



LONG RANGE BIODIVERSITY

Protecting the biodiversity of the Long Range region

Newsletter
Vol. 3, No. 1
Dec. 2021

Coordinated, multi-partner actions for the protection and recovery of terrestrial Species at Risk (SAR) and their habitats in western Newfoundland.

With leadership funding from Environment and Climate Change Canada, the project seeks to:

- Improve recovery and conservation for 17 SAR.
- Improve protection and restoration of coastal and forested SAR habitats.
- Strengthen coordinated, multi-partner conservation actions.
- Engage local communities and citizens, including First Nations.

In This Issue:

Targets, Threats, and Priority Actions for:

Coastal Area Species p. 1
 Shorebirds..... p. 1
 Vascular Plants..... p. 3
 Northern Limestone Barrens.....p. 4
 Southern Limestone Barrens p. 4

Forested Area Species p. 5
 Mammals p. 5
 Little Brown Myotis & Northern Myotis p. 5
 Newfoundland Marten p. 6
 Plants: Black Ash p. 7

Place-Based Conservation.....p. 8
 Ecological Reserves, Provincial Parks, & Protected Areas..... p. 8
 Municipal Stewardship p. 8
 Landbird Survey Updates..... p. 8

Newsletter Editors: Claire Brenton, Cassia Foley, Kathleen Blanchard. Contributions from Russell Wall, Eric Bennett, Luise Hermanutz, Jennifer Sullivan, and Jessica Humber.

Second Workshop Reports on Actions for Targeted Species and Priority Threats

Forty-five conservation managers, researchers, and stewardship coordinators met online March 9 and 10, 2021 for the second annual workshop of the Long Range Biodiversity Project in western Newfoundland. This newsletter presents a summary of the presentations given at the workshop.

During the weeks leading up to the workshop, people met in small committees that were organized by species group. They decided upon a manageable list of target species and priority threats. They also explored how to strengthen collaboration for more focused conservation action.

At the workshop, lead spokespersons from each group presented a consolidated summary of targets, threats, and priority actions. It was informative and fast-paced. During discussions that followed, the energy was palpable as people began to imagine possibilities for synergistic outcomes.

We extend a hearty thanks to the many presenters, session facilitators, guest speakers, and note-takers. For further information, please contact presenters directly or email us at info@intervale.ca.

COASTAL AREAS

Piping Plover (*Charadrius melodus melodus*)

Federal Status: Endangered
Provincial Status: Endangered

The population for surveyed beaches in southwestern Newfoundland has been in decline overall since 2009. In 2020, 12 Piping Plover pairs were counted in the region, with a productivity rate of 0.88 chicks/monitored pair. In 2021, there were 13 breeding pairs—further evidence that the breeding population for NL is substantially lower than the long-term objective of 30 pairs. For six pairs monitored by Intervale in 2021, the productivity was 1.5.



54 Piping Plover adults and chicks have been banded and marked with a flag bearing an individual ID.

Threats: The main threats that partners address stem from recreational activities on beaches: increased use of ATVs and dirt bikes, more beach users, unleashed pets, garbage left behind, and trail and cottage development. Other threats include native and non-native predators, climate change, and increasing extreme weather events.

Guardian Program: Intervale and Qalipu First Nation provide protection and monitoring through beach patrols, tracking of plover nests, and talking with beach users about how to reduce threats. Additionally, the number of beach walkers, vehicle traffic, sign vandalism, and predators are tracked using stewardship indicator forms. Each year beach guardians complete approximately 100 or more forms, which Intervale compiles into a database. Analysis reveals



Piping Plover beach sign and interpretive panel

pressures specific to each beach and informs the strategy for conservation action.

Beach Signs and Interpretive Panels: Each breeding season, on beaches with known plover nesting, Intervale and partners install >25 beach access signs (pictured); the Government of NL installs “no vehicles/ATV” signs. An interpretive panel produced by Intervale is installed at three beaches within Provincial Parks.

Beach Clean-ups: Beach clean-ups are periodically organized and are particularly productive at Black Bank and Sandy Point. Qalipu First Nation, Nature Conservancy of Canada, and Intervale have found beach clean-ups to be great opportunities for engaging local volunteers. Timing and location are critical considerations in avoiding disturbance to nesting birds.

