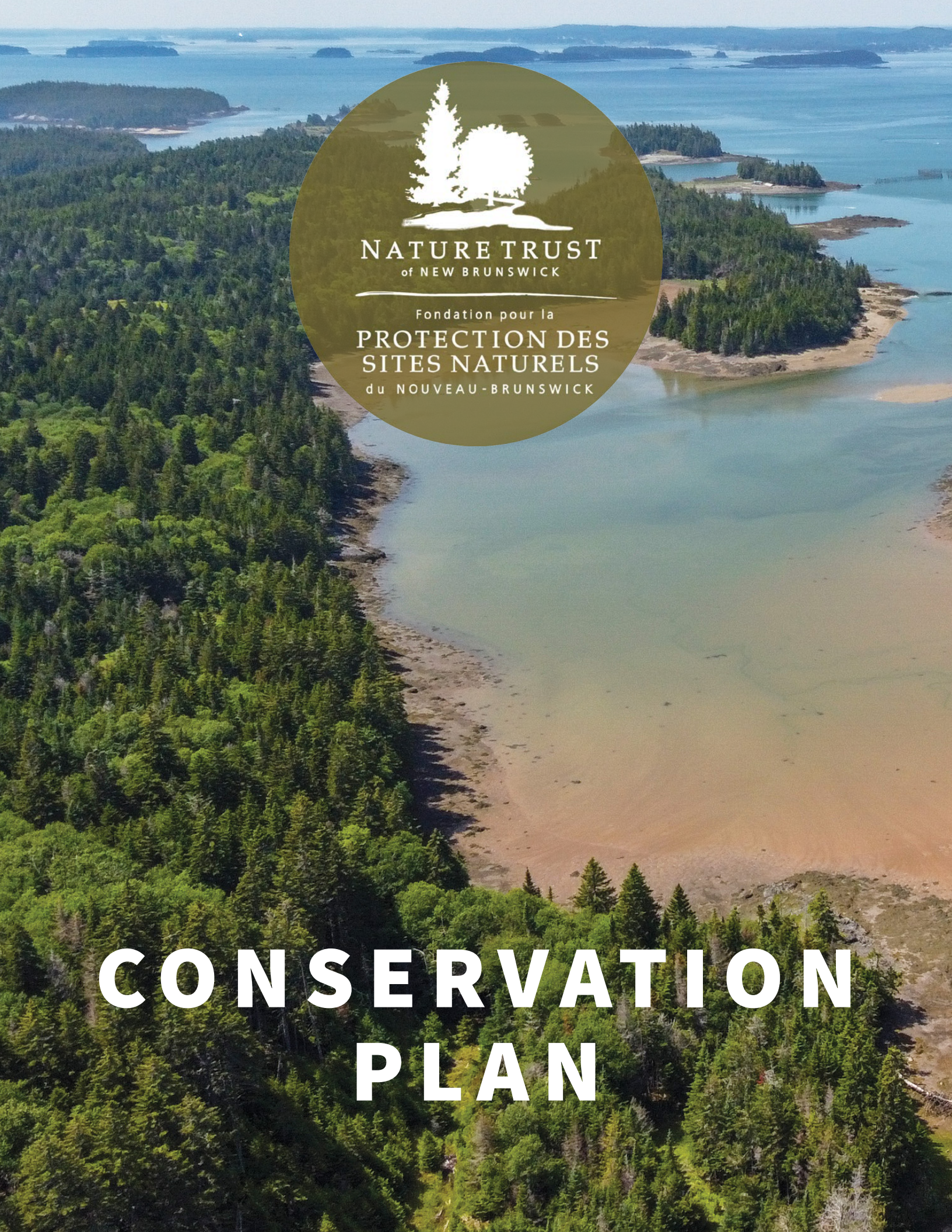


CONSERVATION PLAN

ACKNOWLEDGEMENTS

PRINCIPAL RESEARCHERS AND CONTRIBUTORS

Courtney le Roux, Conservation Coordinator, Nature Trust of New Brunswick

Lauren Aarts, Conservation Technician, Nature Trust of New Brunswick

Carli le Roux, Conservation Manager, Nature Trust of New Brunswick

Aaron Dowding, Former Conservation Manager, Nature Trust of New Brunswick

ADDITIONAL CONTRIBUTORS

Nature Trust of New Brunswick Board of Directors 2021 and 2022

Nature Trust of New Brunswick Planning Team

Ontario Land Trust Alliance

Government of New Brunswick, Department of Natural Resources and Energy Development

