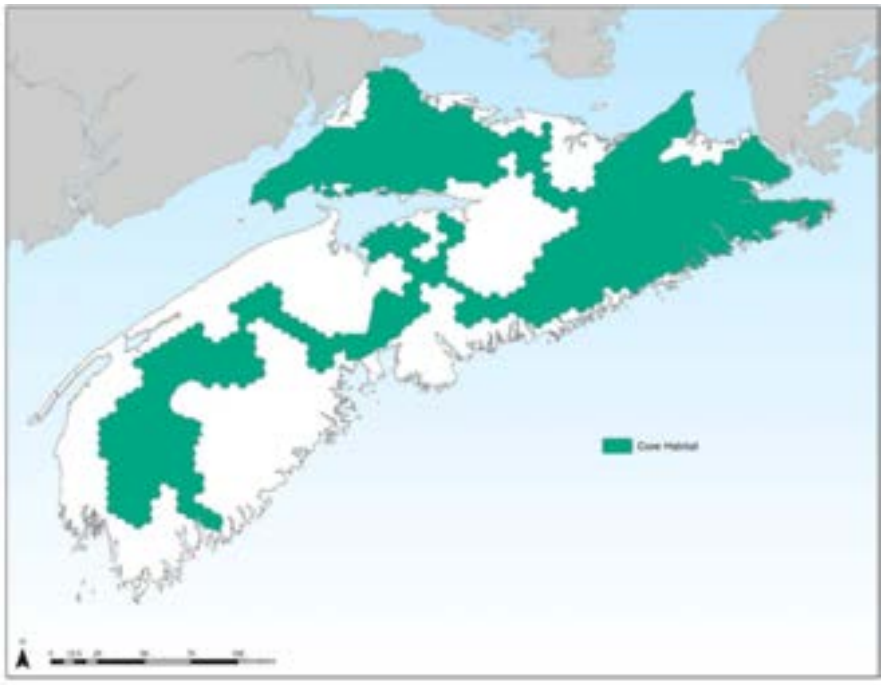


Figure 4. Core Habitat for Mainland moose in Nova Scotia.

Core Habitat has been identified for each of the three localized subgroups (Cumberland/Colchester, Pictou/Antigonish/Guysborough, and Tobeatic) that is necessary to support population and distribution objectives for viable population size

Mainland Moose Core Habitat, as identified in the 2021 Mainland Moose Recovery Plan. NS Department of Natural Resources & Renewables

Ongoing challenges

Extensive resources are required to carry out surveys for moose. Helicopter surveys allow for wide coverage but require increasingly rare deep snowfall events to be effective. There is also a lack of public awareness and confusion with the abundant Cape Breton moose that may prevent mainland moose sightings from being reported. Weakened wetland protections and the province's failure to meaningfully

implement ecological forestry goals on public lands continue to threaten moose across their range. Moose habitat is also threatened by gold mine proposals and a growing wind energy sector.

Opportunities

Knowledgeable naturalist, hunting, and guiding groups can encourage moose sighting reports amongst their respective communities. Though monitoring efforts can be cost prohibitive, there are provincial funds available that can allow ENGOs to cost-share recovery efforts like long-term monitoring. The Habitat Conservation Fund, for example, often prioritizes species valued by hunters, like the moose.

Our Outlook: Poor

Given the diverse and widespread nature of threats and lack of meaningful action on habitat protection from government to date, we are skeptical that moose recovery goals will be met by the Recovery Plan timeline. There are possibly fewer than 1,000 individual moose distributed across a handful of isolated groupings and quality habitat continues to disappear across this range. The moose is at serious risk of extirpation in mainland Nova Scotia.

A mainland moose carcass reported to NatureNS staff by volunteer Kelsey Green in 2023. Investigation by Conservation Programs Coordinator Jess Lewis resulted in a report to the Department of Natural Resources and Renewables and confirmation of species identification. The mainland moose is found in isolated pockets of rural Nova Scotia where researchers suspect either adequate habitat or refuge from brainworm-carrying white-tailed deer exist. We hope our work will encourage more Nova Scotians to report moose sightings and help us better understand population trends.

Black Ash

Background

Black ash has declined significantly across its range since European settlement, threatened by forest clearing, forestry practices favouring softwood regeneration, wetland loss, urban development, climate change, disease, and pests like the Emerald Ash Borer. In Nova Scotia, there are just an estimated 1,000 trees left, most of which are young saplings. The species was listed as Threatened nationally in 2018, prompting a federal status report. It was previously listed as Threatened in Nova Scotia, in 2013, which resulted in the creation of a Recovery Plan in 2015, but without the required Core Habitat definition. After the judicial review, the province added an amendment to the Recovery Plan to include Core Habitat, defining it as all known black ash occurrences plus a buffer of 100-200m, depending on the depth to the water table.

What's happened since?

The natural resources branch of the Confederacy of Mainland Mi'kmaq continues to monitor and steward known ash sites as well as coordinate efforts to find new trees. In Kejimkujik National Park and Historic Site, Mi'kmaq, naturalists, and researchers added 20 trees to the existing survey, bringing the total stewarded population within the park to 55 trees. The original survey and the connected planting projects were initiated by the federal government and partners before the provincial judicial review and drafting of a Nova Scotia Recovery Plan for Black Ash. Three black ash were saved from logging near Goldsmith Lake in Annapolis County, thanks to efforts by citizen scientists to record the biodiversity of an area already approved for harvest. Ecologist Nick Hill is investigating the potential for tree relocation, work prompted by the recent 100-series highway twinning development. At Acadia University, herbarium staff are assisting the Confederacy of Mainland Mi'kmaq in establishing long-term seed storage for black ash, among other species.

Ongoing challenges

The emerald ash borer was first spotted in Nova Scotia in 2018, in a park in Bedford, and has since spread throughout the basin. Without an effective treatment or control, this infestation is likely to spread to other parts of the province. Small wetlands that may harbour unknown black ash stands are poorly tracked and it is unknown whether we are still experiencing net wetland loss in Nova Scotia. Weakened protections to wetlands of special significance, gaps in Special Management Practices that allow for forest harvests in wet environments, and low seed viability in areas where ash are known all pose serious threats to the provincial population.

Opportunities

Indigenous-led monitoring and stewardship initiatives continue to create new data and protect some existing ash stands. Land trusts continue to target rare wet forests containing species like black ash for protection and are supported in this work by the province and federal government. As ash inevitably die in urban Halifax, where the emerald ash borer has taken hold of street trees as well as private residents' yard trees, public awareness of the issue may grow and foster greater support for conservation measures.

Our Outlook: Poor

Considering the dramatic effect of the emerald ash borer in other areas of the country and limited protections for small forested wetlands in Nova Scotia, we expect that black ash will decline significantly before recovering. Surviving extirpation will depend on meaningful land management changes across the province and targeted control of the emerald ash borer.

Canada Warbler

Background

Canada warbler numbers declined consistently across their North American breeding range between 1970 and 2012, including in Nova Scotia. Main threats are thought to include wetland loss and forest type conversion, reduced insect prey due to pesticide use, window strikes, and predation by roaming cats, but it's not well understood how these threats may differ in scale or importance across the birds' large range. Though other areas seem to have experienced a rebound in numbers since the early 2000s, what little data we have in Nova Scotia does not support this trend. The Canada warbler was designated as Threatened at the federal level in 2008, reassessed as Special Concern in 2020, and listed as Endangered under the provincial Act in 2013. A Recovery Plan was never produced, the province only adopting the federal strategy in 2021, after the judicial review.

What's happened since?

By accepting the federal Recovery Strategy, the province has technically fulfilled most of its legal obligations under the Endangered Species Act. However, this doesn't necessarily translate into meaningful

conservation for the Canada Warbler. The federal plan provides minimal guidance for actions that could be taken in Nova Scotia. Despite this lack of overarching guidance, the province did support Dalhousie University's Landbirds at Risk in Forested Landscapes project in 2023, conserving breeding habitat for several forest birds by investigating and promoting best management practices for forestry operations. Previous research has emphasized the importance of parts of New Brunswick for conserving Canada warbler habitat, suggesting that both protected areas conservation and the use of ecological forestry practices could be prioritized to ensure healthy habitat for future generations. Collaborative work [RP1] by researchers in Alberta, central Canada, and Nova Scotia recently attempted to identify Critical Habitat for the wide-ranging Canada warbler using known population numbers, projected habitat availability, and climate change factors, which revealed priority areas in Nova Scotia that are more likely to contribute to population growth or maintenance over time.

Small gains were made in formal habitat protection. A May 2023 private land donation to the Nova Scotia Nature Trust protected a forest and wetland matrix known to support Canada warblers in the Pleasant River area, near Kejimkujik National Park and Historic Site. In August, government announced Archibald Lake Wilderness Area's protection, safeguarding both Canada warbler and mainland moose habitat, and the Nature Trust protected more wet forests along the St. Mary's River.

