

Habitat Conservation Plan
for the
Town of Port au Choix



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for the
Town of Port au Choix**

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Prepared by the Town of Port aux Choix

with assistance from

**Department of Environment and Conservation – Wildlife Division
&
Limestone Barrens Habitat Stewardship Program**

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PREFACE


The Limestone Barrens of the Great Northern Peninsula (GNP) of Newfoundland, Canada has been identified by scientists as a rare and fragile ecosystem. Studies and observations have determined that a portion of this unique environment is being lost through human activities such as: driving ATV's and other off road vehicles, gravel removal, illegal dumping, wood piling and drying fish nets. The vast majority of historical habitat loss has resulted from extensive quarrying and development during the past 30-35 years.

The Town of Port au Choix signed a Municipal Species at Risk Stewardship agreement in in the fall of 2009 pledging their commitment to conservation and protection of the Limestone Barrens within their jurisdiction. In accordance with this agreement, Port au Choix will manage these areas with technical advice provided by the provincial Wildlife Division, in part via this Conservation Plan. With the signing of this plan, the agreement parties officially accept this Conservation Plan and agree to use it as a guide to govern activities within the designated Stewardship Zone and Management Units.


The following signatories agree to work towards the implementation of the following "Habitat Conservation Plan" for the Town of Port au Choix:



Commissioner, Port au Choix



Witness



Director, Wildlife Division,
Department Environment and Conservation



Program Manager- Limestone Barrens Habitat Stewardship Program

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Section 1: Plan Overview

Plan Purpose: The Town of Port au Choix will use this Conservation Plan as a guide to govern activities which impact the Limestone Barrens and the rare and “at risk” species found there in order to minimize negative impacts within the areas designated for conservation.

Plan Goals: (1) To protect the rare and “at risk” species located within the designated Management Units and to promote wise use of the Limestone Barrens located within designated Stewardship Zones.

(2) To maintain and/or increase wildlife use of those areas, particularly by rare and “at risk” species as well as other plant species.

(3) To increase public awareness of the importance of the Limestone Barrens for conserving rare plants and other wildlife.

Plan Objectives: (1) To present a general assessment of the Limestone Barrens and its rare and “at risk” species designated for protection.

(2) To recommend protection, conservation and enhancement strategies for both the Stewardship Zone and Management Units.

(3) To describe potential initiatives for education and awareness among the public in order to increase support and cooperation of the Town’s citizens.

Section 2: Species at Risk Stewardship in Newfoundland and Labrador

The Context of Species at Risk

Wildlife and their habitat play a vital role in the ecological and biological processes that are essential to life itself. The functioning of the biosphere, and hence the maintenance and enhancement of human life, depends on countless interactions among plants, animals, and microorganisms. These ecological processes are essential for agriculture, forestry, fisheries, and other endeavors necessary to human life. They also help maintain environmental quality by degrading and otherwise removing some pollutants and by preventing waste accumulation. Some of the biological processes in which wild species play a key role are pollination, germination, seed dispersal, soil generation, nutrient cycling, predation, habitat maintenance, waste breakdown, and pest control.

Wildlife and wildlife habitat are also important for the preservation of genetic diversity. Canada's agriculture, forests, and fisheries all rely on crops or stocks that are adapted to local or regional conditions and that can withstand pests, diseases, predators, pollutants, and other threats. The diverse genetic material present in Canada's heritage of living resources can help ensure that the forest, crops, and stocks Canadians rely on will remain varied and resilient enough to withstand an ever-increasing list of threats. Likewise, in medicine, the development of new drugs and treatments depends greatly on wildlife and wildlife habitat. In fact, most pharmaceutical products were discovered or developed by studying wild species, not invented on the basis of the principles of chemistry.

The sheer scale of the benefits provided by wildlife offers compelling reasons for maintaining wildlife populations and habitats in a productive, healthy state. However, wildlife is under stress. Species are disappearing at a faster and faster rate. In 1994, 117 species or population of birds, mammals, reptiles, fish, amphibians, and plants were listed as endangered or threatened in Canada. And wildlife habitat is disappearing even faster as it is drained and cultivated, paved over, or strip-mined as industrialization proceeds apace. The loss of species affects us all and can have unforeseen consequences for our ecosystems.

Many species around the globe and within Newfoundland and Labrador are in trouble because of the threats they face, most of which are caused by humans. Habitat destruction and disturbance are the major factors, but pollution, climate change, accidental trapping, over-harvesting, and introduction of invasive species are all major problems as well. Natural processes like predation, disease and extreme weather events are also factors that threaten species.

Species at Risk Legislation

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is an independent group of nationally recognized experts, who assess data on wildlife species considered potentially “at risk” in Canada and place them in one of five categories: extinct, extirpated, endangered, threatened, or special concern. COSEWIC’s assessment process is based on a rigorous criteria system that not only recognizes scientific sources but also places a significant emphasis on information from the people who live on the land and have an intimate familiarity with the animals and plants around them.

After receiving a recommendation from COSEWIC, the federal and provincial governments consult with relevant Ministers, wildlife management boards and the public to consider many factors, including possible social and economic implications of listing the species. The governments then decide whether to add the species to the List of Wildlife Species at Risk. Once a species is listed, provisions under the Endangered Species Act (ESA) of Newfoundland and Labrador and the Government of Canada’s Species at Risk Act (SARA) apply to protect and recover the species.

The Endangered Species Act (ESA) of Newfoundland and Labrador is seeks to ensure the recovery of species deemed to be at risk. The Act makes it an offence to harm an endangered species with individual fines ranging from \$1,000 to \$50,000 and/or 3 months imprisonment upon first conviction. Corporation fines can range from \$2,000 to \$100,000 upon first offence. Additionally, the court may impose a fine of less than or equal to \$10,000 for each day the offence continues.

The Government of Canada’s Species at Risk Act (SARA) is designed as a key tool for the conservation and protection of Canada’s biological diversity and fulfils an important commitment under the United Nations Convention on Biological Diversity. The Act seeks to complement other existing federal, provincial and territorial legislation protecting wildlife. The purpose of SARA is stated as to prevent wildlife species from becoming extinct or extirpated (lost from the wild in Canada); to help in the recovery of extirpated, endangered or threatened species; and to ensure that species of special concern do not become endangered or threatened. The Species at Risk Act (SARA) is just one of three major components in the Government of Canada’s Strategy for the Protection of Species at Risk. The second component is the federal Accord for the Protection of Species at Risk a general policy document endorsed by the provinces, territories and the Government of Canada. The third component is Environment Canada’s Habitat Stewardship Program for Species at Risk (HSP) which provides funds for the implementation of recovery plans for species at risk.

Habitat Stewardship Program for Species at Risk

The Habitat Stewardship Program for Species at Risk (HSP) is a partnership-based conservation initiative funded by the Government of Canada designed to protect the habitat of, and address the recovery for, species at risk in Canada. The Program is administered by Environment Canada (EC) and managed cooperatively with Fisheries and Oceans Canada (DFO) and the Parks Canada Agency (PCA). The HSP provides funding to "stewards" for implementing activities that protect or conserve habitats for species designated as "at risk" (endangered, threatened, or of special concern). The HSP became operational in 2000-2001 and allocates up to \$10 million per year nationally to such partner-led projects. The overall goal of the HSP is to "contribute to the recovery of endangered, threatened, and other species at risk, and to prevent other species from becoming a conservation concern, by engaging Canadians from all walks of life in conservation actions to benefit wildlife."