Guest Boxes: Intervale placed a hand-painted box containing a guest book and free garbage bags near the beach access point at Codroy Valley Provincial Park. Sixty-seven visitors representing 8 provinces signed the guest book in its first season, revealing information helpful to conservation planning.



Guest box at Codroy Valley Provincial Park, painted by youth artist Isabella Nolan

Vehicle Counters: Vehicle counters provided by Environment and Climate Change Canada (ECCC) are used to count the number and activity of vehicles on certain beaches. In 2020, more than 267 vehicle crossings occurred during a 3-week period on Big Barachois beach, with most of the traffic occurring on weekends and afternoons.

School and Public Presentations: Classroom presentations and discussion on Piping Plover ecology, threats, and best practices for beach use are given to students, grades 1-12, and to the public. This has proven to be an effective strategy for increasing awareness and reducing threats.

Placemats: For many years, Intervale has produced informational placemats containing important facts about Piping Plover ecology, threats, and practical steps the public can take to assist in recovery. Placemats are distributed to restaurants throughout southwestern Newfoundland and in proximity to beaches with plover activity.

Sample Accomplishments April 2020 - Nov. 2021:

162 (2020), 99 (2021)
Piping Plover threat indicator surveys

10 (2020), 13 (2021)
Piping Plover pairs monitored

6
Nature Conservancy of Canada nature reserves monitored for SAR

72
Black Ash trees on NCC reserves mapped

22
Braya plants potted in Sandy Cove restoration

89
Limestone Barrens transplantation islands: 5 seeded plots completed

65 (2020), 38 (2021)
Bat conversations with cabin owners

78 (2020), 75 (2021)
Marten and bat monitoring volunteers

210
Youth and adults at 15 presentations

13
Bank Swallow colonies surveyed

15 (2020), 13 (2021)
Shorebird species monitored; 2 flagged Red Knots (US, Argentina)

210
Eider nest shelters checked, 70 removed or restored

8
ARUs deployed on islands for Leach's Storm-petrel

141
Land bird species recorded for Breeding Bird Survey

Band Resighting: Banding research has been underway by ECCC for several years. With the help of partners and volunteers, researchers seek to understand the migration patterns of Piping Plovers, threats they encounter on the wintering grounds, and whether they are returning to certain beaches each year. A total of 54 adults and chicks have been banded in Newfoundland; each wears a colour-coded flag with visible identification code. Most of the birds from the Atlantic region overwinter in the Bahamas and Caribbean and return to the same province where they were banded.

Coordination with Government Groups and First Nations: The Government of NL, Intervale, Qalipu First Nation, Parks Canada, and Canadian Wildlife Service (CWS) conduct monitoring surveys; CWS coordinates data for the entire Atlantic Region.

Keeping Track of Potential Predators: Partners monitor, track, and report on the presence of native predators, such as foxes and gulls, and non-native/invasive predators, such as mink, dogs, and feral cats.

Monitoring Nest Success on Beaches: Climate change is increasing the severity of extreme weather events; for instance, beach loss is often attributed to storm surge events. Monitoring nest success involves tracking such pressures and the influence of global warming.



Piping Plover nest and eggs

Red Knot (*Calidris canutus rufa*)

Federal Status: Endangered
Provincial Status: Endangered

Recovery Objective:
To halt decline by 2025



Red Knot juveniles observed at Anchor Point

Red Knots migrate up to 15,000 km one-way each year, with few stops along the way. Certain beaches of Newfoundland and Labrador are important stopovers, providing food and rest for the long migration.

Threats: Habitat loss from harbour development, disturbance from ATVs and other vehicles, pollution from runoff and discharge from ships, marine debris, predators such as mink and falcon, climate change, and occasional hunting.

Priority Actions: Build community awareness and support, conduct monitoring surveys, provide stopover surveillance, install interpretative panels, conduct beach clean-ups, present birding workshops, distribute informational placemats, support establishment of Stewardship Agreements with municipalities.