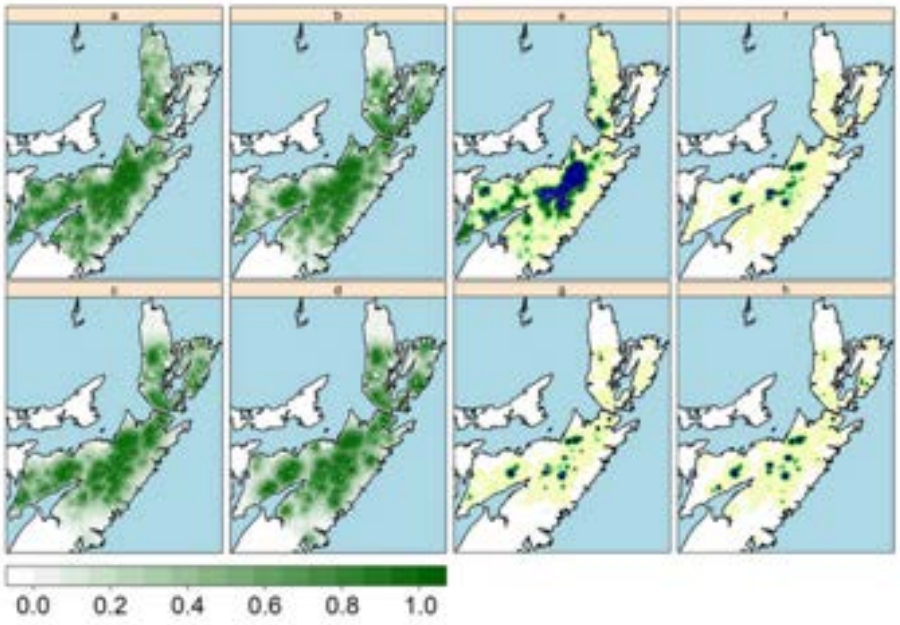


Fig. 5 Priority areas for conservation of Canada Warbler in northern Nova Scotia under four scenarios. Maps a-d indicate priority rankings (0 = lowest priority and 1 = highest priority) based on **a** current distribution, **b** current + best-case 2100 distribution, **c** current + medium-case 2100 distribution and **d** current + worst-case distribution in LANDIS-II scenarios, whereas colors in e–h indicate the area necessary to maintain specified percentages of the 2019 population under the **e** current, **f** best-case, **g** medium-case and **h** worst-case scenarios. In panels e–h, areas colored in blue, blue + dark green, blue + dark green + light green, and blue + dark green + light green + yellow indicate the cumulative areas necessary to maintain up to 50, 75%, 90%, and 100% of the current population, respectively. White areas do not contribute meaningfully to maintenance of the current population (i. e., removal of these pixels removes habitat for ~0% of current population)

Priority conservation areas for Canada warbler in northern Nova Scotia, Leston et. al. 2023

A wet early successional forest inside a mixed forest matrix, with peat moss and a thick shrub layer. R Parker, 2021

Ongoing challenges

The Canada warbler has a complex life history, preferring different habitat types across its national range. Research investigating how to delineate Core Habitat for the Canada warbler is relatively new and, as a result, little has made it into the current Recovery Strategy. Core Habitat has not yet been identified through those official planning documents and is therefore not defined for Nova Scotia, leaving habitat protection as a piecemeal exercise with much of the work taken on by resource limited ENGOs. A general lack of population data also hampers conservation planning efforts for the Canada warbler, in Nova Scotia and throughout Canada.

Opportunities

Considering the large amount of private land and lands under management for forestry purposes in Nova Scotia, projects like the Landbirds At Risk in Forested Landscapes, which researches and promotes the use of best practices for conserving warbler habitat, are vital for fostering a greater understanding and appreciation for the birds. Assuming government plans to review the adopted federal plan according to the timeline set out by the Endangered Species Act, current research efforts illustrating population trends, developing forestry best practices, and identifying core habitat should be included in an updated strategy within the next few years. In the meantime, government could use emerging research to create a Special Management Practice for the Canada warbler.

Our Outlook: Poor (locally) Fair (regionally)

The Canada warbler may finally be on the rise in Atlantic Canada, but it's uncertain what role Nova Scotia might play in this rebound, if it continues. Given the lacking understanding of population trends in our area, climate change projections suggesting both losses and gains of suitable habitat in the future, weakened wetland protections, the failure of the province to meaningfully move towards ecological forestry on public lands, and prevalence of high volume harvest methods on private lands, it's difficult to predict what the future has in store for the Canada warbler. Protection of wet, mixed, and regenerating forests through the protected areas system and continued partnership with working forest landowners are critical for maintaining Canada warbler numbers in Nova Scotia.

Eastern Wood Pewee

Background

The pewee is a small olive-coloured flycatcher found in intermediate and old growth mixed forests from Nova Scotia and Prince Edward Island westward to Saskatchewan. In the Maritimes, they seem to prefer mature hardwood forests and are more often found in intact, older woods dotted with lakes, marshes, treed swamps and other small waterbodies.

Though recent data may indicate a increase in numbers in the Maritimes, historic Breeding Bird Survey data suggests a decline of 70% (or 2.9% per year) over 1970-2011 and 25% decline over just 2001-2011, across the birds' range. The wood-pewee was assessed as Special Concern under the federal Species At Risk Act in 2012 and Vulnerable under Nova Scotia's Endangered Species Act in 2013. Under the provincial legislation, the Minister should create a Management Plan for Vulnerable species like the pewee within 3 years of listing. In their defense at the judicial review, the province argued that the wood-pewee's national range necessitated collaboration with the federal government and that the Minister was waiting to adopt a federal plan. Adopting a federal plan is an option under the provincial legislation, but waiting to adopt a plan or until more data becomes available violates the legislation's emphasis on the use of the precautionary principle, which directs the province to act in the species' best interest even when some factors that may affect its management remain poorly understood. The pewee's federal status was only officially listed (official listing is different from assessment) in 2017, giving the federal government until 2020 to prepare their management plan. This means that in 2016, when Nova Scotia's pewee management plan was due, the province had no idea when a federal plan might be available and was willing to be an undetermined amount of time late in delivering on its legislated duties.

What's Happened Since?

The best management practice research taking place in working forests through the Landbirds At Risk in Forested Landscapes project will benefit the pewee as well as the Canada warbler and other forest-dwelling birds. A donation to the Nature Trust last year gave permanent protection to the Acacia Valley Conservation Lands near Digby, saving habitat for pewees and many other old and mixed forest-adapted species. The Blomidon Naturalists Society submitted a proposal to the province to establish a wilderness protected area in southwest Kings County, citing the wood pewee as one of several key species needing protection. They pointed out that, at the time, only 13% of the province was protected and Kings County had only 4.5% of its area protected, connecting species at risk conservation

with international protected areas goals. In Halifax, the pewee's confirmed presence at Hartlen Point, as indicated in the federal government-commissioned Environmental Effects Determination Report, was not enough to save the area from development plans proceeding, as protesters may have hoped.

Ongoing Challenges

Like the mainland moose, the wood pewee faces many interrelated threats. Insect declines are poorly understood and it may be difficult to get Nova Scotians to care about the lack of flies, wasps, and beetles in the forest today. Small wetlands that provide both breeding habitat and hunting grounds are not meaningfully protected in Nova Scotia and, since the province's roll back on Wetlands of Special Significance protections, it may be even more difficult to formally protect pewee habitat.

Opportunities

Programs that engage landowners in species at risk habitat stewardship, like the Landbirds At Risk in Forested Landscapes project, both increase awareness of the wood pewee's status and conservation needs and foster long-term action. Woodlot associations and industry groups that promote ecological forestry can share pewee management best practices and improve public understanding and appreciation for species at risk.

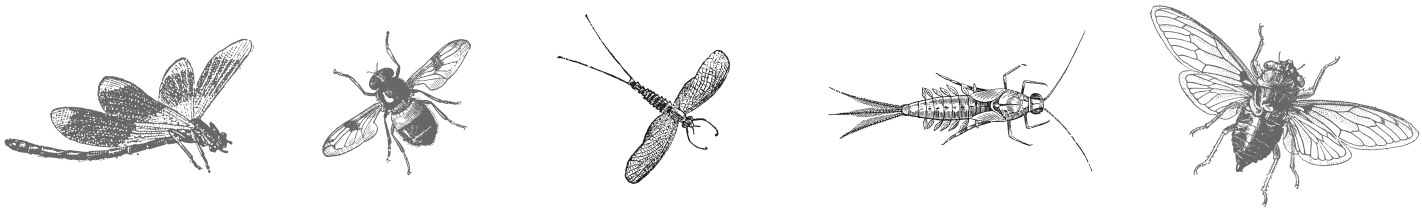
Our Outlook: Fair

Though intact mature forests continue to disappear in Nova Scotia, the wood pewee's preference for edge habitats and tolerance for smaller patch size than some other mature forest birds may buffer the species against continued habitat loss. Incentives for stewardship action should be expanded on private lands, mature public forests known to support pewees should be identified for consideration as protected areas, and wetland protections should be strengthened to ensure lasting habitat and species recovery in the long term.

OUR ACTION RECOMMENDATIONS

Provincial Government

- **Designate Core Habitat for the mainland moose**, as recommended by the Recovery Plan, and work with the Recovery Team and other stakeholders to create regulations to be applied in that area. Regulations should aim to preserve habitat quality and connectivity, reduce the threat posed by brainworm, and deter poaching.
- Work with wildlife and ecological forestry experts to **update the Special Management Practice guideline for the mainland moose**, citing current research and explaining why the given recommendations represent best practice.
- Begin work to **update the adopted Canada warbler Recovery Strategy with the identification of Core Habitat**, to be released by 2026.
- Work with avian and ecological forestry experts to **create and implement a Special Management Practice guideline for the Canada warbler and Eastern wood-pewee**. Combining several species at risk into a forest landbird SMP could be appropriate.
- **Continue to implement recommendations of the Lahey Report,** including the use of the Environmental Assessment process for public forest harvests, conducting a review of the effectiveness of wildlife clumps required by the Wildlife Habitat and Watercourse Protection Regulation, and improving the quality and accuracy of datasets used to make land management decisions.