CoLab Consultants

New Nouveau Brunswick

Your Environmental Trust Fund at Work

Votre Fonds en fiducie pour l'environnement au travail

The Nature Trust of New Brunswick was founded in 1987 as an incorporated, charitable land trust active in conserving and stewarding nature preserves for the benefit of present and future generations of all living beings. The Nature Trust also engages with New Brunswickers about the importance of protecting our province's unique natural heritage and biodiversity.

Since its founding, the Nature Trust has protected many unique natural areas in New Brunswick, spectacular places of scenic beauty, pristine, untouched places, and quiet habitats that shelter rare and endangered species.

By conserving private lands and by working with landholders and government agencies to encourage responsible stewardship, the Nature Trust is helping to establish a network of protected natural areas in New Brunswick.

MESSAGE FROM THE **CHIEF EXECUTIVE OFFICER:**

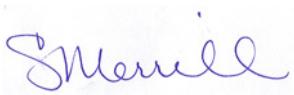
In July 2020, the Nature Trust of New Brunswick launched the Conserve Y(our) NB: Protect the Places You Love Campaign with the ambitious goal of raising 10 million dollars to increase the amount of land our organization protects from 8,000 to 15,000 acres by the year 2030.

We launched our campaign after the Government of Canada set the largest nature conservation target in Canadian history. In a province with one of the country's lowest nature conservation rates, it is more important than ever that we make meaningful and measurable contributions to these conservation targets.

Protecting, restoring, and maintaining healthy ecosystems so they may flourish benefits us all. We have developed this Conservation Plan to ensure that the Nature Trust takes a science-based and strategic approach to preserving New Brunswick's special natural places by using the best available data to identify and acquire conservation lands. It offers a path to achieving our shared conservation goals.

Our mission to conserve and steward ecologically significant lands across the province and to engage with New Brunswick residents and visitors about the importance of protecting these special places is made possible thanks to our generous supporters. Your unwavering dedication to protecting the places you love for future generations is truly inspiring. Together, we are ensuring that the New Brunswick we know and cherish is protected, forever.

WITH GRATITUDE,



Stephanie Merrill

EXECUTIVE SUMMARY

The Nature Trust of New Brunswick has developed a strategic Conservation Plan to ensure we are making meaningful and measurable contributions to provincial biodiversity conservation while maintaining focus and alignment with our organizational mandate and goals.

Through extensive research, surveys, and workshops we have identified a suite of key landscape-based targets that form the primary focus of our Conservation Plan. These include climate-resilient areas, connectivity factors, and rare and unique habitats.

Using these landscape-based priorities and Zonation Conservation Prioritization Software, the Nature Trust has identified high conservation value areas throughout all of New Brunswick to focus our conservation and engagement efforts over the next five years.

PURPOSE

- Enable the Nature Trust to contribute to conservation through private land securement and stewardship;
- Guide the development of strategic acquisition and efficient stewardship projects;
- Focus resources and outreach in areas of high conservation value;
- Connect conservation work with the engagement, stewardship, and land acquisition goals in the Nature Trust's Strategic Plan;
- Convey the Nature Trust's vision through specific and targeted conservation actions;
- Focus land acquisitions in focal areas to reduce preserve stewardship costs;
- Contribute to climate change mitigation and adaptation.

GOALS

We derived goals from the Nature Trust's mandate, Letters Patent, and Strategic Plan. We then selected fine-scale landscape-based targets that contribute to meeting these goals.