Vascular Plants

Limestone Barrens Recovery Plan: The Limestone Barrens Recovery Plan is a multi-species plan with Critical Habitat (CH) identified, legislated under the provincial Endangered Species Act (ESA). The Plan includes 10 plant species listed under the provincial ESA, four of which are listed under the federal Species at Risk Act (SARA).

Three of the 10 species listed in the Recovery Plan are endemic to the island of Newfoundland; the remainder have highly distinct and restricted ranges. As such, these species are adapted to their unique habitat and highly susceptible to changes and disturbance. The Plan outlines threats, recovery goals, objectives, and actions for the 10 species listed. The Recovery Plan was revised and submitted to the government for review and release.

Northern Limestone Barrens

Threats: Limestone plants are threatened by habitat loss and degradation through quarrying and built infrastructure; pests and pathogens, i.e., herbivory on Braya species by Diamondback moth (*Plutella xylostella*) larvae, and fungal pathogens common in agriculture such as *Fusarium*, *Botrytis*, and *Boeremia*; climate change; recreational activities like ATVs and other off-road vehicles; and ecotourism.

Current Restoration and Mitigation Efforts: Long's braya translocation plots were monitored and new plots added; plants transplanted into vegetation islands in 2016/17 were monitored; critical and optimal habitats that have been degraded by quarrying were ground-truthed and prioritized for future restoration. The Sandy Cove restoration area included 22 braya planted plots, 5 additional seeded plots completed, and 89 transplantation islands. Ten soil temperature loggers were reinstalled in planted braya plots to monitor freeze-thaw disturbance regime. Multiple insect herbivores were tracked and damage to braya plants assessed; plant material was sampled over the summer for presence of fungal pathogens; insects were harvested to determine if they are the vectors of fungal spread; both insects and plants are being analysed using genetic markers for the presence of fungal pathogens.

Current Results: Monitored braya plots indicate that plants are persisting for 5 years and some are reproducing; natural small-scale freeze-thaw disturbance was reinstated in the restored Sandy Cove site; plants established in vegetation islands are persisting; a number of pests and pathogens were identified and management options are being developed; prioritized list of quarries to be restored was completed; seeds were collected for the ex situ braya seed bank; braya genetic analyses are underway; barrens willow samples were collected for genetic analyses.

Stewardship Results: Educational products soon to be released include a colourful storyboard, brochure, and three video clips including one with French translation. A best practices ecotourism document is in development.

Future Priority Actions: Continue to monitor braya emergence and persistence; continue to monitor pest and pathogens; develop management strategies of pests and pathogens; restore high priority habitats when funds become available; selective harvest of pest and pathogen resistant plant lines for ex situ collection; model climate change impacts; consider assisted migration to increase probability of persistence; and continuing to engage local citizens and partners and conduct educational activities in local communities and schools.

Species	Legal Status	
	Endangered Species Act (Provincial)	Species at Risk Act (Federal)
Barrens Willow	Endangered	Endangered
Fernald's Braya	Endangered	Endangered
Long's Braya	Endangered	Endangered
Griscom's Arnica	Endangered	Threatened
Woolly Arnica	Endangered	Not listed
Oval-leaved Creeping Spearwort	Endangered	Not listed
Bodin's Milkvetch	Threatened	Not listed
Mackenzie's Sweetvetch	Endangered	Not listed
Low Northern Rockcress	Endangered	Not listed
Lindley's Aster	Endangered	Not listed

Northern Limestone Barrens (rows 1-7)
Southern Limestone Barrens (rows 8-10)

Southern Limestone Barrens

Three Target Species: Mackenzie's Sweetvetch (*Hedysarum alpinum*), Low Northern Rockcress (*Braya (Neotorularia) humilis*), Lindley's Aster (*Symphyotrichum ciliolatum*). Collaborative efforts currently underway include monitoring the number of plants, demographics, reproductive output, pathology, and plant cover.

Mackenzie's Sweetvetch and Low Northern Rockcress:

Threats: Off-road vehicles, infrastructure maintenance, and land development.

Priority Actions: Determine species' distributions, monitor plant health and survivorship, determine population drivers and stressors, develop Critical Habitat collaboration among levels of government, and create protected areas.

