



LONG RANGE BIODIVERSITY

Protecting the biodiversity of the Long Range region

Newsletter
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The Long Range Biodiversity Project is devoted to the protection and recovery of species at risk and their habitats in Western Newfoundland—the most biodiverse region of the Province.

Funded under a multi-year (2019-2023) leadership contribution from the Canada Nature Fund, Community-Nominated Priority Places (CNPP) for Species at Risk, the project is supported by Environment and Climate Change Canada (ECCC). Partnering organizations and individuals provide additional support and essential expertise. The project benefits over 50 species and their habitats, including 19 species at risk. It also strengthens partnerships and engages local communities and citizens, including members of First Nations.

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The second year of the Long Range Biodiversity project began just as the world was realizing the magnitude of the COVID-19 crisis. Organizations, businesses, government departments, indigenous groups, and universities were temporarily closing offices and cancelling activities. It was a season of fear and uncertainty.

With guidance from medical officers and with adherence to directives under a provincially phased approach, the region withstood the impact of the pandemic’s first six months. Long Range Biodiversity partners entered the field season with an adaptive management approach and tools for COVID safety. They set their minds on, not what was shut down, but what was safe and practical to be done.

As global citizens, we put our trust in science that argues for the need to address all three pandemics: COVID-19, climate change, and the loss of biodiversity. We encourage everyone to do whatever he or she can to help. We thank all our project partners and volunteers for working safely and diligently, while caring for one another and sustaining hope. (KB)



Pests, Pathogens, & Plant Survival on the Limestone Barrens

This past summer, the work by the Limestone Barrens Recovery Program (LBRP) was focused in three areas along the Great Northern Peninsula: Savage Cove, Sandy Cove, and Green Island Brook, in an effort to address recovery actions outlined in the Braya Recovery and Action Plans for Long’s Braya, *Braya longii*, and Fernald’s braya, *B. fernaldii*.

COVID-19 restrictions meant that the Science group, Dr. Luise Hermanutz and Corrina Copp, assisted and analyzed from afar, while LBRP manager Dulcie House



A light trap used to collect insect pests such as Diamondback Moth.

led on-the-ground activities, assisted by local summer student Jeff Applin. The group was able to tackle multiple projects, maintaining and monitoring restoration sites while launching new techniques in the pests and pathogens study.

The pests and pathogens work is a collaborative effort led by Dr. Hermanutz, with expert insight from Dr. Kirk Hillier of Acadia University, Nova Scotia, and Drs. Paul de la Bastide and Terrie Finston from the University of Victoria, British Columbia. The goal is to understand how insects and pathogens affect the survival of the endangered endemic Limestone Barren plants, Long's braya and Fernald's braya. The major pest of interest is the Diamondback Moth--a non-native species that is carried from southern United States to Newfoundland by high-altitude winds. The pests, which feed on mustard plants such as cabbage, are attracted to the chemical signature of the braya plants. Once a moth finds a braya plant, it lays eggs that hatch into larvae, which consume the leaves and flowers of the plants. The researchers have learned that pupating larvae do not survive Newfoundland winters and therefore the annual infestations on braya are the result of actions by moths that arrive from the U.S. each year.

Pests and pathogens can be especially concerning for the restoration plots, where the plants must overcome adverse conditions to reestablish. This year was a particularly notable year for Diamondback Moths. During the past few years team members had reported minimal damage from larvae but during the 2020 field season they observed a marked increase, both in the number of moths and in the subsequent number of larvae hatched on the braya plants.

Through the use of pheromone traps, which attract male Diamondback Moths, and light traps, which attract other insects, Dulcie and Jeff were able to collect a sample of potential pests that visit the area. They sent insects to Dr. Hillier for identification and for analysis of the impact of the insects on braya plants.



A Diamondback Moth is collected for analysis.

From June through September, Dulcie, assisted by Jeff, diligently monitored the plants for overall health and the presence of pests. With government permits secured, she also took tiny samples from the plants and sent them to Drs. De La Bastide and Finston for analysis of fungal pathogens present in the plants.

The results of the analyses by Drs. Hillier, De La Bastide,

Sample Accomplishments

April-Sept.
2020

162

Piping Plover threat indicator surveys. 10 breeding pairs monitored

82

Workshop participants: 61 youth, 19 adult. 8 workshops

22

Limestone barrens restoration plots monitored

210

Eider nest shelters checked, 7 islands. 48 removed, 22 restored

7

NCC nature reserves monitored, SAR, non-native sp.