- **Reinforce rolled-back protections offered by the Wetlands of Special Significance (WSS) program** under the Wetland Conservation Policy. Specifically, the entire wetland complex should be considered as a WSS when a species at risk record exists, not only a portion of the wetland, historic records should count as species records, the WSS designation should automatically be applied to wetlands supporting Vulnerable species just as it is for Threatened and Endangered species, and development in the public's interest should include only works required to maintain public safety, not market housing, commercial development, or resource development.
- **Continue to fund grant programs** like the Habitat Conservation Fund and environmental stewardship incentive programs like those offered by the Environmental Farm Plan, prioritizing species at risk.
- **Establish a Species and Ecosystems at Risk Local Government Working Group**, following the model of British Columbia, bridging gaps between municipal, regional, and provincial representatives to foster regular discussion and collaboration.

Federal Government

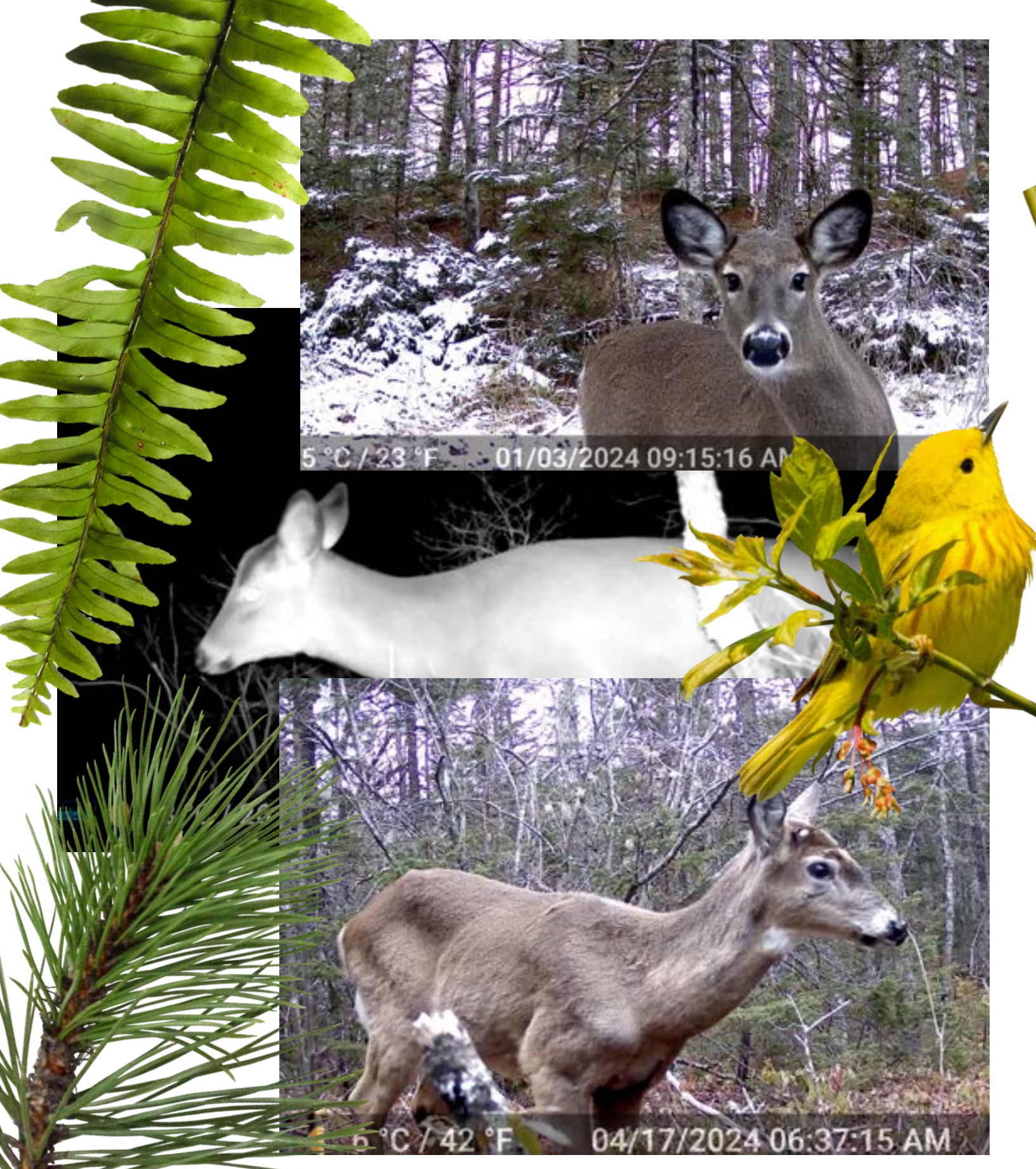
- **Create and implement a web-based open data platform** to assist with cross-jurisdictional recovery planning efforts, as recommended by Turcotte et. al. 2021.
- **Create habitat-based multi-species committees**, including a committee dedicated to the Wabanaki-Acadian forest.
- **Include information on where actions have not been taken to protect Critical Habitat in species' Progress Reports**, as recommended by the 2023 Independent Auditor's Discretionary Powers to Protect Species At Risk Report.
- **Continue to fund programs that provide capacity for provincial governments and ENGOs** to act on species at risk recovery planning recommendations.

Municipal Governments

- **Include biodiversity considerations** as key components of municipal planning strategies, land-use by-laws, climate change adaptation, and other planning initiatives.
- **Establish a Municipal Fund for Biodiversity** to support protected areas, habitat restoration, or other conservation initiatives, following the model of the Canadian Parks and Wilderness Society's MFB.
- **Establish biodiversity-dedicated pages on government websites** where citizens may find information on the species at risk in their community, what the municipality is doing to conserve them, and how they can help.

Nova Scotians

- **Demand action.** Sign our petition pushing for meaningful movement towards full implementation of the Lahey Report recommendations, join in on our letter asking Minister Rushton to designate Core Habitat for the mainland moose, and tell the Nova Scotia government it's time to update the Parks Act.
- **Follow species at risk stewardship best practices** and familiarize yourself with resources like:
    - The province's Special Management Practice guidelines
    - A Field Guide to Forest Biodiversity Stewardship
    - Mersey Tobeatic Research Institute's landowner guides: Healthy Lakes and Wetlands for Tomorrow, A Landowner Stewardship Guide for Species At Risk in Nova Scotia
    - Birds Canada's Healthy Beaches and Dunes for Tomorrow, a Stewardship Guide for Nova Scotia Landowners



Trail camera photos submitted by NatureNS members, the Friends of Blue Mountain - Birch Cove Lakes, featuring several white-tailed deer, potential carriers of brain worm disease. The Friends have been monitoring the BMBCL area for signs of moose activity and other wildlife as part of our province-wide mainland moose research project.

MAINLAND MOOSE RESEARCH PROJECT
PRELIMINARY RESULTS

Becky Parker, NatureNS Executive Director, and Jess Lewis, Conservation Programs Coordinator

Moose face a variety of ubiquitous and interrelated threats in mainland Nova Scotia, including brainworm introduced by white-tailed deer, poaching, habitat loss and fragmentation, and climate related stressors. The updated Nova Scotia Recovery Plan for the Mainland Moose lists a number of actions that, if taken, could help save the population from extirpation, from the designation of new protected areas to improved forestry practices and more. Implementing some of these actions, however, requires information about moose numbers and behaviour that is lacking for most of the province.

Our staff often hear from naturalists who are seeing moose but not reporting them to the province out of skepticism that their information will ever be used or that meaningful action will be taken to protect the moose. In 2023, we launched a public survey in an attempt to fill these gaps, by 1) gathering moose sighting reports, 2) identifying threat hotspots, and 3) improving our understanding of public knowledge and opinions around moose life histories and population management. We are continuing the survey into 2024 and hope to reach many more Nova Scotians by year end. These are the preliminary results from responses to our online survey and workshop discussions over the fall of 2023.

Forty-eight Nova Scotians responded to the online survey in 2023. Many (24%) were from Halifax County, including rural Eastern Shore, followed by the North Shore represented by Cumberland (13%) and Colchester (11%), then by Kings (11%). The remaining 41% were spread out evenly throughout other counties with the exception of Shelburne, which provided no respondents. Twenty percent of respondents reported to have seen a moose or signs of moose in the last couple years, most coming from Halifax and Cumberland counties. Most respondents were outdoorsy Nova Scotians, reporting being in the woods either weekly (31%), every few weeks (27%), or daily (9%) and that they were relatively confident in their ability to identify moose signs if they encountered them (51% reporting reliable identification skills and 22% reporting sometimes reliable identification skills). Many were recreational users of forested lands, 91% of respondents identifying as a hiker, canoer, or skier, 31% identifying as hunters or fishers, and 11% identifying as ATV or other off-road vehicle users. Many also reported using the woods for spiritual purposes (29%) or valuing the forest for its

Participants of a mainland moose themed workshop explore forests on the Chebucto peninsula, discuss ecosystem processes , and practice their identification skills. Photo by Jess Lewis.