Limestone Barrens Habitat Stewardship Program

The Limestone Barrens Habitat Stewardship Program (LBHSP), established in 2001, is primarily funded by the federal Habitat Stewardship Program for Species at Risk. The program aims to rectify the decline in Limestone Barrens habitat populations through the protection, restoration, and enhancement of that habitat. In an effort to protect this unique and fragile habitat, many federal agencies, provincial agencies, private corporations and members of the public have been working together to accomplish these goals. In summary, these partners are creating opportunities for people to learn about this special feature of the Newfoundland landscape, to share it with visitors, and to protect it for the future.

The program was primarily designed to develop and implement on-the-ground actions which encourage stewardship and responsible use of the barrens by local residents, landowners and visitors. Activities of the program include raising public awareness of and providing information about conservation needs of the Limestone Barrens habitat and its species at risk; educating resource users and developers about the need to eliminate negative impacts on at-risk plants and their habitat; promoting environmentally friendly eco-tourism opportunities on the Limestone Barrens; and, in partnership with the provincial government, negotiating and signing species at risk stewardship agreements with municipalities, schools and individuals who have jurisdiction over Limestone Barrens habitat.

Newfoundland and Labrador Species at Risk Stewardship Program

In Newfoundland and Labrador wildlife habitat development occurs regularly and most often within municipal boundaries or on private property. As such, species at risk habitat that exists within municipal boundaries is often at the greatest risk of destruction or alteration and is in greatest need of conservation and/or management efforts. The Newfoundland and Labrador Department of Environment and Conservation implements a Species at Risk Stewardship Program, administered by its Wildlife Division, whose principle goal is to help make municipalities, corporations, developers, and landowners more aware of the value of species at risk habitat within their jurisdiction and to empower them to take action to conserve these areas. This leads to more informed development decision-making and works towards minimizing negative impacts on species at risk habitat and local ecosystems as a whole.

The program focuses largely upon signing Species at Risk Stewardship Agreements with municipalities, corporations and individual landowners who own or manage significant habitat important to Species at Risk. A Species at Risk Stewardship Agreement represents a formal public commitment by a community, corporation, or individual and the province, to act together to conserve habitat for species at risk. By signing such an Agreement, communities, corporations and individuals become an important link in a continental chain of conservation areas. To date, six municipalities in the province have signed Stewardship Agreements which impact species at risk including Channel – Port aux Basques, Stephenville Crossing, Flower’s Cove, Whitbourne, Winterland, and now Port aux Choix.

The Stewardship Agreement Process

Initial contacts are generally sought by both staff and local community leaders who wish to take action to protect species at risk and/or their habitat. A determination is made between the parties of whether there exists mutual interest in pursuing a Stewardship Agreement. At the same time, surveys of the habitat within a certain area of interest are carried out to confirm a significant relationship exists between the habitat and local wildlife use in the area.

Following these positive assessments, more intensive field investigations will be carried out to determine and agree on formal boundaries for Stewardship Zone(s) and Management Unit(s). A designated “Stewardship Zone” generally functions as a larger area of interest and will reflect species at risk habitat within a Town’s municipal planning boundary, within which the Commission would use its discretion when dealing with applications for development. Specific “Management Unit(s)”, are significant habitat areas that have been identified as important to the species in question. “Management Unit(s)” are intended to be incorporated as environmentally “sensitive areas”, “conservation areas” or sometimes formal “protected areas” into Municipal Plans as governed by the Urban and Rural Planning Act (2000). These areas are, consequently, set aside by a community, individual or corporation in an effort to prevent habitat

alteration and diminished habitat function or degradation that might be caused by development.

When sufficient information has been gathered, a preliminary proposal is presented to a community, individual or corporation for review, with suggested boundaries for a Stewardship Zone and Management Unit(s) clearly indicated. After the Stewardship Zone and Management Unit(s) have been agreed to, a formal Species at Risk Stewardship Agreement will be signed between the presiding body (town, corporation, or landowner) and the province. Under this agreement, the town, corporation or landowner maintains ultimate control over all areas under its jurisdiction, but are asked to abide by the details of a Species at Risk Stewardship Agreement (see Appendix 1).

After the signing of a formal agreement, the community, corporation or individual will be assisted in preparing a Habitat Conservation Plan. This plan will serve to offer species-related best management practices and will provide recommendations and advice for conserving, enhancing and/or managing the species at risk and associated habitat contained within a body's area of authority. In the case of a Municipal Species at Risk Stewardship Agreement, once the Habitat Conservation Plan has been accepted by council it is intended that it will be then incorporated into the town's existing or future municipal plan, operating plan or master plan for use during future development decisions. Specifically, a Species at Risk Stewardship Agreement is signed with the hope that when land use decisions are made, the value of habitat for species at risk as well as any other species will not be forgotten and that future land-use activities will not have a negative impact upon these values.

Roles of Stewardship Agreement Signatories

“The Province”- The Minister of Environment and Conservation is generally the designated signatory on behalf of the province. The Wildlife Division administers the Species at Risk Stewardship Program in Newfoundland and Labrador.

As a result of signing a Species at Risk Stewardship Agreement, staff of the Wildlife Division are expected to:

- Provide the Town with technical advice and assist in the development of a Habitat Conservation Plan.
- Review proposed developments within the Stewardship Zone(s) and Management Unit(s) that have the potential to impact species at risk habitat.
- Assist the town and the LBHSP in carrying out education and information initiatives to raise awareness of species at risk related issues, and
- Support the LBHSP and community-based conservation groups in implementing the Stewardship Agreement and Conservation Plan.

As a result of signing a Species at Risk Stewardship Agreement “the Town or Municipality” and its designated Mayor/Council is expected to:

- Ensure wise use, in consultation with staff of the Wildlife Division, within designated Stewardship Zone(s), namely to contact the Wildlife Division in a timely manner when activities are proposed that are deemed to potentially negatively impact that habitat.
- Ensure that areas designated as Management Unit(s) are protected from destruction or degradation and to contact staff of the Wildlife Division in a timely manner when activities are proposed that may impact that habitat.
- Incorporate the Stewardship Agreement and Habitat Conservation Plan into its next Municipal Plan draft or revision with the assistance of Wildlife Division staff.
- With the assistance of Wildlife Division staff and the LBHSP, to educate residents and development planners about the stewardship program and their responsibilities.
- Implement over time the Conservation Plan recommendations in the community at large.

As a result of signing a Species at Risk Stewardship Agreement, Limestone Barrens Habitat Stewardship Program staff will:

- Support the town and the Wildlife Division in carrying out education and information initiatives to raise awareness of species at risk related issues, and
- Support the Wildlife Division and community-based conservation groups in implementing the Stewardship Agreement and Conservation Plan over time.

Section 3: Species at Risk and their Habitat in the Town of Port au Choix

Introduction to the Limestone Barrens

The Limestone Barrens comprise only a tiny portion of the Island of Newfoundland's surface area, but support a very high percentage of its rare plants. Geographically, the Limestone Barrens are restricted to a narrow strip of land along the extreme western coast of the Great Northern Peninsula (GNP), extending approximately 300km from Port au Choix National Historic Site (PACNHS) in the south to Burnt Cape Ecological Reserve (BCER) at the tip of the peninsula (Figure 1). These limestone barrens are unique, not only in Newfoundland, but in the world. The Limestone Barrens flora contributes greatly to the biodiversity of the Island of Newfoundland. Of the 298 vascular plants considered rare on the island of Newfoundland, 104 of them occur on these barrens and 22 of these species are found only on the Great Northern Peninsula.