25

Bat cabin conversations

and Finston will assist the team in their efforts to understand how the pests and pathogens interact to cause damage to the plants. One question is whether the Diamondback larvae and other pests spread the fungal pathogens from plant to plant as they feed. Knowledge from these studies will help inform the Limestone Barrens Species at Risk Recovery Team how best to mitigate these threats.

A bit about our great field staff! Dulcie House has been the project manager for the project for almost 20 years and is from River of Ponds, Great Northern Peninsula. Jeff Applin, who is from nearby Savage Cove, began working on the project after he completed Grade 9 at the local high school. He just completed his fourth summer as the student field assistant, spending long days collecting data from light traps and

pheromone traps and assisting Dulcie in pest and pathogen monitoring. He also aided Dulcie in the restoration work involving the monitoring of 22 plots. As a resident of the area, Jeff assists with stewardship activities and public outreach about the value of protecting and restoring limestone barrens habitat. His support, dedication and deep interest in the Limestone Barrens research has been invaluable to the team. Jeff developed extensive research skills and worked closely with many professionals along the way.

In spite of the challenges posed due to COVID-19, great teamwork has resulted in the LBRP's 2020 Field Season being very productive! The actions described will help ensure the long term conservation of these species at risk and their globally rare and fragile limestone barrens ecosystem. 

Monitoring Rare Plant Species on Nature Conservancy of Canada Reserves

The Grand Codroy Estuary Nature Reserve is a collection of properties totalling 647 acres, which are protected and managed by the Nature Conservancy of Canada (NCC) and are situated along the Grand Codroy River in southwestern Newfoundland. The Grand Codroy Estuary, which includes NCC's reserve, is recognized as the only Ramsar Wetland of International Importance in the Province. The Codroy Valley overall is rich in biodiversity. Habitats support 243 species of birds--more than one-half the number recorded for the entire Province.

In August, provincial botanist Claudia Hanel joined NCC staff member Julia Lawler and intern Jennifer Sullivan for a thorough assessment of ecosystem classification, human use, and plant species on a newly acquired property within the NCC reserve. They searched especially for rare plant species, including large (or feathery) false Soloman's-seal, *Maianthemum racemosum*, which is listed as provincially endangered



The Grand Codroy Estuary Nature Reserve.

and has been reported from only three locations, all in western Newfoundland. The NCC team also monitored species at the Sandy Point reserve in Bay St. George. Sandy Point contains beach habitat for nesting Piping Plover, an endangered species, and for rare plant species including sea-lavender and saltwater cordgrass. Although in recent years Sandy Point has been experiencing an increase in human visitors, the NCC team believes that many people are following best practices, especially by restricting all-terrain

vehicle use to established trails. People have also been demonstrating their concern by volunteering for an annual beach-clean up organized by NCC.

The aptly named Black Ash Nature Reserve in Reidville, a community just north of Deer Lake, is dedicated to the conservation of black ash, a tree species that is listed federally as threatened and provincially as vulnerable but currently undergoing re-assessment. The numbers of black ash are low in Newfoundland, which is the northern extent of the species' range. Each year NCC staff monitor the health of black ash individuals on this property, with hopes of maintaining a healthy population and the possibility of collecting seeds to contribute to the National Tree Seed Centre.

Intern Jennifer Sullivan is a graduate student at MUN with experience in non-native plant establishment in natural areas of Newfoundland. Jennifer was pleased with all that she learned while helping to assess the health of vulnerable black ash trees and search for rare plants within

NCC's reserves. She described the internship as "...An incredible experience...working with such knowledgeable and passionate people, surveying for new plant species, and participating in different facets of conservation." She went on to say, "It has further solidified my passion for the conservation of Newfoundland and Labrador's natural areas, for future generations to use as we use them today." 



Jennifer Sullivan visited NCC's 3,879-acre Grasses Nature Reserve, at the headwaters of the Robinson's River in southwestern Newfoundland.