Goal: Protect habitat with outstanding biological, geological, aesthetic, or historical value

Targets

- Climate-resilient Forests:
  - Appalachian Hardwood Forest
  - Mature Forest
  - Hemlock Forest
- Climate-resilient Wetlands
  - Forested Wetlands
  - Freshwater Wetlands
  - Coastal Wetlands and Migration Areas
- Natural Calcareous Sites
- Culturally/Historically Significant Natural Sites
- Areas of High Aesthetic Value

Goal: Conserve corridors that increase connectivity between existing conserved lands within and beyond provincial borders

Targets

- Connectivity between Riparian Habitats
- Connectivity between Conserved Lands
- Connectivity between Shoreline and Upland Habitats
- General Landscape Connectivity

Goal: Integrate climate change resilience into conservation planning

Targets

- High Carbon Storage Potential
- Landscape Diversity
- Climate-resilient Targets:
  - Appalachian Hardwood Forest
  - Mature Forest
  - Forested Wetlands
  - Hemlock Forest
  - Freshwater Wetlands
  - Coastal Wetlands and Migration Areas

TARGET DETAILS

Appalachian Hardwood Forest

Appalachian Hardwood Forest has less than one percent of the original distribution remaining[1] [2]. This rich forest type is associated with many rare and at-risk species. Appalachian Hardwood Forest has the highest diversity of all forest types in New Brunswick with more than 180 associated species, 43 of which are rare [2] [3]. The unique and sensitive plant communities found here are not found anywhere else in Atlantic Canada.

Mature Forest

Mature forests provide important habitats for wildlife and many rare and at-risk species. Mature forests are rare across the landscape, with less than five percent remaining intact across the Maritimes, making them of high conservation value due to their risk of loss [4]. The diversity of these habitats offers protection against some climate change risks through the availability of diverse microclimates and resilience associated with mixed species occurrence.

Hemlock Forest

Hemlock forests are uncommon, occurring only in small patches, and are experiencing steady declines throughout the province[5]. These forests are incredibly long-lived, rich in biodiversity, and create unique understory habitats. Hemlock forests are of high conservation value, as they provide important wildlife habitat and resources particularly through winter.

Forested Wetlands

Forested wetlands provide habitat for many rare species of birds, plants, and lichens. Once disturbed, these rare species are unlikely to re-establish. Cedar and hardwood forested wetlands are of high conservation value because they contain such diverse and rare species assemblages. These forested wetlands provide an abundance of microhabitats that contribute to their assemblages of rare and unique species.

Freshwater Wetlands

Freshwater wetlands are a significant habitat for many rare and at-risk species and are important habitats for carbon sequestration. Waterfowl are also very dependent on freshwater wetlands for breeding and staging areas. It is critical to identify and conserve wetlands that will be resilient to the effects of climate change.

Coastal Wetlands and Migration Areas

Coastal wetlands support high levels of biodiversity and contribute to a complex of diverse habitats that are key for many rare and at-risk species. These habitats are vital to the filtration of contaminants, nutrients, and sediments from the water column, and for their ability to sequester carbon. Also included are migration areas, the natural, barrier-free, and low-lying areas behind coastal wetlands that allow for coastal wetland migration due to sea-level rise.

Natural Calcareous Sites

Calcareous sites are areas where the bedrock and soil have a high proportion of calcium carbonate, making these soils highly fertile. Rich hardwood forests, unique and uncommon species, high soil fertility, and rare plants are associated with calcareous bedrock and soils. In New Brunswick, many of these areas have been cleared for agriculture, harvested for timber, or have been significantly altered. As such, calcareous sites remaining in a natural state are of conservation priority.

Culturally/Historically Significant Natural Areas

Intangible values are associated with cultural landscapes, including artistic, aesthetic, social, historic, linguistic, religious, and spiritual sites. Culturally significant landscapes are geographic areas identified by a community as having cultural value and may include archaeological sites, natural and aesthetic features, cultural resources or structural elements. We will focus conservation efforts on sites valued by Indigenous peoples, which will be identified by our Indigenous partners.

Areas of High Aesthetic Value

The aesthetic value of a landscape contributes to human feelings of well-being and can influence ethical attitudes and actions towards the environment. Researchers have even linked aesthetic value to biodiversity, with greater species richness perceived as having a greater aesthetic appeal. Factors that contribute to aesthetic value include low levels of human alteration, landscape complexity, land cover diversity, presence of water, and geographical relief.

Connectivity between Riparian Habitats

Riparian networks are a highly effective means for increasing connectivity. These habitats are considered naturally resilient, and their conservation will contribute to the climate-resilience network within the province. The expansion of these networks is supported by regulations that require 30 m no-touch buffers along watercourses as part of the *Clean Water Act (1989)*.