Figure 1 – Limestone Barrens on the Great Northern Peninsula of Newfoundland

Newfoundland's west coast is believed to have once been the edge of a tropical ocean where today's Limestone Barrens were the shallows of an ocean teeming with animals and plants. The death of these species deposited calcium and magnesium-rich sediments on the sea floor, which over time accumulated and hardened into thick layers of limestone (calcium-rich) and dolostone (magnesium-rich). As surrounding tectonic plates shifted, this shallow ocean was trapped between converging continents and the seafloor was thrust up and became land. As upper rock layers eroded away, the limestone and dolostone were eventually exposed. More recently, glaciation has scoured the landscape submerging the coastal lowlands and rain and frost have transformed the exposed bedrock into the barrens we see today.

Limestone bedrock underlies about a quarter of the Great Northern Peninsula but only 2% of this can be described as barrens. Limestone Barrens are found only in the windiest, coldest, coastal and mountaintop sites that are unable to support forest or bog. Despite climate conditions however there are many tough and resilient species of plants that have adapted to a way of life in this unique portion of the Limestone Barrens habitat. Three species that live on the barrens are found nowhere else in the world – Barrens willow, Long's braya, and Fernald's braya – and they are so restricted in numbers and distribution that the first two are considered *Endangered* and the last is *Threatened*. The Limestone Barrens is also home to many rare plants, 48 of which have been identified by researchers within Port au Choix National Historic Site (PACNHS). These barrens are very high in calcium therefore many of the plants growing there are calciphiles – the ability that allows them to thrive on the Limestone Barrens where other plants cannot. Also, many of these plants are Arctic-alpine species, and visitors would normally have to travel to Northern Labrador or to Baffin Island to see them. All of these rare plant species depend on the Limestone Barrens habitat for their survival.

The Limestone Barrens has yet another significant natural resource: its geology. The exposed limestone contains many clues about life in the ancient tropical sea. Fossils of animal shells and algal mounds (Figure 2), burrows left by marine worms, and the tracks of trilobites can all be found here. The limestone bedrock and fossils at Port au Choix attract visitors from all over the world.



Figure 2 – Thrombolite at Flower's Cove created by the growth of photosynthetic bacteria in an ancient tropical sea.

Frost sorting is a common geological anomaly on the Limestone Barrens, which results in interesting features like the “Stone stripes” (Figure 3) and “Frost polygons” (Figure 4). When water seeps into the cracks in limestone gravel and freezes, it expands, sorting the gravel in the process. The larger pieces are sorted from the smaller pieces. This process continues year after year, frost after frost, until special features eventually form. Stone stripes form on the side of a hill or incline with alternate stripes of larger rocks and smaller rocks. Frost polygons are circles of gravel with the larger pieces sorted to the outside, forming a ring, and the smaller pieces on the inside. It can take decades, if not centuries, to form these geological features.



Figure 3 – Stone stripes on the Limestone Barrens at Port au Choix



Figure 4 – Frost Polygons on the Limestone Barrens

Humans have lived with the Barrens for almost 5000 years. Archaeological sites at Port au Choix and Bird Cove show the close connection between the people and the land. However, in the past people were unaware of the special nature of the Limestone Barrens habitat. The botanical importance of the Limestone Barrens was first described by Merritt Lyndon Fernald in the early 1920s. A botanist from Harvard University, Fernald recognized the area's peculiarity and drew the attention of the world's scientific community to it. Unfortunately Fernald's finds were lost in the passage of time and it wasn't until 1980-90s that botanists "re-discovered" this botanical treasure. Today, many residents express great pride in their native plant species which is also so globally significant.

Introduction to the Town of Port au Choix

The Town of Port au Choix, incorporated in 1966, is located on the western side of the island of Newfoundland mid way up the Great Northern Peninsula and has long been known for its fishery and rich cultural heritage. The area's rich resources have drawn people to Port au Choix for over 5500 years. Port au Choix is recognized as both the "fishing capital" of Western Newfoundland and the crossroads of various native North American and European cultures. The Town is also a National Historic Site and is regarded as one of the richest archaeological finds in North America. Despite the fact that the Town's fishery and rich cultural heritage has been well known for many years, little was known of its *terrestrial natural history* until the late 1990s.

The Town of Port au Choix has been identified by the Limestone Barrens Species at Risk Recovery Team as having the most vulnerable population of the threatened Fernald's braya (Figure 5) plant population in the world. This plant is a listed species under both provincial and federal legislation. The main threat to the Fernald's braya and other Limestone Barrens plants is habitat destruction. Since the late 1960's human activities have damaged important sections of the Limestone Barrens. In particular, Fernald's braya occurs within a very restricted area within the Town's jurisdiction just at the entrance to the Port au Choix National Historic Site. Threats to this site have included ATV and other vehicular use and dumping. Currently there are three other sites of pristine Limestone Barrens areas at Port au Choix and these locations have been identified by members of the Limestone Barrens Species at Risk Recovery Team as potential habitat for Fernald's braya. Besides for Fernald's braya, Wild Chives (*Allium scoenoprasum*)(Figure 6) and Woolly Arnica (*Arnica tomenteuse*) (Figure 7) are both rare Limestone Barrens plant species that are found in parts of Port au Choix.



**Figure 5 – Fernald’s braya (*Braya fernaldii*), Threatened.
Found only on the Great Northern Peninsula.**



**Figure 6 – Wild chives (*Allium scoenoprasum*) found
at proposed Management Unit B site are considered
rare plants on the island of Newfoundland.**



Figure 7 – Woolly arnica (*Arnica tomentosa*), found at Barbace Cove is a rare plant.

Description of the Proposed Stewardship Zone

The Port au Choix Stewardship Zone was designed to contain Limestone Barrens areas within the town in which species at risk have been found as well as areas that have been identified by the Limestone Barrens Species at Risk Recovery team as potential habitat for species at risk. By signing a Species at Risk Stewardship Agreement, the town and residents become stewards of the habitat within this Stewardship Zone and commit to using a stewardship ethic in all decisions involving existing habitat to minimize and eliminate the effects of human activity on species at risk within the town. The Stewardship Zone, for the purposes of this agreement, will be the municipal planning boundary for the Town of Port au Choix (see Appendix 2).

Description of the Proposed Management Units

Limestone Barrens habitats of special significance within a Stewardship Zone which require added protection are designated as Management Units (see Appendix 2 and Appendix 3). These are areas of critical importance to Limestone Barrens species at risk plants and their habitat. Fernald's braya exists at proposed Management Unit A. The other proposed Management Units are deemed to potentially provide recovery habitat for this species.

1. Management Unit A (13402.70 m²/3.31 acres)

Management Unit A contains significant populations of Fernald's braya. The plants occur within this very restricted area within the Town's jurisdiction just at the entrance to the Port au Choix National Historic Site. Threats to this site have included ATV and other vehicular use, dumping, etc.

2. Management Unit B (58372.20 m²/14.42 acres)

Management Unit B is located just off the main highway, before entering town, at the back of the local Foodland grocery store. Researchers have identified within this special section of Limestone Barrens habitat, a large population of Wild Chives (a plant that has been identified as rare in the province of Newfoundland). In addition, this site comprises very interesting sections of limestone pavements.

3. Management Unit C (9269.42 m²/2.29 acres)

Management Unit C is located approximately one kilometre off the main highway adjacent to Eddies Cove Road. A close look at this site reveals beautiful elaborate patterned ground which has been formed from alternate thawing and freezing cycles. In addition, there are several other Limestone Barrens plant species found at this site.

4. Management Unit D (5759.89m²/1.42 acres)

Management Unit D is located on the tip of the peninsula at Barbace Cove. Although no species at risk plants have been found here this site has been identified by the Limestone Barrens Species at Risk Recovery Team as a potential habitat for the reintroduction of Fernald's braya. This is an area of Limestone Barrens that is home to the Woolly Arnica, a rare Limestone Barrens plant species. In addition, there are beautiful geological features called stone stripes and several other Limestone Barrens plant species found at this site.