Piping Plovers Return, Trail Box Welcomes Beach Walkers

Field teams from Qalipu; the Department of Fisheries, Forestry and Agriculture; Parks Canada; and Intervale monitored the Piping Plover beaches of southwestern and western Newfoundland for breeding pairs, nesting success, and re-sightings of banded and flagged Piping Plovers. All Piping Plover beaches that have been active in recent years fall within the Long Range Biodiversity project region, with the exception of occasional records from Deadman's Bay in central Newfoundland.

Although results have not yet been finalized, approximately 11 pair of Piping Plover nested on beaches from the Stephenville Crossing area to Port aux Basques and Burgeo. Twenty-one individuals were counted during the annual index

count (June 1-9), but logistical issues and COVID restrictions at that time resulted in not all plover beaches being surveyed. For ten beaches monitored by Intervale, eight nesting pairs produced seven fledged young overall, for a productivity rate of .875. In this project, productivity rate is defined as the number of fledged young per monitored nesting pair.

For the subset of beaches presented above, both number of individuals and productivity rate were lower than in 2019. Russell Wall, Piping Plover Coordinator for Intervale, remarked that numbers fluctuate from year to year and that it is important, to take into consideration the results from the Atlantic Region overall.

Most but not all teams noticed an abundance of human activity on nesting beaches, as evidenced from all-terrain vehicle tracks adjacent to plover

nests and observations of dogs off leash. It is possible that with many businesses and schools closed in March of 2020 due to the pandemic, people were given more opportunity to recreate on the beaches earlier in the season.

To better understand the specific threats impacting nest success on individual beaches, and the management responses needed, beach guardians gather quantitative data on threat indicators such as tracks left by ATVs and observations of dogs off leash. It is a study that has continued each year since 2014, not only in Newfoundland but on beaches throughout the Atlantic Provinces. During the 2020 field season, the Intervale and Qalipu teams completed more than 160 beach surveys for beaches from the Stephenville Crossing and Port aux Basques areas.

Liam Walters, a recent graduate of the Fish and Wildlife Technician program at College of the North Atlantic, served as a Piping Plover beach guardian with Intervale. Liam loved his work and remarked, “It’s cool to apply the things you learned in school; spending time outdoors recording data and seeing wildlife.”



A Piping Plover nest at Grand Codroy Provincial Park.

shorebirds and their habitat often occur during hours when field teams and enforcement officials are not patrolling the beaches. To address this gap, and to encourage positive behaviour, Intervale experimented with a trailhead box containing a guest book and installed it at Codroy Valley Provincial Park. They invited

Encouraging positive stewardship behaviour among beach walkers is an important dimension to the work of beach guardians, but threats to

Isabella Nolan, a student at Bayview Academy in St. George’s, to paint the box with beach-themed illustrations. Isabella, age 14, stated that she wanted to do something for the community, and loved the opportunity to paint. She remarked, “I selected scenes which I thought represented the



Isabella Nolan of Bayview Academy painted the trailhead box installed at Codroy Valley Provincial Park.

beautiful things that we see on the island every day.”

Comments that visitors inscribed in the guest book included the following:

I love seabirds and plovers are adorable! This box is also very cute. Hope everyone reading this is happy and healthy!

What a great idea! And a beautiful place to spend some time.

In a future issue of this newsletter, Intervale staff will describe how the installation of counters are providing further information on vehicular traffic on Piping Plover beaches.



Restoring Eider Nesting Habitat

With help from partners Ducks Unlimited, Wildlife Habitat Canada, and ECCCC, Intervale continued its multi-year effort to remove dilapidated shelters from nesting habitat for Common Eider on islands of the Great Northern Peninsula. Having completed work on the Grey Islands and on two islands of Hare Bay, the team set out in 2020 to restore nesting habitat on Goelands Island, which lies in the outer reaches of Hare Bay, and on several other islands.

The work consists first of finding and assessing the condition of nest shelters. As shelters deteriorate over many years, they enable predators such as the Black-backed Gull to access eider eggs and hatchlings and for young gulls to occupy shelters. As they collapse, shelters



Clarence Goodyear of Roddickton and MUN graduate student Jackie Bauman gather nest shelter debris on Goelands Island, an important breeding site for Common Eider in Hare Bay.

become barriers to eider nesting habitat. An additional factor in areas exposed to strong winds is that shelters can become displaced. With thousands of nest shelters installed over three decades in coastal areas of the province, it has become increasingly important that organizations regularly assess and maintain or remove shelters as part of long-term habitat



Common Eider nest shelters on Eastern Grassy Rock, Hare Bay.

management planning. The work requires many safety measures and is best performed under the guidance of experienced work crews familiar with the associated risks.