The edge of a regenerating clearcut near Beals Brook and the Last Hope Camp in Annapolis county, 2023. Photo by Jess Lewis.

conservation (49%), ecosystem services (33%), or other intrinsic values (42%). Some respondents worked within a forest industry, as woodlot owners or different kinds of forest professionals, in forestry (16%), guiding or other tourism (9%), or other forest professions (9%). Residents of the North Shore were the most confident in their ability to recognize signs of moose. Across all counties, respondents aged 40-59 years were more likely to report confidence in their identification abilities and were also more likely report spending a lot of time in the woods. Among those who reported seeing moose in the last few years, most respondents seemed to think that they were seeing fewer moose or signs of moose over time, though a couple respondents thought they might be seeing more since the start of the COVID-19 pandemic. Those respondents suggested that the reason for their increased sightings could be either more eyes in the woods because of pandemic restrictions or renewed interest in the outdoors or a true increase in moose numbers in their area.

When asked to rank potential causes of moose declines, survey respondents consistently ranked all given factors as serious threats. Each factor was ranked at least as a level ~3 in the 5-level measure of importance, 0 being not a causative factor in moose declines and 5 being a key causative factor in moose declines (lowest average ranking was 2.9, lowest median ranking was 3). These included, from highest to lowest average ranking, loss of mature forest, high volume forest harvests, road construction, loss of wetlands, brainworm transmitted by white-tailed deer, loss of lake access, housing and cottage development, extreme heat, wildfires, energy development, winter ticks, loss of young (browse) forest, poaching, drought, and mine development. Survey participants were invited to provide more detail in writing about their assumptions around moose declines but, though many wrote to clarify their rankings, none provided other factors as potential explanatory causes.

Potential core habitat conservation measures were ranked similarly, with all examples receiving a median level of support of at least 4 out of 5 (lowest average ranking was 3.44). These included, in order of average ranking, designation of core habitat, new mandatory best management practices (BMPs) for public land forest harvests, identification and protection of new protected areas, higher fines or greater consequences for poaching activity, ban on high volume forest harvests, designation of all pending protected areas, new mandatory BMPs for housing development, mining development, road construction on public and private lands, and private land harvest, increased deer harvest limits, increased surveillance for poaching activities, and organized deer culls. Support for protected areas

as a meaningful moose conservation tool varied by type of protected area. Though respondents felt that protected areas were generally important for stewarding moose habitat, they thought that federal and provincial protected areas, such as national parks, provincial parks, wilderness areas, etc, were more important than municipal or private (land trust) protected areas. A small number of respondents didn't think protected areas were important at all, particularly municipal and private protected lands. Stewardship of working forests and rural lands were consistently ranked as vital for moose conservation, with suburban land stewardship ranked as neutrally important. Our survey did not discuss suburban sprawl beyond asking respondents to rank the potential threat of housing development against other potential threats.

Thirteen respondents who owned forested land reported engaging in some kind of wildlife stewardship action, including avoiding harvests during bird breeding season, leaving buffers around wetlands or other sensitive habitats, or avoiding/limiting the use of pesticides. One respondent had participated in the Environmental Farm Plan program and three respondents reported taking advantage of conservation lands tax programs or donating to organizations like the Nova Scotia Nature Trust. Four respondents said they were engaging in stewardship activity specifically for moose. All owned mixed forests, one in a mature state, one young regeneration, and two of mixed ages. Three of these respondents were simply leaving their land in its current state without active management. Only one stated that they were actively managing for moose habitat, specifically through uneven age forest harvests.

We also asked respondents to describe any changes they've witnessed in forest ecosystems near them. Most remarked on declines in particular taxonomic groups, namely deciduous trees, bears, coyotes, birds, understory plants, and lichens, while many also reported observing slight increases or no change in white-tailed deer and invasive plants such as glossy buckthorn and garlic mustard.

Through discussions with event participants, we learned that many people are unaware that the moose is endangered in mainland Nova Scotia and that there is confusion around the comparatively abundant western moose in Cape Breton. Participants who had seen a moose on the mainland tended to be older participants and indicated they had last seen a moose more than 10 years ago, most often near their homes or cottages in rural Nova Scotia. About 30% of event participants went on to fill out the more in depth formal survey. Regardless of

their starting knowledge, event participants frequently expressed a deep love and concern for the moose. Most event participants were unaware of the provincial hotline for reporting mainland moose sightings. The few who were aware were professional guides or other kinds of hike/outdoor leaders and some expressed skepticism of the hotline's effectivess or suggested that they weren't likely to use the hotline even though they knew about it. Participants who had reported a moose sighting through the provincial hotline seemed dissatisfied with what was often minimal or entirely lacking follow-up communication from provincial staff. Some were sympathetic, suggesting that government staff were likely over capacity and simply unable to respond, but many were not, citing long-standing criticism of the Department of Natural Resources' mismanagement of species at risk and reputation for poor communication. Public opinion of the Department's effectiveness in species at risk

management and its implications for citizen volunteerism may prove to be a worthwhile future research topic in understanding the mainland moose.

Introducing moose from Western Canada, as had been done in Cape Breton, was a common event discussion topic. Introducing moose from other areas of Canada was not offered as a potential conservation solution in our survey. There was also frequent discussion about highways and wildlife over/underpasses.

Though workshop attendees and online survey respondents both generally agreed that reducing habitat loss, improving forestry practices, and increasing monitoring were all good potential solutions for reversing moose declines, in-person discussion at workshops revealed a lack of understanding around topics like core habitat and what new legal tools might benefit moose. Most event attendees did not have a complete understanding of how provincial legislation actually results in on-the-ground protection for species at risk but were interested in discussing the ways core habitat designation could benefit rare species in Nova Scotia, something that has never been done before.

Though it's too early to draw reliable conclusions from our survey or events, it's clear to us from the survey responses alone that Nova Scotians care very much about our species at risk. We suspect most of the response received to date, particularly through the long formal survey, has come from within the natural history network, as we didn't encounter any survey respondents who didn't already know the moose was a listed At Risk species, a fact that we have found often surprises Nova Scotians outside the natural history, hunting and fishing, and natural resource communities and surprised our event attendees. We hope to engage many more Nova Scotians over the coming months.

Would you recognize moose scat if you came across some in the woods?

WETLANDS

GAPS IN WETLAND PROTECTIONS: WHAT WE HEARD ON WORLD WETLANDS DAY 2023

Becky Parker, NatureNS Executive Director. This chapter was taken from an older blog post on the NatureNS website and updated for the 2023 State of Nature Report.

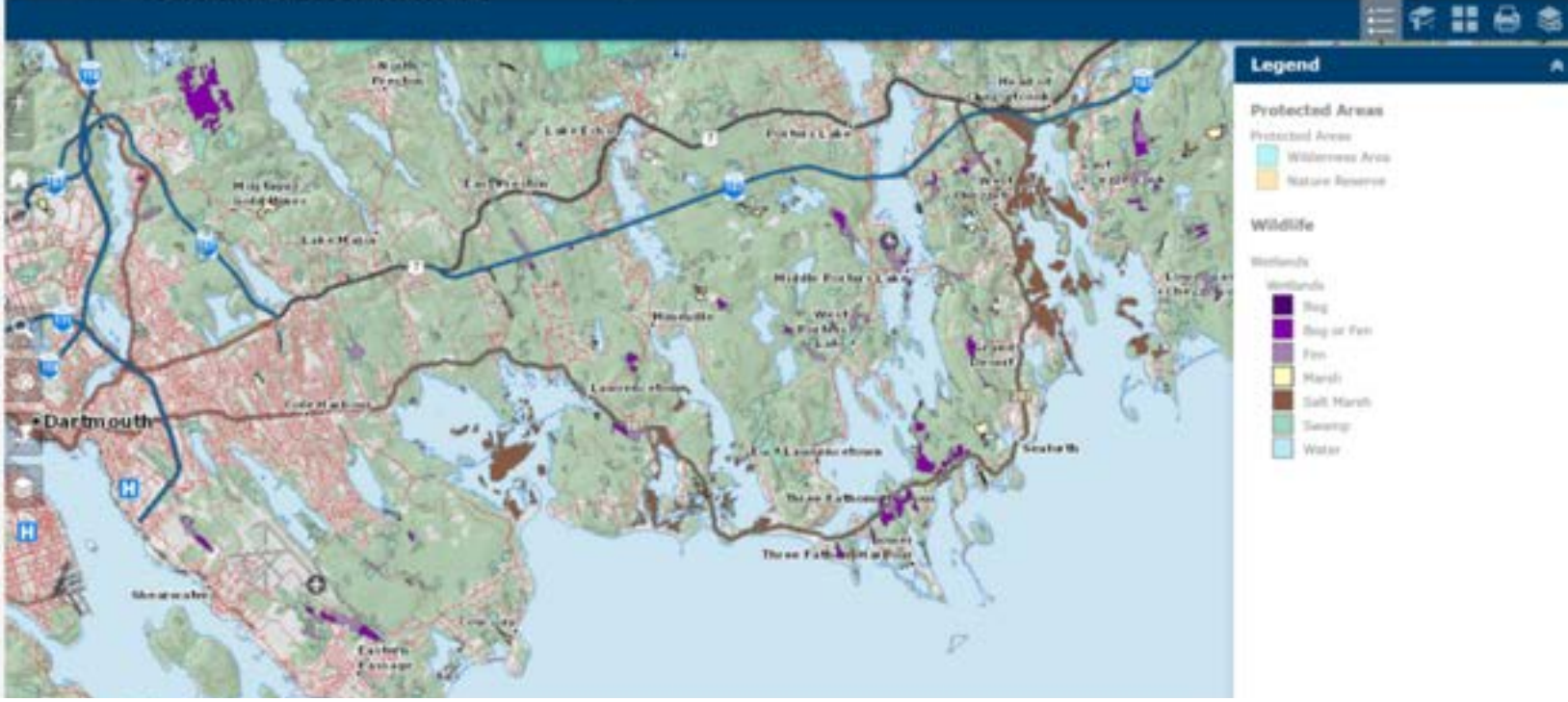
Wetlands are vital natural infrastructure. They minimize erosion and sedimentation of watercourses, provide a buffer against storm runoff and storm surge, store and sequester carbon, sustain biodiversity by serving as important habitats for fauna and flora, support medicinal and ceremonial plants that are important to the Mi'kmaq, and provide hunting and recreation opportunities for the communities that have developed around them.