Existing Land Use and Its Potential Impact on the Limestone Barrens

Widespread loss of natural habitat has occurred throughout the Limestone Barrens since Fernald and his associates first identified braya along the coast in the mid-1920s. The greatest habitat loss occurred between 1970 and 1995. Many of the activities that historically caused and are currently causing habitat loss, also result in direct mortality of braya plants.

Gravel extraction

The foremost factor in habitat change on the Limestone Barrens has been the establishment of quarries for removal of limestone, primarily for road construction. Quarrying has changed the frost-sorted substrate of patterned ground having coarse- and fine-grained fractions into a homogeneous shallow gravely substrate without a distinct fine-grained component. Quarrying effectively removes all vegetation and most of the thin soil, and reestablishment of a native plant community at a quarried site will likely require generations if not centuries. Current Species at Risk legislation protects braya populations from destruction by quarrying, but in the past, plant communities containing Long's braya and Fernald's braya were destroyed along the coast. Quarries were, and continue to be, established for limestone aggregate that is primarily used for road construction. Illegal quarrying is happening and although there have been no documented observations of direct mortality due to this activity, quarrying remains the single most important threat to the survival of Fernald's braya.

Residential Development

Until recently, habitat degradation has been actively occurring within Port au Choix National Historic Site, where Fernald's braya reaches its southern limit. Portions of the Limestone Barrens were damaged by heavy equipment used during road construction and hydro line erection. Even today, some locations of Fernald's braya may be threatened by community growth. Building on the outskirts of the town where this species exists may result in the destruction of plants as well as associated critical habitat.

Off-road vehicle use

Off-road vehicle damage by all-terrain-vehicles and trucks continues to be a threat throughout the Limestone Barrens, and is especially severe within the community of Port au Choix. Undisturbed, natural sites are very vulnerable to off-road vehicle damage. After vehicles have driven over them, plants are found uprooted in tracks or have cracked leaves or stems, and the entire site may exhibit changes in hydrology due to water pooling in vehicle tracks and substrate compaction. It may take decades for these habitats to recover.

In July 2001, Parks Canada instituted a ban on off-road vehicle use within the Port au Choix National Historic Site and has been monitoring compliance. Still, there have been several instances where plants have been damaged by the inappropriate use of off-road vehicles on the Limestone Barrens.

Drying wood and fish nets

For decades locals have piled wood for drying and spread out fish nets for maintenance and drying on the Limestone Barrens. When the wood and nets are removed, the entangled vegetation is ripped from the ground, and the plants may be damaged. Stewardship initiatives have resulted in a decline in these activities however the drying of fish nets was noted to be regularly occurring on the Limestone Barrens on Pointe Riche near Port au Choix and is most likely also occurring elsewhere.

Litter

The illegal dumping of garbage on the Limestone Barrens has been a problem within the Port au Choix Stewardship Zone and contributes to the degradation of species at risk habitat. A project involving local community groups, such as the Conservation Corps Green Team, could be initiated to clean up the area affected and remove any foreign materials. An increase in surveillance by municipal and provincial officials would also help curb the problem.

Section 4: General Policies for Species at Risk Conservation

The Town's Commitment to Stewardship

In signing a Species at Risk Stewardship Agreement, the Town has committed to using this conservation plan as a guide to best management practices in/around the Limestone Barrens within its Stewardship Zone and Management Units. In addition, St. Theresa's Elementary School has also signed a "good will" stewardship agreement. By signing this agreement the school has committed to helping implement this habitat conservation plan. It is hoped that a stewardship ethic will be fostered within the community since the conservation of species at risk depends not wholly on conservation plans or regulations, but on the conservation/stewardship ethic of residents and of visitors to the Town.

The Stewardship Zone and Management Units will be managed to ensure the maintenance and possible enhancement of species at risk populations and habitat. Managing bodies will include the Town Council, the Department of Environment and Conservation, Wildlife Division, and staff of the Limestone Barrens Habitat Stewardship Program.

Benefits for Residents

The Limestone Barrens Habitat Stewardship Program hopes to build an identity for the Limestone Barrens as a source of pride for residents and a destination for naturalist and plant lovers. From an economic viewpoint, in the past few years the rare plants of the Limestone Barrens habitat have become an eco-tourism draw for a growing number of residents and non-residents. The potential economic benefits to be gained from tourism are tremendous since it is one of the largest industries in the world. With a lack of economic opportunity in the area the amazing biological diversity of the Great Northern Peninsula Limestone Barrens habitat presents new opportunities for its residents. The Town may wish to use these opportunities to increase tourism to the region. In developing recreational and tourism opportunities, careful consideration for the wildlife populations must be included in the planning process. Otherwise, human activities may result in negative impacts to the very resource that is providing the attraction.

Surely the most important benefit that people receive from stewardship is the opportunity to increase their knowledge of species at risk and nature in general. The accessibility of the Limestone Barrens habitat to the local schools makes it an ideal site for environmental and Limestone Barrens habitat education.

Management of the Stewardship Zone

Activities within the Stewardship Zone will be managed on a "sustainable use" or "wise use" basis, whereby permitted activities are implemented so as to minimize impacts on

the Limestone Barrens and associated species and risk as well as other wildlife populations. Development proposals which, in the view of council, may negatively impact the Limestone Barrens, species at risk or other wildlife within the stewardship zone should be forwarded to the Wildlife Division for comment with a thirty day notice period. The Limestone Barrens Habitat Stewardship Program will help to implement the plan as will St. Theresa's Elementary School who has also signed a good-will stewardship agreement with the province (Appendix 1).

Management of the Management Units

Activities within the Management Units will be managed on a "sustainable use" basis, whereby permitted activities do not result in the loss of Limestone Barrens or species at risk populations. As such, the Limestone Barrens and any associated rare or at risk species will be at the forefront of management decisions. Efforts will be made to reduce pre-existing habitat degradation within Management Units. Only activities that have no negative or adverse impact upon the Limestone Barrens and its rare or at risk species using those habitats should be permitted within the Management Units. Development proposals which, in the view of council, may impact habitat within the Management Units should be forwarded to the Wildlife Division for comment with a thirty day notice period.

Incorporation of Management Units in Municipal Plans

The Town Council, in preparation of a draft Municipal Plan or during the process of subsequent Municipal Plan Reviews shall incorporate the agreement into any resulting Municipal Plan. Specifically, the Management Units, and any future Management Unit(s) as may be desirable from time to time, shall be declared or zoned "conservation areas", or if outside municipal boundaries, may seek to have them designated "Protected Areas" under subsection 31(1)(f) of the Urban and Rural Planning Act, 2000.

In passing regulations or by-laws related to the area's designation within a Municipal Plan, or any amendments to a future Municipal Plan, which could affect the Management Unit(s), the Town Council will consult with staff of the HSP providing a 30 day window of notice for comment.

Management by Committee

It is recommended that Towns seek to manage their agreement and the implementation of this conservation plan via a formal committee of council. This may take the form of an "Environment Committee" or "Limestone Barrens Committee" generally chaired by a member of council with volunteers from the local community making up the remainder of its membership. It has been our experience that such, often dedicated and dynamic, committees often have greater success in raising the profile of the environment and the protected areas within the larger community thereby increasing public understanding and

support over the long-term. By involving local individuals a greater sense of ownership is fostered thereby strengthening the conservation commitment.