Lindley's Aster:

Threats: Roads, quarries, seismic lines from oil exploration, wood harvesting, moose, and ATVs.

Priority Actions: Determine extent of the problem and develop critical habitat.



Mackenzie's Sweetvetch and Low Northern Rockcress



Lindley's Aster

Current Knowledge Gaps: Location of Critical Habitat and rare/at risk species occurrence. Addressing knowledge gaps will allow for more effective conservation of the Limestone Barrens and its species in the future.

Looking forward, to develop a more accurate classification of Southern Limestone Barrens habitats, higher resolution imagery (at least 3 m resolution) in combination with ground truthing will be employed. Other solutions include identification of Critical Habitat for future protection, provide information of disturbance encroachments, and provide a starting point to monitor future changes.

FORESTED AREAS

Mammals

Little Brown Myotis (*Myotis lucifugus*) & Northern Myotis (*Myotis septentrionalis*)

Federal Status: Endangered
Provincial Status: Endangered



Little Brown Myotis

Threats: White-Nose Syndrome, colony eradication by people, and loss of mature/overmature forests. Other less studied threats include wind energy, heavy metals (i.e., mercury), pesticides used in agriculture and forestry, reactivation of old mines and backfilling, and climate change.

White-Nose Syndrome (WNS): WNS is caused by the non-native fungal pathogen *Pseudogymnoascus destructans* (Pd). Population declines to Little Brown Myotis and Northern Myotis of ~90-99% in eastern North America are due to WNS.

Minimizing Human-Mediated Spread of WNS: De-contaminating gear, spreading awareness about sites that should not be entered, and getting the message out to the public about WNS will help to minimize the spread of WNS by humans.

Addressing Knowledge Gaps about WNS: Swabbing sites for Pd, conducting bat population counts, submitting dead bats for necropsy, guano testing (a method to identify Pd spores), and monitoring environmental conditions to see in which conditions Pd is thriving.



Provincial government staff monitoring Little Brown Myotis populations in a bat hibernaculum in NL

Partnership with Canadian Wildlife Health Cooperative (CWHC): In partnership with the provincial government, the CWHC developed ‘Bats in Buildings Best Management Practices’ for two buildings in Newfoundland, provided training workshops for Pest Control Operators and Conservation Officers, and developed a toll-free bat hotline, to tackle fears and misconceptions and to provide information about bats.

Engagement with Cabin Owners: Intervale is engaging with cabin owners through conversations, interviews, presentations, and stewardship materials about bat conservation.

Future Actions: The provincial government is in the process of forming a recovery team to identify goals, objectives, and actions to support recovery of these two species in NL. Future stewardship efforts include encouraging opportunities for citizen science (e.g., emergence counts, Canada Bat Box Project), responding to public calls/concerns, public outreach (media releases, radio interviews, and presentations), and acoustic monitoring programs to help determine relative bat abundance, activity levels, habitat use, and population change.

Newfoundland Marten (*Martes americana atrata*)

Federal Status: Threatened
Provincial Status: Threatened

Increase from 438-852 to 2,500-2,800 individuals in NL in the past 12 years

Threats: Hunting and fur trapping, non-native and native predators, climate change, and habitat loss from logging, mining, and roads.

Population increases are likely a result of several factors, including the change from stainless steel to 22-gauge brass and 6-strand braided picture cord, which reduce incidental catch, a large reduction in the timber harvest, and an increase in prey abundance such as red-backed voles. More marten occurrences are being recorded, resulting from widespread efforts by volunteers and technicians throughout much of Newfoundland, using a hair snagging method that detects marten presence and enables confirmation by means of genetic testing. Information gathered from the network of marten hair snag volunteers has helped managers gain further insight into marten distribution and range expansion, habitat use, and range size.



Newfoundland marten are showing signs of recovery.

Promotion and Distribution of Modified Trapping Tools with Educational Events: Intervale has distributed 22-gauge brass wires, floating mink boxes, and informational pamphlets (*Snaring in Newfoundland; How to Build a Floating Mink Box*) to hunters and fur trappers in Newfoundland and Labrador. The particular snare wire distributed has been scientifically tested and found to be easier for marten to break free from if accidentally caught. Floating mink boxes are used to capture mink, without the risk of accidentally capturing marten.