They're also disappearing. Around the world, wetlands are vanishing at three times the rate of forests. Urbanization, climate change, and unsustainable development in resource industries have contributed to the loss of 35% of the world's wetlands between just 1970 and 2015, and the rate of loss has accelerated every year since.

About 1/4 of the world's remaining wetlands are found in Canada and 10,456sq km are found right here in the Atlantic maritime and highland ecozones. In February 2023, we cohosted two panels on wetland protections with friends at Ecology Action Centre, one for the public and one for wetland professionals, to get a better understanding of where the gaps in protection are and what could be done about them. Here's a bit on what we talked about and what we heard from participants:

Wetlands are defined in Nova Scotia by the Environment Act. They are temporarily or permanently wet environments characterized by poorly draining soils, wet-adapted plants, and other biological activities adapted to wet conditions. They are often the intermediate area between environments like lakes, rivers, or streams and drier uplands, though they also include areas that are only temporarily wet, such as vernal pools. Some have rich mineral soils while others are acidic and dominated by peatmoss.

Swaines Bog, a large raised bog in Kespukwitk/southwest Nova Scotia and home to globally rare Atlantic Coastal Plain Flora, photo by Becky Parker, 2021



A snapshot of the Nova Scotia Provincial Wetland Inventory as shown on the Provincial Landscape Viewer, wetlands from Dartmouth to Chezzetcook, NSDNR, extracted Feb 6, 2023. You can explore the viewer at https://nsgi.novascotia.ca/plv/

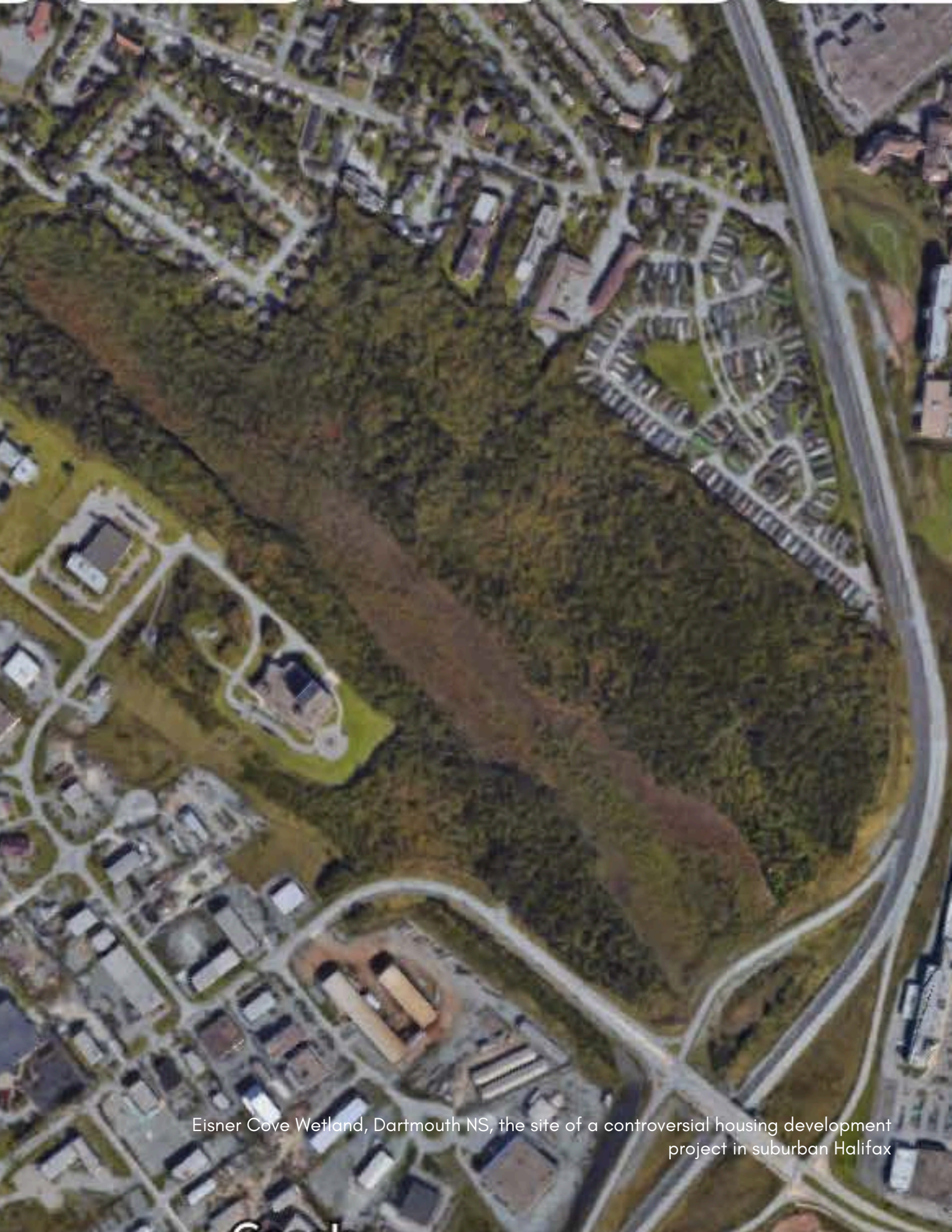
Nova Scotia uses the Canadian Wetland Classification System, which recognizes five general wetland types: marshes (including saltmarshes), bogs, fens, swamps, and vernal pools. Many wetlands exist in a complex of two or more types and may change from one type to another given changing conditions, especially those that change the local hydrology. Generally speaking, though, a marsh contains shallow open water and emergent vegetation like rushes, bulrushes, and cattails. Saltmarshes have saline water because of their position on the ocean, behind barrier beaches, or in estuaries. Bogs, fens, and swamps have acidic and mossy floors with varying degrees of open water and tree cover, and often occur together. Bogs receive most of their water from precipitation alone and contain deep mats of accumulated peat (or Sphagnum) moss and low wet-adapted shrubs. Fens are ground- or surface water-fed and may resemble bogs with streams moving through them. Swamps are similarly peaty and poorly draining but have over 30% tree cover. Vernal pools are small shallow wetlands, often found in forests, that tend to dry out in the summer but provide vital habitat for many breeding amphibians, migratory birds, and other wildlife while they contain water.

A province-wide inventory of wetlands was completed by the Department of Natural Resources in 2004 and serves as the basis for wetland mapping in the province today. It used aerial photographs from 1985-1997, satellite imagery from 2000-2002, and limited ground-truthing to locate and classify wetlands. Most of Nova Scotia's wetlands (>75% according to the inventory) are peatlands (bogs and fens), found along the coasts and

forming the headwaters of many inland watersheds, followed by swamps, found across the province, and saltmarshes, found in coastal areas with particularly large wetlands along the Fundy and Annapolis coasts and in Southwest Nova Scotia. Freshwater marshes and large floodplain swamps are our rarest wetland types, found adjacent to calm lakes and along the inland portion of large rivers.

An estimated 80% of the saltmarshes on the Bay of Fundy and 50% of saltmarshes across the province have been lost since European settlement, when many were dyked for farmland. Historic freshwater wetland loss is likely higher in the Annapolis Valley, Northumberland Strait, and Shubenacadie River areas, where some of the earliest European farms were created on top of appropriated Mi'kmaq lands. As a result, Nova Scotia has lost many of the significant ecosystem services wetlands previously provided, with the loss of saltmarshes alone estimated at over $400 million annually in lost services like flood mitigation and water quality control. Today, wetlands provide an estimated $7.9 billion worth of ecosystem goods and services to Nova Scotians, annually.

Nova Scotia has had a provincial Wetland Conservation Policy since 2011, created in response to a requirement under the Environmental Goals and Sustainable Prosperity Act. It serves as a framework for wetland protection and draws many of its prescriptions from wetland related clauses in several pieces of legislation, including the Environment Act, under an overarching goal of preventing net loss of wetlands. Under this policy, some wetlands are protected from all kinds of development and use through designation as a Wetland of Special Significance. All saltmarshes, for example, are Wetlands of Special Significance, as are wetlands within protected areas and some wetlands known to support Species At Risk or sensitive wildlife habitat. In addition to defining wetlands, the Environment Act also sets out Regulations for alteration approval and environmental assessment, in wetlands not designated as Special Significance. The Wetland Conservation Policy summarizes these prescriptions and creates additional processes for wetland assessment and alteration approval. Wetlands that are not Wetlands of Special Significance may be altered by development or other human use if the project can 1) demonstrate few reasonable alternatives to altering the wetland and 2) the wetland alteration can be offset by the restoration or creation of a new wetland somewhere else, at a ratio of at least 2:1 area restored/created wetland to altered wetland.