Cultivating the Next Generation of Conservation Leaders

During August, staff and interns from Quebec-Labrador Foundation (QLF), along with Intervale, presented eight workshops on birds, bats, wetlands, and river ecology to 61 youth and 19 adults at four locations of the Northern Peninsula and the Labrador Straits: Roddickton, St. Anthony, Plum Point, and Point Amour. Local municipalities, Community Youth Networks, and the Point Amour Provincial Historic Lighthouse hosted the events and registered the participants. With abundant preparation regarding COVID-19

safety protocols, staff adapted presentations to accommodate more outdoor time and to ensure social distancing. Two of the instructors, one from Quebec and the other from British Columbia, underwent a 14-day isolation prior to the teaching.

A third instructor was QLF intern Jackie Bauman, a graduate student in Environmental Policy at Sir Wilfred Grenfell College, Memorial University, in Corner Brook. She was inspired by the passion of youth in the region, saying, “Youth have this inherent desire to take care of their environment...they have spent so much time outdoors--fishing, hunting, picking berries, and exploring all of the hidden gems in nature....” Jackie and her teammates formed a “bubble” and wore face masks while teaching.

The three-day workshop at Point Amour, Labrador, has been running for six years. Project director Kathleen Blanchard envisions the workshop as a rare opportunity to track long-term impact of instruction in conservation biology on the knowledge, values, and actions of youth. Staff and the parents of participants are observing environmental leadership qualities among several participants. Evidence in support of this trend is revealed through one-on-one interviews and in informational presentations that youth are making to their peers. 



Grenfell/MUN student Jackie Bauman, along with McGill graduates Alexa Schubak (QLF staff) and Krista Grant, formed the QLF team of instructors.



Kloe Smith gave a presentation on shorebirds at the workshop for youth at Point Amour, Labrador. Many activities were held outdoors, and COVID-related guidelines were followed.

A 15,000 km Journey Needs a Stopover in Newfoundland

On August 19, while traveling back from Labrador to the Newfoundland Northern Peninsula, Kathleen Blanchard of Intervale stopped at Anchor Point to count shorebirds as part of the Atlantic Canada Shorebird Survey. Among the more than 80 shorebirds observed were seven Red Knots, *Calidris canutus* (subspecies *rufa*), an endangered species. Suddenly she noticed that on the left leg of one of the birds was a metal band and a small orange flag. After searching with a spotting scope,

she was able to read the flag’s code: N7S. A fellow birder managed to get a photo with his telephoto lens. Later that evening Blanchard sent a report to Julie Paquet, shorebird specialist at Environment and Climate Change Canada. Within hours, Paquet connected her with Patricia Maria Gonzalez, shorebird researcher and the South American Shorebird Coordinator for the International Conservation Fund of Canada. Gonzalez wrote, “N7S was banded as an immature in Río Grande, Tierra del Fuego, Argentina on the 8th of December 2009, which means it was hatched in 2008....”

Gonzalez identified the bird as a male and said that while it had been observed previously during the northward migration, there had not been any previous records for the southward journey and that therefore the sighting is very important.

After the breeding season in the central Canadian Arctic, thousands of Red Knots including N7S fly to Tierra del Fuego and other regions of southern South America—a journey of over 15,000 km each way! For a bird that weighs about a quarter of a pound, it is even more remarkable that the Red Knot may stop only three or four times along the way, flying for days at a time before landing. The intertidal limestone flats of Anchor Point and other coastal areas of the Great Northern Peninsula of Newfoundland are rich with invertebrates that provide vital food energy for the long migration. At Anchor Point, the habitat



N7S is a Red Knot spotted at Anchor Point in August. The 12-year old male was originally banded in Tierra del Fuego. This was the first recorded sighting on its southward migration.

is situated within the working waterfront of a bustling fishing community.



Cabin Conversations Help Change Attitudes About Bats

Members of the Intervale staff have been conducting “cabin conversations” with cabin owners and residents in southwestern Newfoundland and the Northern Peninsula, gathering information about bat sightings and informing people about the role bats play in ecosystems and why they need to be protected.