Connectivity between Conserved Land

The isolation of most conserved areas can lead to lower viability of wildlife populations and inadequate protection of biodiversity. Therefore, it is important to prioritize not only increasing total area conserved but also the placement of new conserved lands in strategic locations. Conserved lands with sufficient connectivity are especially effective when considering climate change, as they allow population range shifts and migration into nearby conserved areas with suitable habitat.

Connectivity between Shoreline and Upland Habitats

Shoreline and upland habitats support wildlife in various life stages, provide key resources, and are used for migration. They are common sites for human settlement and these land use changes and developments are threats to the biodiversity and ecosystem services. Increasing connectivity between these habitats can contribute to species survival and reproduction, as well as ecosystem processes and services.

General Landscape Connectivity

Human activities leading to habitat loss and fragmentation decrease connectivity between natural areas. Landscape connectivity is the extent to which habitats allow the movement of species and genes. Limited landscape connectivity can lead to species decline, risk of local extinction, and loss of genetic variation. Landscape connectivity also contributes to climate resilience by allowing for the movement of individuals in response to changes in habitat suitability, and increases the likelihood of species recovering from fire, drought, disease, or other disruptions.

High Carbon Storage Potential

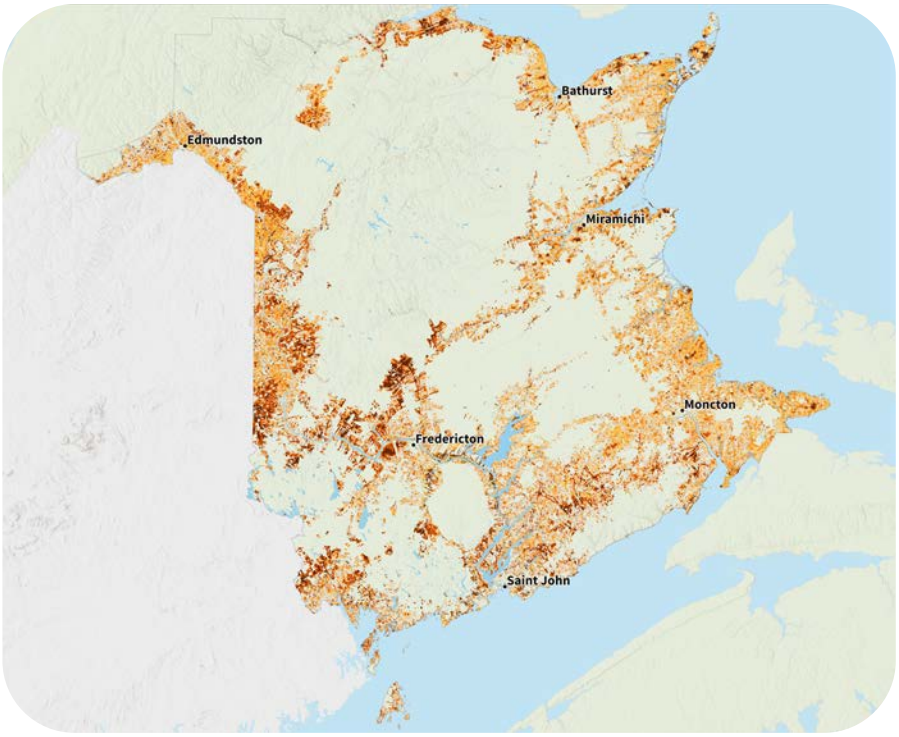
Carbon storage is a key ecological process to incorporate when considering climate change resilience in conservation planning. Solutions that work with natural processes instead of technology to mitigate climate change are known as nature-based solutions. One of these is the protection and management of areas or habitats with high carbon storage potential. To address climate change, it is essential to protect healthy natural forests and wetlands that are intact, as these store more carbon due to their age, soil depth, and structural diversity.