Eisner Cove Wetland, Dartmouth NS, the site of a controversial housing development project in suburban Halifax

Wetlands also receive some protection through legislation like the Off Highway Vehicle Act, which regulates ATV use, and the Provincial Subdivision Regulations (under the Municipal Government Act), which require that the location of any wetland be shown on final subdivision plans. Wetlands with open water receive some protection through the use of a buffer (or Special Management Zone) under the Forests Act, though this only applies to wetlands supporting forestry operations.

Nova Scotia's Wetland Conservation Policy is a progressive approach to managing wetlands in Canada. Some provinces don't have any relevant legislation or policies that specifically address wetland loss and, as a result, some municipalities in other areas of the country have been forced to address the need for wetland conservation alone. In many ways, though, wetlands are under-protected in Nova Scotia.

Small wetlands are particularly vulnerable to development, as wetlands under 2ha can be altered without an Environmental Assessment and wetlands under 100sq m without any kind of alteration approval. Small wetlands are also more likely to be missed in attempts to update the provincial wetland inventory, making efforts at saving swamps and vernal pools, even through Protected Areas planning on public land, very difficult. Though some municipalities may implement their own best practices, the province does not require buffers for development or other activities adjacent to wetlands, too often resulting in hard surface development right up to the wetland boundary and changes to wetland hydrology. There are no special considerations mandated for forestry operations in treed wetlands like swamps. And, in cases where wetland alterations are approved with compensation, there's little guiding provincial decision making around what kind of compensation should result from which development. Traditionally, wetland losses to development in urban areas like Halifax (which are largely small peatlands) have been traded for gains in saltmarshes along the Bay of Fundy. Saltmarshes suffering the greatest losses since European settlement, this trade seems reasonable. But taking ecosystem goods and services from one community, one watershed, and/or one traditional Mi'kmaq district, and giving them to another is problematic. So too is the emphasis on physical area as the main indicator of wetland value. Is one small bog worth less than a saltmarsh twice the size? Well, in what way? And to who?

When we get into the details of Nova Scotia's Wetland Conservation Policy and related legislation, it's clear there are several gaps leaving some wetlands at risk:

Law vs Policy

Though innovative in some of its approach, the Wetland Conservation Policy is not law, and therefore more vulnerable to sudden change without public consultation than the legislation governing wetlands. Where some protections for wetlands are found only in the policy and not in legislation, this puts the progress made to date and future efforts at minimizing protection gaps at risk of political interference. (This is exactly what happened later in 2023, when the province rolled back protections for Wetlands of Special Significance without consulting wetland professionals or the public. Read on to our next section for more on those changes)

Outdated Wetland Inventory

The provincial wetland inventory relies heavily on remote sensing and modeling to estimate where wetlands may be, as ground truthing surveys are time consuming and costly. The current profile of the province's wetlands likely needs updating for all wetland types but it may also require improved methodology for detecting small wetlands, which are more easily missed by current methods and almost certainly underestimated in the current inventory. Forested swamps, for example, were likely underestimated to begin with because of the difficulty in detecting them through remote sensing technologies, but the inventory may also underestimate other wetland types simply due to its age. Without up-to-date and accurate wetland mapping, it is only more difficult for the province, municipalities, and Nova Scotians to make plans for wetland management and react to development pressures.

Lack of Standards for Development Around Wetlands

The lack of a minimum provincial standard for buffers in development and other activities near wetlands places the burden of understanding and implementing best practices on individual municipalities, developers, and landowners. Appropriate buffer size and configuration is likely to vary by wetland type, type of development/activity, and expected future pressures on the wetland, and that's a lot for a small town or individual woodlot owner to navigate on their own.

Lack of Definition for Sustainable Development

The Wetland Conservation Policy, by its own definition, "represents a commitment to managing Nova Scotia's wetlands in a consistent manner and to maintaining a high level of wetland integrity for future generations, while allowing for sustainable economic development in our communities." Though there are standardized methods for both defining

a wetland and assessing the potential loss of ecosystem goods and services that wetland provides in the case of a development alteration approval, there is no process for assessing whether a proposed development is "sustainable" or not.

No Place for Mi'kmaq Engagement

Neither the policy nor related legislation make requirements for indigenous consultation in wetland alteration assessments. Though under provincial law, wetlands fall into a gray area between public and private ownership, they may always be considered as treaty lands. The Mi'kmaq never ceded lands in Nova Scotia and under still-current Peace and Friendship Treaties, have the right to access resources found in wetlands. Many Mi'kmaq also claim title to these lands. In whichever case the province decides to recognize, the Mi'kmaq should be included in decision making around wetlands, as treaty participants and/or as title holders.

Conflicting Municipal and Provincial Interests

The bulk of the responsibility for managing wetlands falls, technically, with the provincial government, but in reality wetlands are managed across many jurisdictions and wetland conservation goals can conflict with other areas under municipal or provincial jurisdiction, like housing. A municipality may have particularly strong wetland management processes, even going beyond the provincial policy, but lose wetlands to provincial emergency orders or special planning processes. On the other hand, small rural municipalities with few staff and resources may struggle to conserve wetlands on their lands where the province is offering some kind of economic development partnership. Wetlands, whether municipally or provincially owned, may also be sold to private developers just as any dry land can, without public consultation.

Climate Change Complications

Though the Wetland Conservation Policy makes strides in addressing historic wetland loss, it doesn't do much for setting adaptive goals for the future. Many saltmarshes will need to recede inland in the coming years but existing legislation and policy have few protections for adjacent uplands. The Coastal Protection Act, when it comes into full force, will create a "Coastal Protection Zone" of 80-100m from the sea within which certain regulations will apply (new permits required for development, for example), but it is unclear at this point how these regulations will benefit coastal wetlands, or how anticipated saltmarsh expansion will factor into permitting processes. For other wetland types like bogs and swamps, which offer

major contributions to carbon sequestration, it is unclear how the province will factor wetland loss and gains into carbon budgeting and climate change adaptation goals.

No Net Loss?

Without an up-to-date wetland inventory, we don't know if Nova Scotia is achieving the goal of "no net loss." The Wetland Conservation Policy does not stipulate that "net loss" should be measured by wetland area alone, though that is the current practice. Unless the province were to commit to an in-depth look at its goals and what it has achieved in the decade since the policy came into being, we really have no idea where we stand on the balance of ecosystem goods and services we may be losing in wetland loss or gaining in wetland restoration/creation. As a result, we cannot say for certain how Nova Scotia is contributing to national or global wetland conservation goals.

What's Next?

In 2023, we and partners at ACAP Cape Breton, ECELaw, and Mersey Tobeatic Research Institute collaborated on an application to the Sustainable Communities Challenge Fund that would support a year-long deep dive into wetland protection gaps in Nova Scotia, and support 10 community events like this one where wetland professionals and the public can come together to plan a path forward for wetlands. This provincial fund is designed to support community initiatives that either directly contribute to greenhouse gas capture or help Nova Scotians prepare for and adapt to the impacts of climate change, so we are hopeful that our project will peak the interest of the granting committee. Stay tuned for news on this project!

McIntosh Run, a "Treasured Wetland" designated through the province and Ducks Unlimited Canada's Treasured Wetlands Program. Designation as a Treasured Wetland does not offer the wetland any additional protection.

PROVINCE SECRETLY GUTS WETLANDS OF SPECIAL SIGNIFICANCE

We were alerted to changes being made to the Wetlands of Special Significance program by multiple biologists and naturalists in late 2023, only a few months after we had collaborated with the province on our World Wetlands Day workshop series, also with the Halifax Regional Municipality. Wetlands of Special Significance are meant to receive the highest level of protection under the Wetland Conservation Policy. They cannot be altered except for purposes deemed to be necessary public functions. The changes, which were made by an internally-circulated memo and not through consultation with professionals or the public, stated that the designation of Wetlands of Special Significance would be limited to:

- Wetlands known to support only threatened or endangered species, not vulnerable or special concern species, as had previously been included in the designation process
- A portion of the wetland supporting species at risk, rather than the entire wetlands, as determined by a qualified expert
- The portion of wetland that overlaps with a designated Ramsar site, provincial wildlife management area, nature reserve, wilderness area or other conservation lands, not the entire wetland
- Wetlands where development proponents had noted a species at risk through their own field work, rather than historical records of species at risk

Despite Minister Halman's assurance that these are simply routine updates to internal processes, made in a statement to the media after the news broke, these changes actually represent serious deviations from the Wetland Conservation Policy.

When we hosted our workshop series in Halifax examining gaps in wetland protections, we asked the province if they would be open to receiving recommendations stemming from the workshop proceedings, to which they said yes. To roll back protections for our most important wetlands, only a few months after partnering on that investigation into policy and legislative

gaps, is disappointing to say the least. But we weren't the only ones surprised. Mersey Tobeatic Research Institute compiled recommendations for how the Wetlands of Special Significance program could be strengthened back in 2022, work that was supported by the Department of Environment and Climate Change. None of the recommendations have been implemented. This is why we joined friends at Ecology Action Centre, East Coast Environmental Law, ACAP Cape Breton, Nature Canada, Birds Canada, the Atlantic Salmon Federation, Coastal Action, and PEI Watershed Alliance, releasing a statement in November that condemned the policy weakening and secrecy of the changes.