Section 5: Limestone Barrens Conservation and Education Strategies

Conservation Corps Green Teams

The Newfoundland and Labrador Conservation Corps annually sponsors summer “Green Teams” and “Interns” generally comprised of university and high school students, to work within communities on worthwhile environmental projects. It is very beneficial to involve local Green Teams members intimately in stewardship and conservation activities since it reinforces their responsibility to other locals in being good stewards of the Limestone Barrens Habitat. In the past, local Green Team members have been involved in the following activities in the Port au Choix area: developing and conducting guided tours of the Limestone Barrens on the Dorset Trail within the Port au Choix National Historic Site; two Miss Limestone Barrens pageants; two week long kids camps; land and community use surveys; dirt bike rallies; restoration work in species at risk habitat; town clean-up; Limestone Barrens coloring contest; and the development and delivery of a puppet play about Species at Risk on the Great Northern Peninsula with a special emphasis on the threatened Fernald’s braya in Port au Choix. These activities raise awareness in the community of the Limestone Barrens and its species at risk.

Educational Programs

Public education is essential in the development of a greater sense of species at risk stewardship among town residents. In order to protect the Limestone Barrens, we must know and be able to teach others about its characteristics. With an increased understanding of the barrens, interest in its protection also increases. When people learn about what it is that they have been overlooking as they live on, work on or visit the barrens, they become more interested in preserving them.

School Programs:

The Limestone Barrens Habitat Stewardship Program has developed school programs and field trips to teach younger generations the value of natural diversity and adaptation. They have played an active role in the education of not only school-aged residents of the towns associated with the Limestone Barrens, but the adults as well. Currently, students from St. Theresa’s Elementary School in Port au Choix are learning about the Limestone Barrens habitat and its species at risk in the classroom. A Kindergarten to Grade 6 thematic unit has been placed at the school and is being used as part of the curriculum. A Grade eight science unit has also been developed by Limestone Barrens Habitat Stewardship staff and partners to use in conjunction with the Grade eight unit, “Environmental Interactions” at Roncalli School in Port Saunders. Students are using the Limestone Barrens as topics for Science and Heritage Fairs, as well as for language assignments. With the greater understanding and cooperation of local residents as well as outside visitors, support for the protection of rare plant species and vulnerable ecosystems increases.

Project Wild:

Project Wild is an educational program conducted by the Newfoundland and Labrador Wildlife Division and is aimed at youth from kindergarten to grade six. Its goal is to develop awareness, knowledge, skills and commitment resulting in informed decisions, responsible behavior and constructive actions concerning wildlife and the environment upon which all life depends. Project Wild is not just "wildlife" education. It is a broad environmental education program focusing on wildlife. Wildlife is used as a tool that naturally captures student interest and as a symbol for the fragility of the environment providing a means to also educate youth about the value of species at risk and their habitat.

Backyard Habitat for Canada's Wildlife:

This habitat awareness initiative is made available by the Canadian Wildlife Federation and is administered in conjunction with the Wildlife Division's Salmonier Nature Park. This program enables the average towns person to become an active participant in helping wildlife and in enhancing habitat for wildlife use. Backyard Habitat for Canada's Wildlife is a program that offers immediate, specific and inexpensive suggestions on how to make life better for wildlife in a particular habitat.

Nature and Art:

Some stewardship communities have used the wildlife habitat and associated wildlife in the community as opportunities to also serve as a natural location to bring together nature and art. This is made much simpler if a central building or interpretation area is present on site. Local art classes and drama groups use the freedom afforded by an outdoor theatre for educational exercises. This could involve field trips whereby students could interpret the beauty of nature through various mediums (chalk, paint, etc.) or a day of sketching to the sound of nature or music. Being innovative in efforts to assemble art supplies might include visiting websites like Crayola.com which offer special resource grants to educators.

Similarly, drama classes could develop a play or a series of dramatic readings based upon the species at risk at their habitat within the community with evening delivery in a lighted amphitheatre. Several amphitheatres in Eastern Canada utilize the open-air concept to show nature-related videos or videos with an environmental message outdoors in the evening. Videos could be tailored to various ages and could include nature-related craft projects. A good starting point for videos and educational nature-oriented craft projects for children may include websites like hookedonnature.org and planetpals.com.

Recreational Use Development

In many Stewardship Zones and Management Units there may exist the potential to develop a trail system and/or interpretive signage to allow public access to your community's significant species at risk habitat. This will also help raise, in the community, the profile of the habitat and the fact that the stewardship agreement exists. Trail or other development should be undertaken in consultation with staff of the HSP. One of the most effective ways for people to learn is through doing. Bringing young people and members of the general public into special areas (in a natural setting) for the purposes of applied learning would be a critical part of any educational programming planned for the area.

Sustainable recreational use of the Limestone Barrens can be encouraged with the designation of a walking trail whereby foot traffic can be controlled. Care must be taken during any trail construction so as not to degrade the quality of habitat. Trail maintenance will be required and this responsibility should also be clearly understood from the outset. Interpretative signage could be posted at areas along a walking trail and at a potential parking area to raise awareness of the sensitive nature of the area and to identify the best times to utilize the area to minimize disturbance. Currently, the interpretative panels at Port au Choix National Historic Site and guided tours at Burnt Cape Ecological Reserve are providing opportunities for local residents and visitors to learn more about the barrens (Figure 8).



Figure 8 – Limestone Barrens Interpretation Panels at Port au Choix National Historic Site.

Several stewardship communities have taken the concept of recreational use of their stewardship areas a step further by actually building “Interpretation Centers” in strategic locations targeted to bring residents and visitors into the conservation area to enjoy and learn about the habitat and the species found there. These buildings, shelters or amphitheatres can serve as wonderful, natural locations for certain educational programs and seasonal community activities where a more permanent venue is appropriate. This

type of project would lend itself to specific sources of funding or grants (i.e. Commercial Building Incentive Program). Other venues of this sort have been funded and assisted in core-funding by industry leaders like Petro Canada (Fluvarium) and Irving Oil (the Irving Eco-Centre).

Habitat Restoration

Preservation of existing habitats and their complex communities should be the top priority in conservation of species at risk. However, where losses have already occurred, restoration of habitats is the next best option.

During the summers of 2008 and 2009 two Conservation Corps Newfoundland and Labrador Green Teams (4 individuals per team) along with their local regional supervisors conducted small scale restoration within the Long's braya critical habitat site at Sandy Cove Provisional Ecological Reserve. This restoration was performed in conjunction with the Limestone Barrens Habitat Stewardship Program (LBHSP), NL Department of Environment and Conservation (Wildlife Division and Parks and Natural Areas Division) and MUN researchers. This particular restoration addressed the damages done by quarrying activity in order to avoid further erosion of Long's braya critical habitat. It involved participants removing rocks which were left behind in mounds/piles from limestone quarrying. The removal of rocks benefits the plants by leveling out their habitat thereby reducing disturbance within the habitat and allowing for the recovery of the species.

To date four areas have been restored at Sandy Cove Provisional Ecological Reserve and this same process could be used to restore other areas of the Limestone Barrens that have been damaged by quarrying. Such restoration should only be carried out in consultation with the Wildlife Division and the Limestone Barrens Species at Risk Recovery Team.

Litter Removal

It is strongly recommended that community interest groups and individual residents work cooperatively to remove the large quantity of litter in and around all portions of stewardship zones on a regular basis in appropriate ways and at appropriate times. This work should only be conducted in consultation with the Wildlife Division and Limestone Barrens Species at Risk Recovery Team.

Youth Ambassador Program

The Limestone Barrens Youth Ambassador Program, which commenced in October 2006, raises awareness of stewardship activities pertaining to the Limestone Barrens habitat and its species at risk to youth at Roncalli Central High School and to local residents of the Port au Choix and Port Saunders areas. Youth Ambassador Programs could be initiated in the schools of other towns on the Limestone Barrens.