Qalipu First Nation staff member installs a hair snag device.

Hair Snag Field Work: Marten hair snag field work by Qalipu First Nation is executed in Northern Arm Hills and Lewis Hills, helping to document distribution and abundance in survey areas. Intervale coordinates a network of >62 volunteers who take part in the Hair Snag Program. Results have led to the identification of new areas of marten presence.

Review of Development Plans & Applications: The provincial government reviews wood harvesting 5-year plans and mining and quarrying applications, providing mitigations and best practices for wood harvesters, miners, and quarriers. Wood harvesters are also encouraged to report marten sightings.

Habitat Protection: Little Grand Lake Provisional Ecological Reserve and Glover Island Public Health Reserve were established to protect marten and their habitat.

Research on Road Mitigation: Gros Morne National Park is performing research on present road mitigation options within Terra Nova National Park. The goal is to reduce wildlife mortality from roads and to enhance ecological connectivity.

Forest Plants

Black Ash (*Fraxinus nigra*)

Federal Status: Threatened
Provincial Status: Not Yet Listed



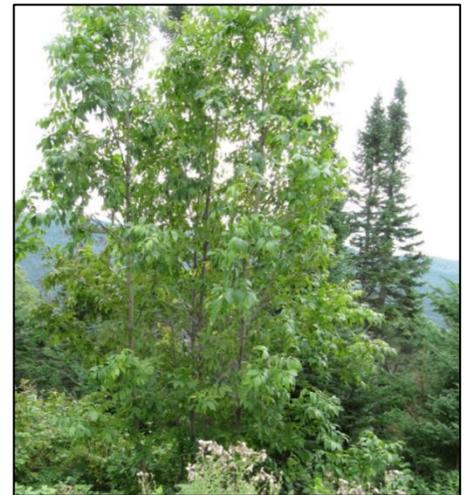
NCC staff member caging a black ash tree

The Black Ash is of national concern due to the Emerald Ash Borer, a non-native and invasive insect that feeds on ash species. In 2020, the Emerald Ash borer spread to Nova Scotia; this insect has not yet been found in Newfoundland, which may serve as an important refuge.

Threats: Felling by beavers, moose browsing, deformities, top dieback, stunted growth, low vigour from insect attacks, hydro line maintenance, land development, and disease.

Nature Conservancy of Canada (NCC) Black Ash Property: Located north of Deer Lake, near Reidville, it contains a growing population of approximately 72 black ash trees.

Current and Future Priority Actions: Metal cage installation to protect from beavers, annual monitoring of damage from animals and humans, monitoring of seed production, maintaining an open line of communication with Newfoundland Hydro (to promote trimming rather than cutting and spraying of insecticides), and installing signage in the region about the importance of black ash. Future actions include seed collection during bumper seed crop years, sending seeds to National Tree Seed Center, and discovering new methods for monitoring for Emerald Ash Borer.



Black ash trees

PLACE-BASED BIODIVERSITY CONSERVATION

Ecological Reserves, Provincial Parks, & Protected Areas Plan for Newfoundland

The Long Range Biodiversity project area includes 7 Ecological Reserves, 10 Provincial Parks, 16 proposed Wilderness or Ecological Reserves, 1 National Park, and 2 National Historic Sites. Protected areas play a significant role in the conservation and recovery of species at risk.

Threats: Housing development, oil and gas, mining and quarrying, roads, logging, and agriculture are all threats that protected areas have been successful at addressing. Other threats include utility lines; hunting and trapping; domestic wood harvesting; changes in temperature, precipitation and hydrology; sea-level rise; severe weather events; pathogens and pests; and recreational activities. Threats can be difficult to address because the region is vast and certain activities are difficult to monitor or enforce.

Priority Actions: Education, stewardship, enforcement of regulations, inventory, and frequent monitoring.

Municipal Stewardship

There are 13 Stewardship Agreements between the Province of NL and municipalities within the Long Range Biodiversity Community-Nominated Priority Place, and one Agreement between the Province of NL and a Ramsar site.