To put wetland protection aside as an inconvenient barrier to housing development is to put one's umbrella aside in the rain. It is beyond time to update the Wetland Policy in Nova Scotia and it is unimaginable in 2023 that citizens should have to demand such climate action from their representatives.

You Can Help

Talk to your MLA about the need for strengthened wetland protections and transparency in policy changes that affect our shared natural capital.

A boardwalk running through a freshwater marsh-swamp complex in Enfield NS, photo by Becky Parker, 2020

COASTS

COASTAL PROTECTION ACT DELAYED TO 2025

Becky Parker, NatureNS Executive Director

"Canada's Ocean Playground" has a problem. Our coastline is increasingly developed into private vacation homes and tourism attractions, while local access, traditional use, and wildlife habitat are pushed to the side. Nova Scotia has 13,000 km of coastline and sea levels are expected to rise at least 1 m over the next 80 years. Over 70% of Nova Scotia's population lives in coastal communities, but we aren't alone. We share these unforgiving seascapes with an increasingly threatened biodiversity and we are all living under the threat of climate change.

The Coastal Protection Act strives to make Nova Scotia's coastal communities more resilient to climate change through the creation of a coastal protection zone, within which certain types of development will be prohibited or require new permitting and setback distances. The legislation was passed with support from all parties in 2019 but its regulations and, consequently, full implementation of the Act have been delayed several times in the years since. In that time, Atlantic Canada has experienced several record-breaking climate events, including a hurricane producing the strongest landfall winds in the area's history, another hurricane that ended up being the most costly cyclone to hit Canada on record, and record-breaking downpours that caused extensive flooding throughout the province.

Though the Coastal Protection Act is weak in protections for septic systems and wells and is also light on protections for natural systems, prompting criticism from environment and

nature groups, it does offer innovative solutions for protecting other kinds of built infrastructure and indirectly offers some protection to coastal ecosystems. In October, the province invited several thousand coastal landowners to complete a survey about the Act and its proposed coastal protection measures, the third public consultation initiative since the Act was passed. Considering our province's long-standing reputation for lacking consultation and transparency, this many public surveys for important climate change legislation might seem like a step in the right direction. However, the landowner survey was redundantly similar to previous surveys that targeted more stakeholders, it cost taxpayers nearly $100,000 in a contract with the consulting firm, and the province has refused to release the survey results while the public waits for news on the Act. At the time of report writing, the province estimated that the Coastal Protection Act regulations would be delayed until at least July 2025.

This lengthy delay places an undue burden on Nova Scotian municipalities to protect coastlines in their communities through bylaws rather than guiding provincial legislation. Many municipalities have written to the province urging the Department of Environment and Climate Change to catch up on the Act's original timeline and get the regulations finished, not only because council members recognize the need for province-wide consistency in coastal regulations, but also because many municipalities simply lack the capacity to come up with their own solutions. In the meantime, those with the in-house capacity to create their own rules are exploring other routes for coastal protection.

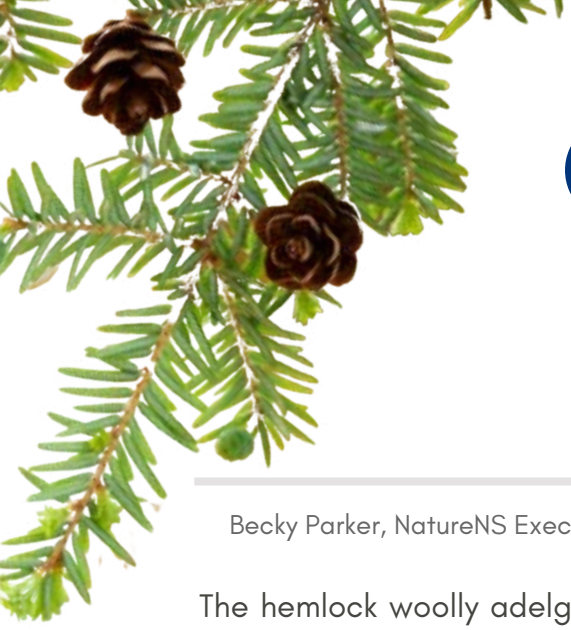
Nova Scotia has mandated Minimum Planning Standards (MPS) under past changes to the Municipal Government Act, where municipalities are required to provide a plan detailing their own coastal protection measures. Though some municipalities already had some coastal protection measures in place, the MPS fosters consistency and adherence to best practice. Halifax Regional Municipality's Municipal Planning Strategy and Land Use By-law, for example, prescribe that development must be a minimum of 2.5m above the high water mark. Lunenburg is developing new rules that will dictate how development occurs on the coast, exploring options like a vertical elevation setback, flood risk zoning, and public education initiatives. Queens Municipality passed new bylaws requiring 100ft horizontal setbacks from the shore. Some of these municipalities are also launching new coastal restoration works at the same time they grapple with creating regulations. In 2023, Halifax Regional Municipality and the federal government agreed to cost-share the several-million-

For many Nova Scotians and their wild neighbours, though, these planning and adaptation initiatives come too late. Cherry Hill Beach in Lunenburg, known to support piping plovers, made the news in 2022 when a developer owning property on Henry Conrad Road revealed plans to create a new RV park adjacent to the beach, worrying locals that the development might attract more tourists, predator-luring garbage, and beach-venturing dogs to the area. That particular area of the Municipality has no zoning regulations, so there is no opportunity for the locals or larger public to sound their concerns for coastal integrity or wildlife habitat and prevent the destructive development. The Coastal Protection Act, if it was ready, wouldn't offer the area any protection either as the Act does not deal with RV parks. In other areas, coastal wetlands are being infilled and development rushed without the necessary permits as developers scramble to maximize profits before the Coastal Protection Act comes into play. In Halifax, rules requiring a set back from the coast for large properties do not apply to small parcels. In these ways, coastal protection in Nova Scotia is achieved in piecemeal actions with significant gaps in between. Given the rate at which extreme weather events are increasing in frequency in Atlantic Canada and the fact that most Nova Scotian's home insurance doesn't cover coastal flooding, these regulation gaps leave many people at serious risk of the worst effects of climate change.

This quote from our previous State of Nature Report is, unfortunately, still relevant, "It's [2023]. We know that climate change will continue to threaten and, in some cases, dramatically changes our coasts. It's time we acted like we have known about this risk for over 50 years."

Our wildlife and our coastal communities depend on it.

Trees felled by Hurricane Fiona in 2022, photo by NSEasternShoreChemist. Fiona was the strongest storm by barometric pressure to ever impact Canada and, with insured losses estimated at $800 million, the costliest hurricane in Canadian history and costliest natural disaster in Atlantic Canada history



OLD FORESTS
RACING TO SAVE
THE EASTERN HEMLOCK

Becky Parker, NatureNS Executive Director, and Donna Crossland, Vice President of the Board of Directors

The hemlock woolly adelgid (Adelges tsugae, "HWA") is a small invasive insect that feeds on the sap and nutrients within hemlock twigs. In western Canada, the presence of adapted predators and natural immunity seem to buffer the HWA's impact on western hemlock (Tsuga heterophylla). HWA infestation in eastern hemlock causes trees to lose their foliage and die, with 95% of trees in an infested stand dying within 4-15 years. HWA infestation often results in the destruction of entire stands because hemlock lacks the ability to resprout after whole tree death. Since 1951, the adelgid has invaded forests across eastern North America from Georgia to Nova Scotia and westward to Michigan, wiping out entire forests in some southern locations.

The towering eastern hemlock tree has been a defining feature of the forest in Mi'kma'ki for millennia. Slow growing and living more than 400 years, hemlocks form the tall, lush, and shady old growth stands that characterize some of Nova Scotia's most iconic woodlands. Beyond the beauty and magical feel of an old hemlock-dominated forest, this quintessential Maritime species also provides critical shelter for wildlife, shades and cools fish-bearing waterways, and soaks up atmospheric carbon to combat climate change. Hemlock forests are home to blackburnian warblers, blue-headed vireos, wood thrushes, and other mature forest-dwelling birds, providing both shelter and breeding habitat as well as food in the cones they produce and insect populations they support. They also play a vital role in determining the composition of the forest around them. Wind is the dominant disturbance in the Wabanaki forest, clearing space for light-hungry birches and other early succession trees and shrubs. Maples and hemlocks are more shade tolerant, growing up underneath a young forest to one day dominate the upper canopy. With the quick death of most if not all hemlocks, many forests in Nova Scotia may become early-succession mixed hardwoods. Though it's difficult to predict what these changes may mean for biodiversity in the long term, in the short term, hemlock diebacks are likely to increase light availability

and temperatures, with important consequences for fish, birds, understory plants, and many other residents of the Wabanaki forest. Reducing the transportation of firewood and increasing monitoring for the HWA have likely slowed spread throughout Nova Scotia but, to date, have not entirely prevented it. Significant hemlock dieback has been observed in western Nova Scotia since 2017, when HWA was first discovered in the province, and new sightings were reported in the Halifax area in 2023.

Natural Resources Canada has been experimenting with biological controls for HWA for some time and in 2023 released the predatory Laricobius nigrinus, a species of tooth-necked fungus beetle native to western North America, into forests in Shelburne, Queens, and Lunenburg counties in an attempt to slow HWA spread. L. nigrinus is specific to HWA and has been used for over 20 years with some success in the northeast United States. In Nova Scotia, researchers want to know if the beetle can establish itself, survive Nova Scotian winters, and follow HWA as the insect migrates.