Landscape Diversity

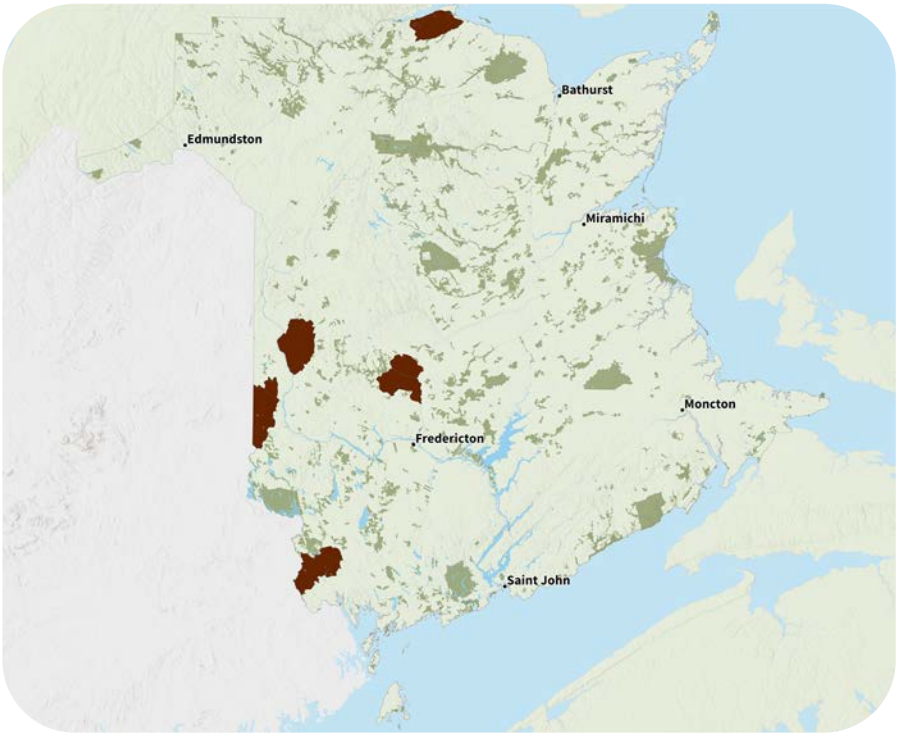
High landscape diversity includes areas with diverse features such as elevation, geology, landforms, soil, surface water, slope, and other naturally formed features. These areas are important to consider for conservation because geodiversity and landform diversity are associated with increased climate resilience. This is because they provide greater microclimate variation, which provides shelter, refugia, and seed banks. A greater landscape diversity can also lead to greater genetic and species diversity, which strengthens and stabilizes ecosystem elements in the landscape.

RESULTS

We used Zonation Conservation Planning Software to identify priority areas given the goals and targets of the Conservation Plan.



Based on the concentration of the priority goals and targets, we have also identified Focal Regions to focus our outreach, engagement, acquisition efforts, and conservation projects. This will ensure resources are concentrated in areas where the Nature Trust can have the greatest high-value conservation impact.



*Note: donations of land may be evaluated separately.

APPLICATION

New Nature Preserves

The Conservation Plan and the associated tools will allow strategic assessment of potential new nature preserves with high conservation value for protection by the Nature Trust. Since the tools can be easily adjusted, the conservation team can accommodate the changing priorities of the Nature Trust and new data over time.

Conservation Projects

The Conservation Plan will give strategic overview and focus to research and scientific projects that the Nature Trust pursues. It will allow the team to determine where we invest resources to further projects that better benefit Species at Risk recovery, conservation engagement, and habitat stewardship in New Brunswick.

Public Engagement

The Conservation Plan will be valuable in directing public and landholder engagement efforts and precious volunteer time and effort related to species at risk habitat, forest management, wetland protection and more.

Stewardship

With the continued growth of the number of nature preserves, the effort required by the stewardship team to care for these preserves becomes extensive and growing. The Conservation Plan will help to manage these increasing land stewardship costs of staff efforts and volunteer capacity by focusing future land acquisitions in targeted high-value conservation areas.

Strategic Planning

By using a spatial conservation prioritization software for the Conservation Plan, we have ensured strategic unbiased selection of areas with high conservation value. The Conservation Plan will ensure that the efforts and resources of the organization are leading to positive conservation actions for both nature and people in New Brunswick.