Addressing Primary Threats: The Stewardship Association of Municipalities (SAM) contributes to the recovery and conservation of species at risk and their habitats in several important ways. SAM works with municipalities to help provide support when facing pressures from development, habitat encroachment, and heavy and unsustainable use of natural areas. The network of SAM membership provides encouragement to communities through shared experiences and lessons learned.

Stewardship Benefits to Communities: Stewardship Agreements between the Province of NL and municipalities enable citizens to engage directly in the stewardship of important wildlife habitat within their municipal boundaries. Benefits include protecting “special places” and wildlife in the community, protecting places of community value, increasing eco-tourism appeal and infrastructure, raising awareness, enhancing wildlife viewing, providing management demonstration sites, serving as outdoor classroom areas, and performing many ecological functions such as water purification and protection against floods.

Relevant Stewardship Goals: Empower communities to take ownership of protecting wildlife habitats within or adjacent to their jurisdiction; assist communities in identifying areas for stewardship and wisely conserving these areas; maintain or increase wildlife use of these habitats; and increase public awareness of the value of natural areas.

Landbird Survey Updates



Map of Proposed Protected Areas in Western Newfoundland

Canadian Wildlife Service: The Boreal Landbird Monitoring program includes 400 plots across Newfoundland and Labrador, with 175 surveyed once every 10 -15 years. The focus of these surveys will be on western Newfoundland for the next 2 years, and surveys will estimate abundance, distribution, and trends of Newfoundland birds.

Parks Canada: Winter bird surveys monitor biodiversity in forest habitats throughout parks, including the status and distribution of the Red Crossbill (*Loxia curvirostra percna*). Stationary point count surveys are completed twice in a 5-year cycle.

Twenty-nine male Gray-cheeked Thrushes (*Catharus minimus*) were fitted with GPS tags in 2016. Four tagged thrushes were recaptured in 2017, indicating high migratory connectivity from Newfoundland to the Sierra Nevada de Santa Marta in Colombia. This study was scheduled to be repeated in 2021 with additional tags.

Province of NL: The Wildlife Division conducts various land bird surveys. Winter bird surveys, which began in 2008, target primarily black spruce and red pine sites on the West coast. Focusing primarily on the West Brook Ecological Reserve in collaboration with the Natural Areas Program, these have potential for being a focal point for Red Crossbill.

Birds Canada: The goal of the Newfoundland Breeding Bird Atlas is to map the distribution and abundance of Newfoundland breeding birds and to collaborate with citizen scientists. The Atlas helps managers address threats to species by mapping species distribution and abundance at large spatial scales and describing species-habitat associations. The Atlas also collects audio recordings and partners with industries and communities on outreach and educational activities.

We thank the following people for their contributions to the workshop and to this newsletter: Jackie Bauman, Liz Belanzaran, Eric Bennett, Kathleen Blanchard, Greg Campbell, Catherine Dale, Katherine Flores, Shelley Garland, Jeri Graham, Claudia Hanel, Luise Hermanutz, Dulcie House, Alyssa Hunter, Holly Lightfoot, Shelley Moores, Karen Potter, Bruce Rodrigues, Jonathan Sharpe, Jonathan Strickland, Ian Sullivan, Jennifer Sullivan, Russell Wall.

Photo credits: Russell Wall (Piping Plover), Kathleen Blanchard (Red Knot), Claudia Hanel (Limestone Barrens), Brock Fenton (Bats), Jessica Humber (Bats), Qalipu First Nation (Marten hair snag), and NCC (Black ash).

We are grateful to the many organizations and individuals who provided financial or in-kind support for the workshop, including:

This project was undertaken with the financial support of the Government of Canada.
Ce projet a été réalisé avec l'appui financier du gouvernement du Canada.



Additional Long Range Biodiversity project support is provided by:



Intervale is a non-profit organization, incorporated in Newfoundland and Labrador, with a mission to conserve biodiversity, interpret heritage, and promote the integrity of rural livelihoods. For more information, please contact Intervale at info@intervale.ca or visit www.intervale.ca.

Intervale Associates Inc.
PO Box 172
Doyles, NL A0N 1J0 Canada
Tel: 709-686-5927