Keeping hemlocks alive long enough for biocontrol measures like L. nigrinus to take hold requires a specialized pesticide application to prevent HWA infestation in the first place. Five insecticides are registered and approved for use in Canada through Health Canada's Pest Management Regulatory Agency: IMA-jet5%, IMA-jet10%, TreeAzin (all injected directly into the trunk of the tree), Xytect 2F, and Starkie 20SG (which are applied to the bark at the bottom of the tree. Some are effective within only a few months where others may take a couple years to take effect. All are commercial pesticides that require a pesticide applicators certificate to use. In many cases, a single treatment allows a hemlock to survive for 4-7 years before requiring retreatment.

The Medway Community Forest Cooperative has created a Strike Team to treat key hemlock stands in Kespukwitk, modeled after similar programs in the States, consisting of trained hemlock health assessors and pesticide applicators who treat trees over 9 months

of each year. With support from the province and Environment and Climate Change Canada, the Strike Team has targeted and treated high value hemlock stands on public lands, particularly within protected areas. For our part and to address the gap leaving the majority of forested lands under HWA threat, Nature Nova Scotia launched a giving campaign in 2023 to fund hemlock treatments on private lands. We hope to reach $10,000 over 2024, at which point our steering committee will release funds for Strike Team use on lands prioritized by forest composition, the presence of waterbodies, known species at risk habitat, and other ecological values.

You Can Help

Look for HWA near you: Adult HWA can be hard to spot but the fluffy white egg masses that form on the underside of the needles are a telltale sign. Report sightings to iNaturalist or the Nova Scotia Invasive Species Council

Donate your time and energy: Join expert forest ecologists for training on treatment methods and get out into the woods with us. Medway Community Forest Cooperative started hosting training events in summer 2023. Make sure you're following them and help out where you can!

Donate to the Hemlock Conservation Legacy Fund: Your money goes directly towards the purchase of treatment supplies and training sessions for volunteers, allowing us to reach more hemlock trees. Donate today and help us get more trees treated! Learn more at www.naturens.ca

A hemlock branch showing characteristic adelgid egg sacs

Participants on a guided walk in Dartmouth for Bird Week 2023, with Conservation Programs Coordinator Jess Lewis

URBAN NATURE
MAKING HALIFAX FRIENDLIER FOR BIRDS

In 2022, Halifax earned a moderate 28/50 point score on Nature Canada's Bird Friendly Cities rubric, just enough points for entry level status as one of Canada's certified Bird Friendly Cities. In the time since, we and other members of the Bird Friendly Halifax Coalition have been working to improve the city's score by taking on habitat stewardship, policy recommendations, data creation, and public education and outreach initiatives. Bird Friendly Cities are re-assessed on two-year cycles, meaning 2024 will see Halifax fighting to keep (if not improve) its status. The city scored high in rubric items related to bird education, largely due to the work of local ENGOs and nature groups; having active citizen science groups and natural history societies, containing several popular bird watching hot spots, and engaging large numbers of people in events like the Christmas Bird Count and Feederwatch. The municipality had also updated street lights and adopted an integrated pest management guideline before the coalition came together, securing points in threat reduction. In other areas, however, Halifax was judged to be lacking in several bird conservation measures; lacking strategy around biodiversity, limited incentives for planting or maintaining shrubs and herbaceous plants, no coordinated effort to reduce window strikes, and little action to date on reducing predation by roaming cats.

To remedy these gaps, the Bird Friendly Halifax Coalition set out to engage both the public and city representatives in strategic conservation action for urban birds, prioritizing rubric items the city had received low scores in. The coalition, including city staff and Councillor Kathryn Morse, hosted the first annual Bird Week in May 2023, coordinating guided walks in each municipal district for citizens and local councillors that introduced participants to their feathered neighbours and reminded councillors why the city adopted the Bird Friendly Cities movement. As part of the celebrations, the coalition hosted a City Bird competition encouraging Haligonians to vote for their favourite bird and elect an annual Bird Friendly

Halifax mascot, which the black-capped chickadee won after beating out the cardinal, puffin, and Canada warbler.

To address policy and practice gaps, the coalition examined the city's Red Book and drafted recommendations for improving the Regional Plan. The Municipal Design Guidelines (also known as "The Red Book") provide detailed instructions for Halifax Regional Municipality (HRM) staff and contractors building/replacing municipal infrastructure, including trees. While the guidelines do list several species of native trees suitable for bird habitat and include specific directions to ensure a diversity of trees in any given area, they do not prioritize any shrub species or give useful information on how plantings might be arranged to maximize their benefit to birds or other wildlife. We made recommendations for bird-friendly tree and shrub options as well as considerations around timing and other design guidelines. The Halifax Regional Municipal Planning Strategy sets out a common vision, principles and long-range, region-wide planning policies outlining where, when, and how future growth and development should take place between now and 2031. Though the Plan is not under review at the moment, we hope coalition recommendations will be considered in future updates. Themes 7 (Facilities & Parks) and 8 (Environmental Protection) deal the most with the environment, but overall the Plan contains little discussion of biodiversity, including birds. There is work on Wilderness Parks (a new category of parks for places like Blue Mountain Birch Cove Lakes) and identifying and prioritizing wildlife corridors and natural corridors. The coalition recommended adding important bird areas to the Green Network map, creating a new action under Maintain and Enhance the Urban Forest that would require developers to create new habitat where there was insufficient habitat previously, creating a new action under Support the Green Network requiring bird-focused road signs for road development through wetlands, and adopting bird-friendly design guidelines for new city works.

In the summer, the coalition began research into bird-friendly design standards in use or recommended by bird groups in other cities. We hope to compile recommendations for HRM in 2024.

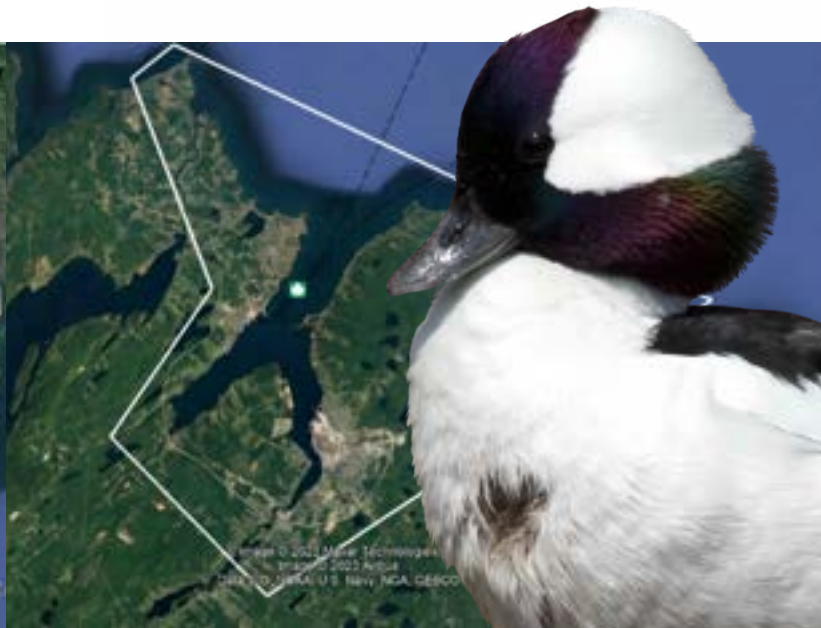
In December, the coalition began planning for the second Bird Week celebration coming up in 2024 and adopted the Migratory Bird Day theme of Insects and focus on aerial insectivores. Stay tuned for information on how to get involved and for updates on new Bird Friendly Halifax projects!

NEW WATERBIRDS MONITORING PROJECT IN HALIFAX AND SYDNEY

Our friends at Nature New Brunswick approached Nature Nova Scotia staff in 2023 to share lessons learned from their multi-year Port of Saint John Waterbird Survey and gauge interest in starting a similar program in Nova Scotia. The Port of Saint John Survey has operated since 2018 with the support of Fisheries and Oceans Canada, the New Brunswick Wildlife Trust Fund, and Environment and Climate Change Canada, and was designed to improve knowledge of waterbird populations and support oil spill preparedness in one of Atlantic Canada's busiest ports. In recent years, the program has leveraged the time and knowledge of volunteer citizen scientists to monitor over 30 sites around the harbour. Noting the rapid growth in both the Halifax and Sydney harbours and the abundance of hobby birders around the province, we immediately saw potential for a similar program to provide data for Nova Scotian ports.

With the support of the Canadian Wildlife Service, we initiated planning and ground-truthing activities in late 2023 to identify and assess monitoring sites around the Ports of Halifax and Sydney. Thanks to the insight of our friends at the Nova Scotia Bird Society and Birds Canada, we have identified ___ sites and are now in the process of collecting preliminary data to test the usefulness of these sites and recruiting volunteers to take on the long-term monitoring duties of each one.

Stay tuned for news on our program launch! Want to get involved? Reach out to Jess at jess.lewis@naturens.ca



OUR DEEPEST THANKS TO OUR SUPPORTERS THIS YEAR

We are grateful for the support of the Echo Foundation, Nature Canada's Naturehood and Work to Grow programs, the HRM Community Fund, the collaboration of our member organizations, and the many concerned nature lovers across the province who donated and volunteered on our projects this year. We couldn't do it without you.

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