Get Involved

We have ambitious targets to meet in Canada and in New Brunswick by 2030, and private land conservation efforts are an important tool to help get us there. Landholders can be a part of this solution. Send us an email at conserve@ntnb.org or give us a call at (506) 457-2398 to join the network of nature lovers helping to implement this Conservation Plan and learn more about our conservation options and programs.

GLOSSARY & WORKS CITED

GLOSSARY

Aesthetic Value: Areas that contain forest, wetland, waterbodies, changes in elevation, landscape diversity, waterfalls, or coastline. The more features in an area, the greater the aesthetic value

Appalachian Hardwood Forest: A rare hardwood forest type with a unique assemblage of tree and plant species that are threatened in New Brunswick by forest harvesting and agricultural activities.

Calcareous: Extremely fertile soils with a high proportion of calcium carbonate. Natural state calcareous soils are sites that are not used for industrial activities and have not been harvested since 1970.

Carbon Storage Potential: Total biomass carbon stocks derived from datasets of biomass carbon (above and below ground) and soil organic carbon. Data used from Noon et al. 2022 in Nature[6].

Climate-Resilient: Natural areas or habitats that are anticipated to support biodiversity and ecological function under changing climatic conditions.

Coastal Wetland Migration Area: Areas near coastal wetlands that are barrier-free where wetlands may migrate as sea levels rise. Suitability of migration areas considers slope, soil type, vegetation cover, adjacent vegetation cover, land use, anthropogenic barriers, and distance to wetlands.

Connectivity: The degree of fragmentation and strength of barriers that create resistance to movement within a landscape. The lower the amount and configuration of these features, the greater the connectivity.

Culturally Significant: To be defined by Indigenous partners.

Focal Region: A region with a clustering of high conservation value areas identified within the Conservation Plan.

Forested Wetland: Forest stands that are seasonally saturated, flooded, poorly drained, or borderline forested wetlands.

Geodiversity: Diversity of geology, elevation, soil, surface water, and naturally formed features that are strongly correlated with biodiversity.

Goal: Broad, province-wide, and long-term guiding principles of the Conservation Plan.

Hemlock Forest: Forest stands whose primary species is eastern hemlock or are classified as eastern hemlock mixedwood or eastern hemlock softwood.

Landform Diversity: Diversity of slopes, aspects, and landscape gradients that is linked to greater microclimate variation and lower population losses.

Letters Patent: Letters Patent incorporating the Nature Trust of New Brunswick Inc./La Fondation Pour La Protection Des Sites Naturels De Nouveau Brunswick Inc., dated September 3, 1987, reference number 022941.

Mandate: It is the Nature Trust's mandate to steward unique natural areas, spectacular spaces of pristine scenic beauty, and rare or endangered species of flora and fauna in New Brunswick while maintaining healthy ecosystems, biodiversity, and preserving native species.

Mature Forest: Forest stands with a development stage of mature or overmature whose treatments are not clear-cut, plantation cleaning, commercial thinning, fill plantation, semi-commercial thinning, full plantation, progeny test, regeneration protection clear, pre-commercial thin, or two pass cut.

Riparian Networks: Watercourses plus a 30 m buffer.

Significant Communities: Natural communities containing multiple rare or at-risk species or habitats, or rare or highly sensitive habitat types.

Strategic Plan: A five-year plan guiding the work and development of the Nature Trust.

Target: Specific landscape-based habitats chosen to meet the goals of the Conservation Plan. These are the mapped variables for prioritization.

Upland Habitat: Natural habitats (untreated forests, shrubland, grassland, and wetlands) moving away from riparian networks that consider elevation and cost of movement through various land uses.

Zonation: A spatial conservation planning and prioritization software that uses a maximum utility approach to identify areas of greatest conservation values based on the data provided.

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COVER PAGE, PAGES 5, 6, 9, 10, 11, 12, 14, 15: J. Edward Hurley
PAGE 9: Isaac MacLean
PAGES 8, 10: Eugénie Gaujacq
PAGE 8: Aaron Dowding
PAGE 16: Shaylyn Walllace
PAGE 15: Ruth Shaw
PAGES 8, 11, 15: Tessa Wissink

CONSERVATION PLAN

P.O Box 603, Stn A
Fredericton, NB E3B 5A6
(506) 457-2398
www.naturetrust.nb.ca

Registered Charitable Number:
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