APPENDIX 1:

STEWARDSHIP AGREEMENT

THIS AGREEMENT made at Port au Choix, in the Province of Newfoundland and Labrador this 22nd day of September, 2009.

BETWEEN: **HER MAJESTY THE QUEEN IN RIGHT
OF NEWFOUNDLAND AND LABRADOR,**
as represented by the Honourable the Minister
of Environment and Conservation

(hereinafter called the "Minister")

-of the one part-

AND: **THE TOWN OF PORT AU CHOIX**
a corporation pursuant to Section 15 of the *Municipalities Act*,
1999

(hereinafter called the "Town")

-of the other part-

WHEREAS the Government of Newfoundland and Labrador has entered into a partnership with others for the implementation of the Limestone Barrens Habitat Stewardship Program funded through the Government of Canada's Habitat Stewardship Program for Species at Risk;

AND WHEREAS the parties hereto recognize that stewardship of the Limestone Barrens habitat is fundamental towards maintaining biodiversity and ensuring the conservation of this habitat;

AND WHEREAS the Minister proposes that certain important Limestone Barrens habitat within the Town be protected through and with the cooperation of the Town in accordance with this Agreement and a Conservation Plan developed hereafter;

AND WHEREAS the Town has agreed to enter into this Agreement for the purpose of protecting those areas of important Limestone Barrens habitat within its jurisdiction.

NOW THEREFORE IT IS AGREED BY THE PARTIES HERETO AS FOLLOWS:


1. The lands herein delineated and designated as a Stewardship Zone (being the lands outlined on a certain Schedule annexed hereto and marked "A") shall be managed in accordance with the terms and conditions of this Agreement including any Conservation Plan developed hereafter for better protection of the Limestone Barrens.
2. Within the Stewardship Zone, the Parties will establish Management Units identified in Schedule "A" and other Management Units as may be desirable from time to time which shall be subject to the terms and conditions of a Conservation Plan designated to protect the Limestone Barrens habitat.
3. The Conservation Plan shall be developed in cooperation with the Minister and the Minister agrees to provide such advice and expertise necessary or advisable for the development of the Conservation Plan.
4. The Town agrees that in the preparation of a Municipal Plan for the Town or any amendments to any existing Municipal Plan, the areas designated as Management Units shall be recommended by the Town to be appropriately declared protected areas under subsection 13(3)(f) of the *Urban and Rural Planning Act, 2000* (or such other legislation in amendment or substitution therefore as may be brought into effect from time to time). The Town in passing regulations or by-laws related to the protected areas so designated under the Municipal Plan or amendments thereto and which may affect the Stewardship Zone shall do so in consultation with the Minister and in keeping with the principals of this Agreement.
5. The parties to this Agreement, their consultants, servants, or agents, shall have and exercise reasonable rights of access to the Stewardship Zone for all purposes necessary or incidental to this Agreement and in particular, but without limiting the generality of the foregoing, for the purpose of developing and carrying out the Conservation Plan.
6. Each of the parties agree that they will exercise their best efforts to further develop management measures for more effectively carrying out their mutual intentions as expressed in this Agreement.
7. If at any time during the term of this Stewardship Agreement the Parties deem it necessary or desirable to make any alterations or additions to it, they may do so by means of a written amendment between them which shall be supplemental to and form part of this agreement.

IN WITNESS WHEREOF the parties have caused these presents to be executed in accordance with their respective rules and regulations on the day and year first before written.

SIGNED, SEALED AND DELIVERED
by the Honourable the Minister of
Environment and Conservation
in the presence of:



Witness 


**THE HONOURABLE CHARLENE
JOHNSON, MINISTER OF
ENVIRONMENT AND
CONSERVATION**

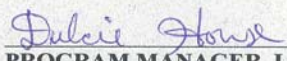
THE SEAL OF the Town of Port au Choix
hereunto affixed in the
presence of:

Witness 


THE TOWN OF PORT AU CHOIX

SIGNED AND DELIVERED
by the Program Manager for the
Limestone Barrens Habitat Stewardship
Program in the presence of:

Witness 


**PROGRAM MANAGER, LIMESTONE
BARRENS HABITAT STEWARDSHIP
PROGRAM**

STEWARDSHIP AGREEMENT

THIS AGREEMENT made at Port au Choix, in the Province of Newfoundland and Labrador this 22nd day of September, 2009.

BETWEEN: **HER MAJESTY THE QUEEN IN RIGHT OF NEWFOUNDLAND AND LABRADOR,**
as represented by the Honourable the Minister of Environment and Conservation

(hereinafter called the "Minister")

-of the one part-

AND: **ST. THERESA'S ELEMENTARY SCHOOL**
a school located in the Town of Port au Choix, in the Province of Newfoundland and Labrador

(hereinafter called the "Partner")

-of the other part-

WHEREAS the Government of Newfoundland and Labrador has entered into a partnership with others for the implementation of the Limestone Barrens Habitat Stewardship Program funded through the Government of Canada's Habitat Stewardship Program for Species at Risk;

AND WHEREAS the parties hereto recognize that stewardship of the Limestone Barrens habitat is fundamental towards maintaining biodiversity and ensuring the conservation of this habitat;

AND WHEREAS the Minister proposes that the Great Northern Peninsula Limestone Barrens Habitat be protected through stewardship and education activities with the cooperation of the Partner in accordance with this Agreement and the Limestone Barrens Habitat Conservation Plan;

AND WHEREAS the Partner has agreed to enter into this Agreement for the purpose of increasing awareness of the limestone barrens habitat;

NOW THEREFORE IT IS AGREED BY THE PARTIES HERETO AS FOLLOWS:



1. The conservation of the limestone barrens identified through the Municipal Stewardship Agreement with the Town of Port au Choix (being those areas outlined on a certain Schedule annexed hereto and marked "A") shall be supported by the Limestone Barrens Habitat Stewardship Program delivered in accordance with the terms and conditions of this Agreement and of the Limestone Barrens Habitat Conservation Plan for the better protection of the limestone barrens and associated plant species.
2. The parties agree to cooperate in the promotion of best stewardship practices that will be identified in the Conservation Plan to positively influence activity within the Stewardship Zone.
3. The Partner agrees to incorporate the stewardship of the Limestone Barrens into the school curriculum through the "Arts Smarts" program and/or other programs as appropriate.
4. The Minister agrees to provide such advice and expertise necessary or advisable for the development of education curriculum related to the stewardship of the Limestone Barrens.
5. The parties recognize that this Agreement is not legally binding, but it is a goodwill commitment between the parties.

IN WITNESS WHEREOF the parties have caused these presents to be executed in accordance with their respective rules and regulations on the day and year first before written.