Eric Bennett recalls, “Before I started this work, I was one of the people who didn’t realize all the good that bats do.” He believes that speaking with cabin owners has caused a dramatic shift in attitude toward bats, both for himself and the many people with whom he has spoken.

An example of the change is that many people who previously viewed bats as a nuisance now realize they are an important part of the ecosystem, helping to control agricultural pests and biting flies, among other benefits. Eric reports that he has witnessed opinions changing while people are sitting around a campfire at

night and observing bats feeding. Here is what one person said:

Growing up on the west coast of Newfoundland, I used to believe bats were a nuisance due to their roosting habits. After being interviewed and educated on bats by Eric Bennett, I now understand them a lot better and see them in a whole different way. I have learnt about white-nose syndrome and their population decline. Also how we must protect them....



Intervale is distributing bat “fridge” magnets. Contact Intervale if you would like to help.

Newfoundland Bats Need Help

Parks Canada staff at Gros Morne National Park have reason to be concerned about a population decline among little brown myotis, *Myotis lucifugus*, an endangered species and the most common of the three species of bats that occur in on the Island of Newfoundland. For the past three years, the number of bats at a large hibernacula within the Park has declined steadily: 300 (2018), 160 (2019), and <100 (2020).

White-nose syndrome—a disease caused by an introduced fungus—has become a leading threat to bats in Newfoundland. First reported among bats in western Newfoundland, the disease is spreading within the Long Range Biodiversity project area.



Little brown myotis can consume ½ its body weight in food at night.

Which Bat Species Was That?

Identifying bats to species can be challenging when observing them in flight. Researchers are turning to acoustic monitoring as a noninvasive tool for recording the presence of bats. Application of Kaleidoscope software that reads bat echolocation calls enables researchers to attribute a call to one of three species that occur on the Island of Newfoundland: little brown myotis, northern myotis, or hoary bat. The hoary bat, *Lasiurus cinereus*, is of particular interest, as it is considered a nonresident that visits during migration.

Alyssa Hunter of Qalipu First Nation has been conducting acoustic monitoring of bats in two locations: the Port au Port Peninsula and the area of Robinson's River in southwest Newfoundland.



Alyssa Hunter, Qalipu First Nation, has been using acoustic monitoring to collect information on bats in Newfoundland.

at 94 locations in Gros Morne National Park since 2013. Their findings as well as recent observations from elsewhere in the region confirm that the hoary bat is a rare but regular visitor to western Newfoundland.



Quinn Parker on a beach clean-up at Port Saunders/Port au Choix, 2018.

Thank you, Quinn!

Quinn Parker, from QLF, has been a great help to the Long Range Biodiversity Project as editor of this newsletter and as an experienced presenter in Newfoundland classrooms on conservation topics for youth. In a few weeks, Quinn will be headed to Madagascar, where she will work on projects concerning sustainable livelihoods and environmental conservation for SEED Madagascar, an NGO. We will miss her, and we wish her all the best!



The Long Range Biodiversity project takes its name from the Long Range Mountains, which are a dominant geologic feature within the boundaries of the project. A large portion of protected land and freshwater ecosystems falls within Gros Morne National Park (left).

Areas proposed for protection under the provincial

government's Protected Areas Plan include islands in Hare Bay that support nesting habitat for colonial birds such as Common Eider and Common Tern. Caribou and other boreal species also use select islands, such as Western Grassy Rock (right).



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Acadia University, cabin owners, CBDC NORTIP, Flat Bay Band, municipalities, NL Trappers' Association, Parks Canada, schools, University of Victoria, and youth groups.

Photos (in order of appearance) by: p.1 Dulcie House; p.2 Dulcie House; p.3 Jennifer Sullivan; p.4 Jennifer Sullivan; p.5 Russell Wall, Kim Nolan; p.6 Kathleen Blanchard, Alexa Schubak; p.7 Kathleen Blanchard, Alexa Schubak; p.8 Clarence Goodyear; p.9 Parks Canada, Kathleen Blanchard; p.10 Kathleen Blanchard, Clarence Goodyear.

Quinn Parker (Editor), with Kathleen Blanchard, Eric Bennett, Russell Wall, Jennifer Sullivan, Dulcie House, Louise Hermanutz, and Alyssa Hunter.

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.

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