SIGNED, SEALED AND DELIVERED

by the Honourable the Minister of
Environment and Conservation
in the presence of:

Witness 



**THE HONOURABLE CHARLENE
JOHNSON, MINISTER OF
ENVIRONMENT AND
CONSERVATION**

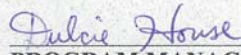
THE SEAL OF
the authorized signing officer of the
St. Theresa's Elementary School in the presence of:

Witness 


ST. THERESA'S ELEMENTARY SCHOOL

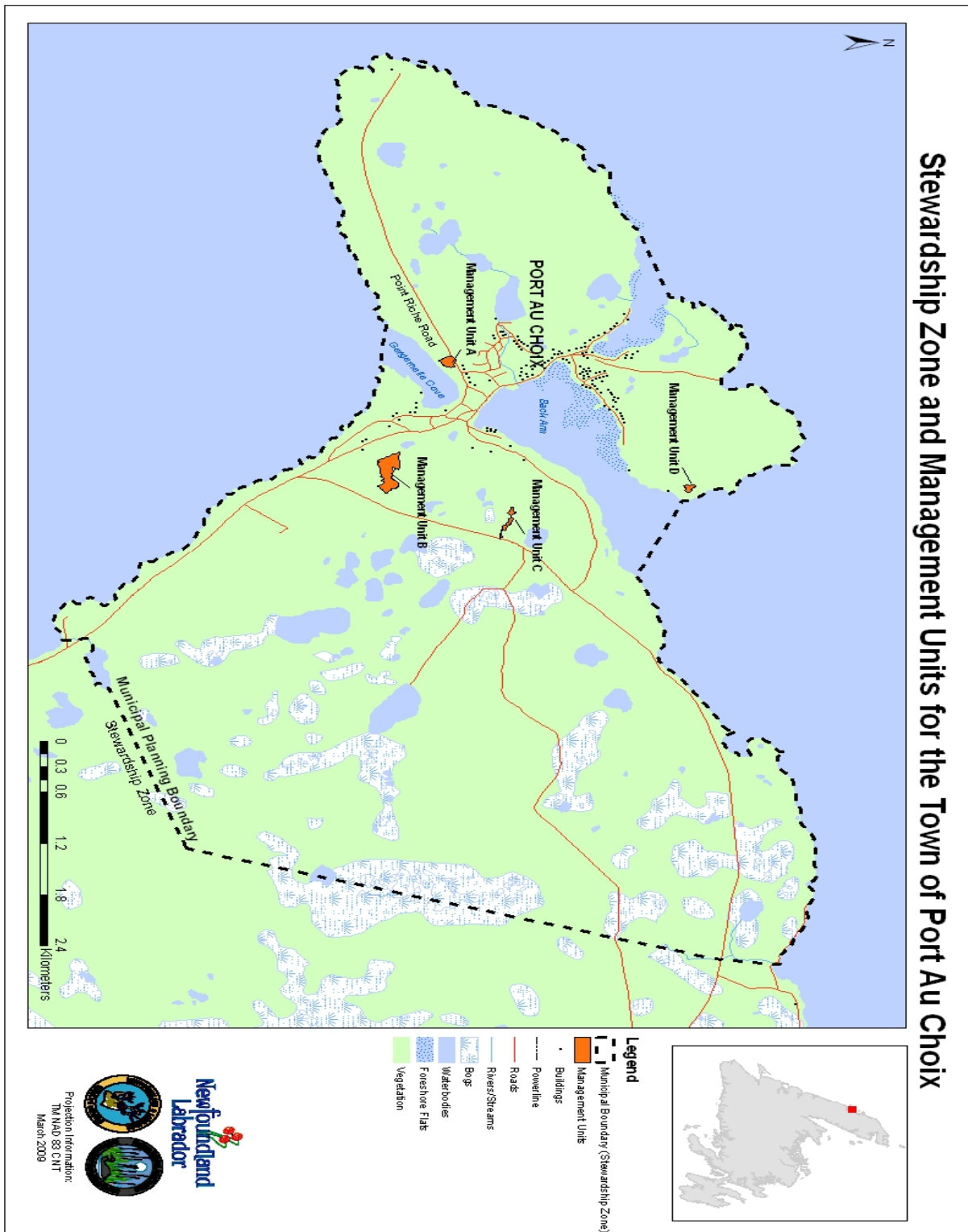
SIGNED AND DELIVERED
by the Program Manager for the
Limestone Barrens Habitat Stewardship
Program in the presence of:

Witness 

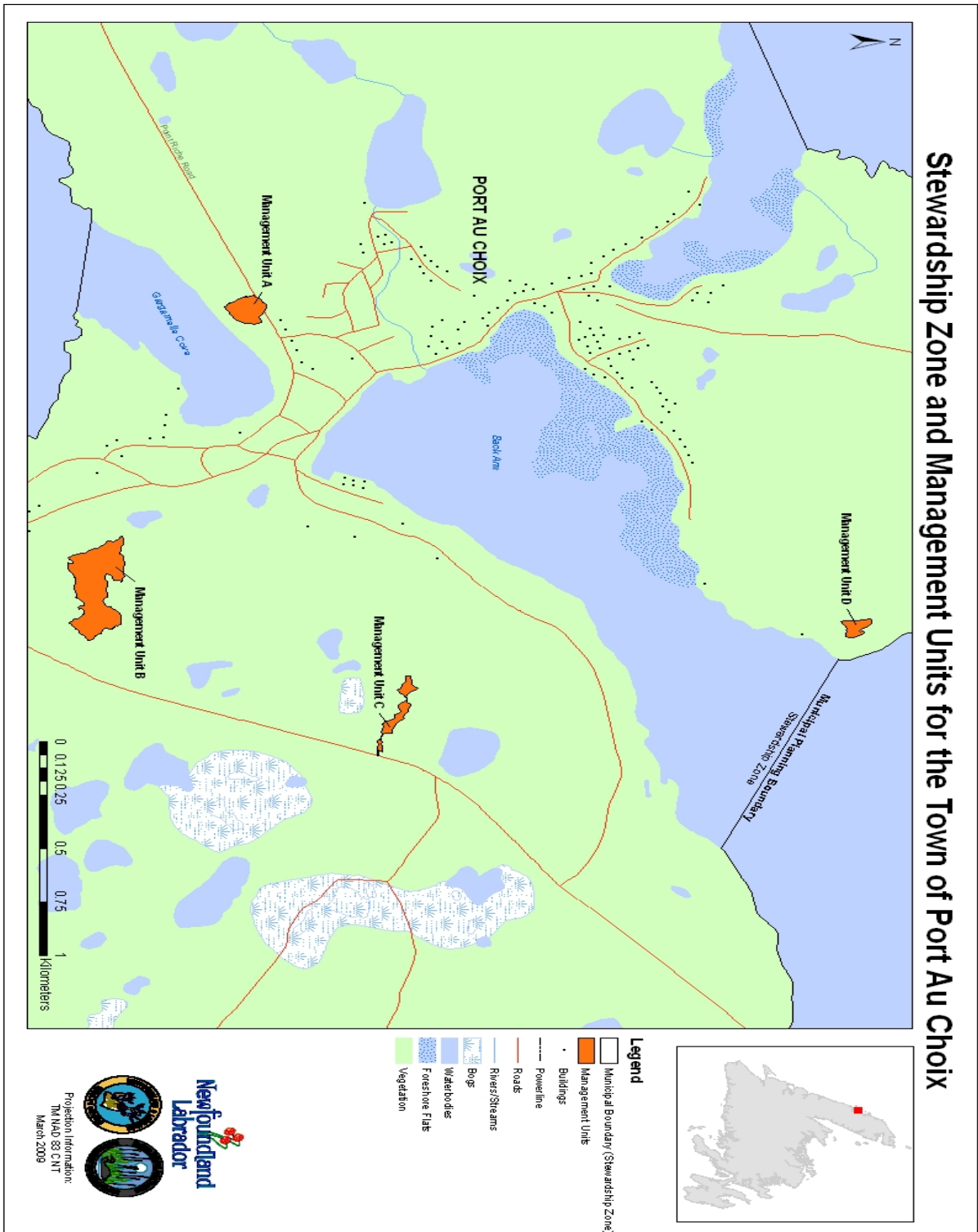

**PROGRAM MANAGER, LIMESTONE
BARRENS HABITAT STEWARDSHIP
PROGRAM**

APPENDIX 2:

Map of Port au Choix Stewardship Zone

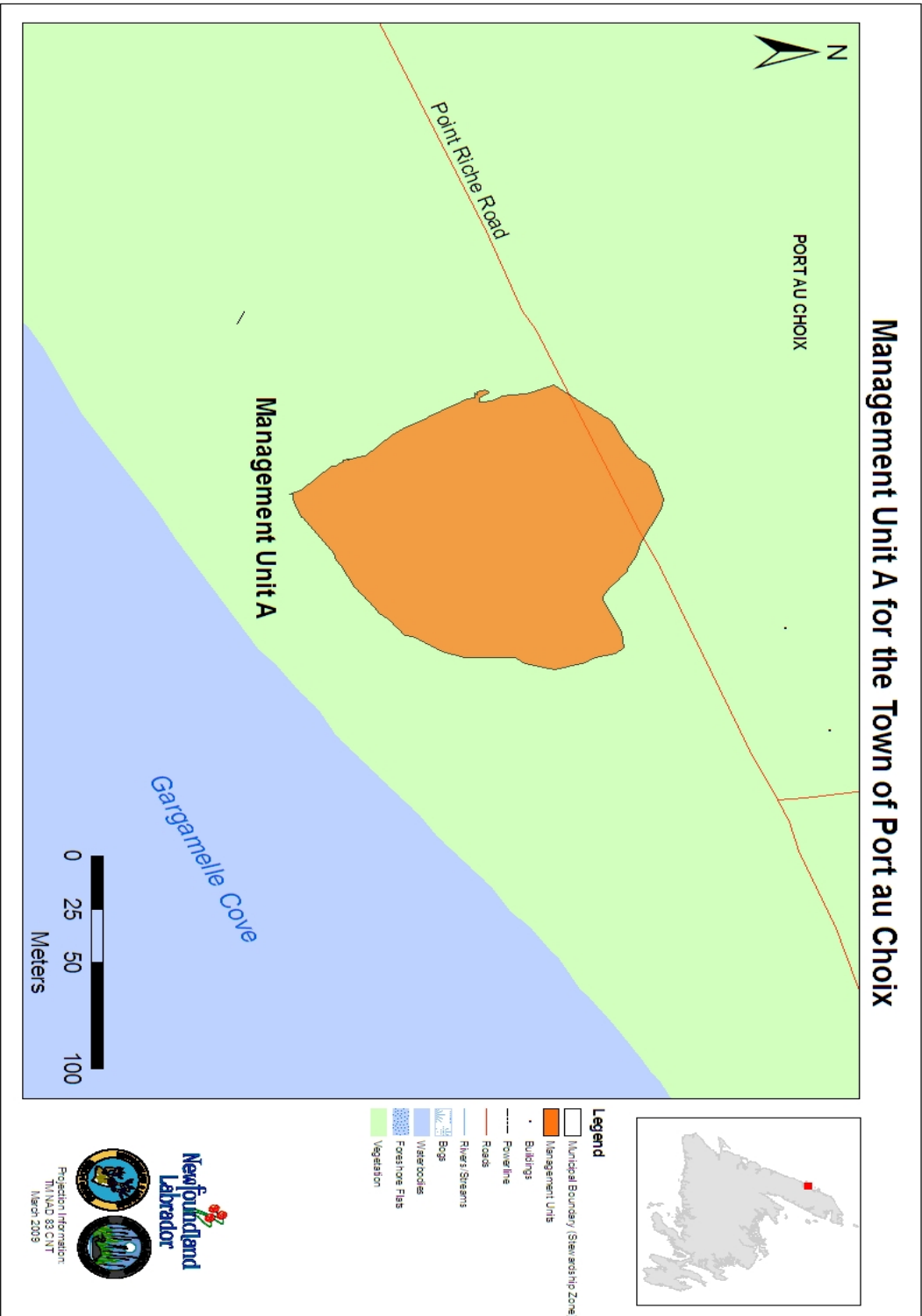


Map of Port au Choix Management Units



APPENDIX 3:
Management Unit A

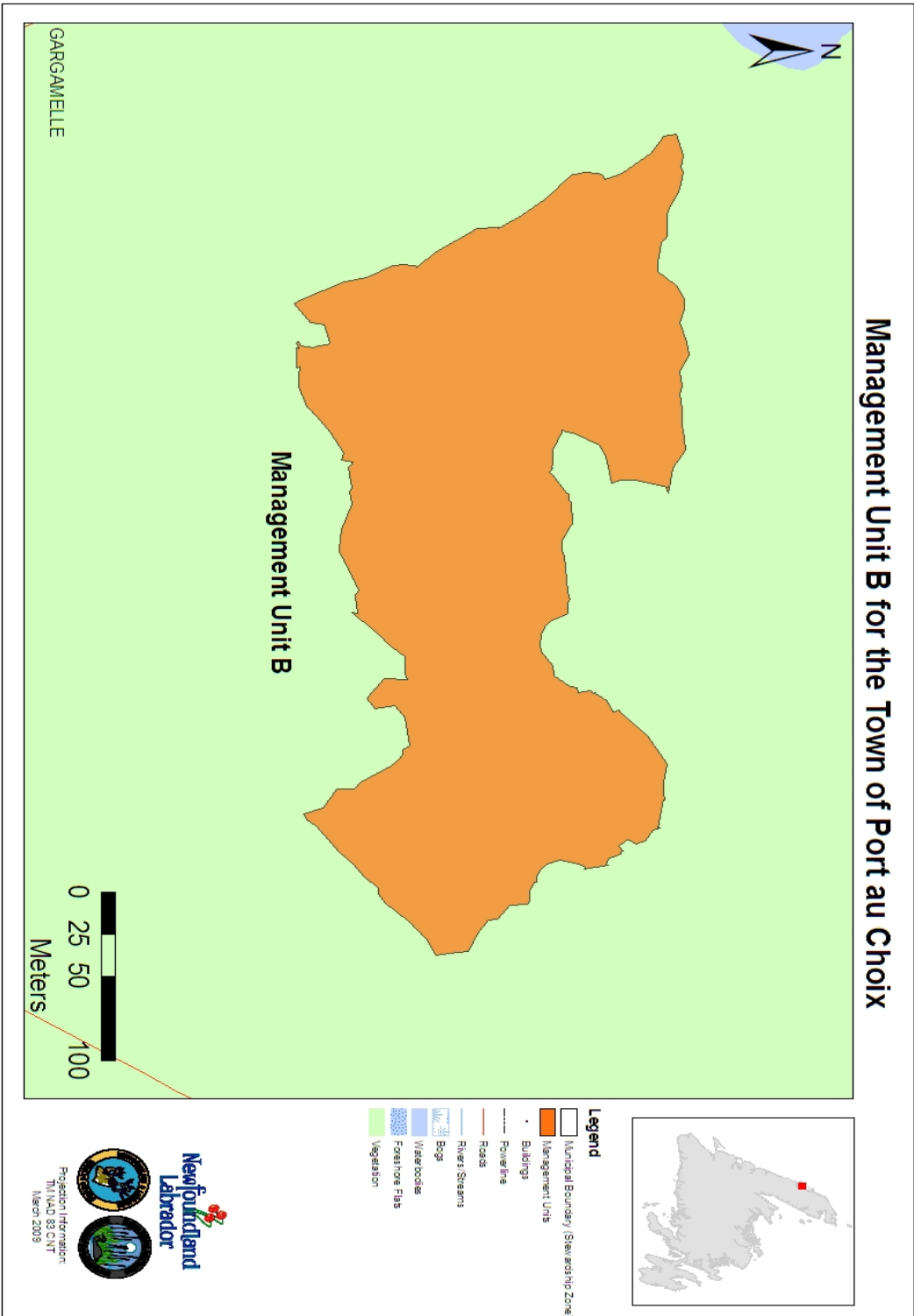




Management Unit B

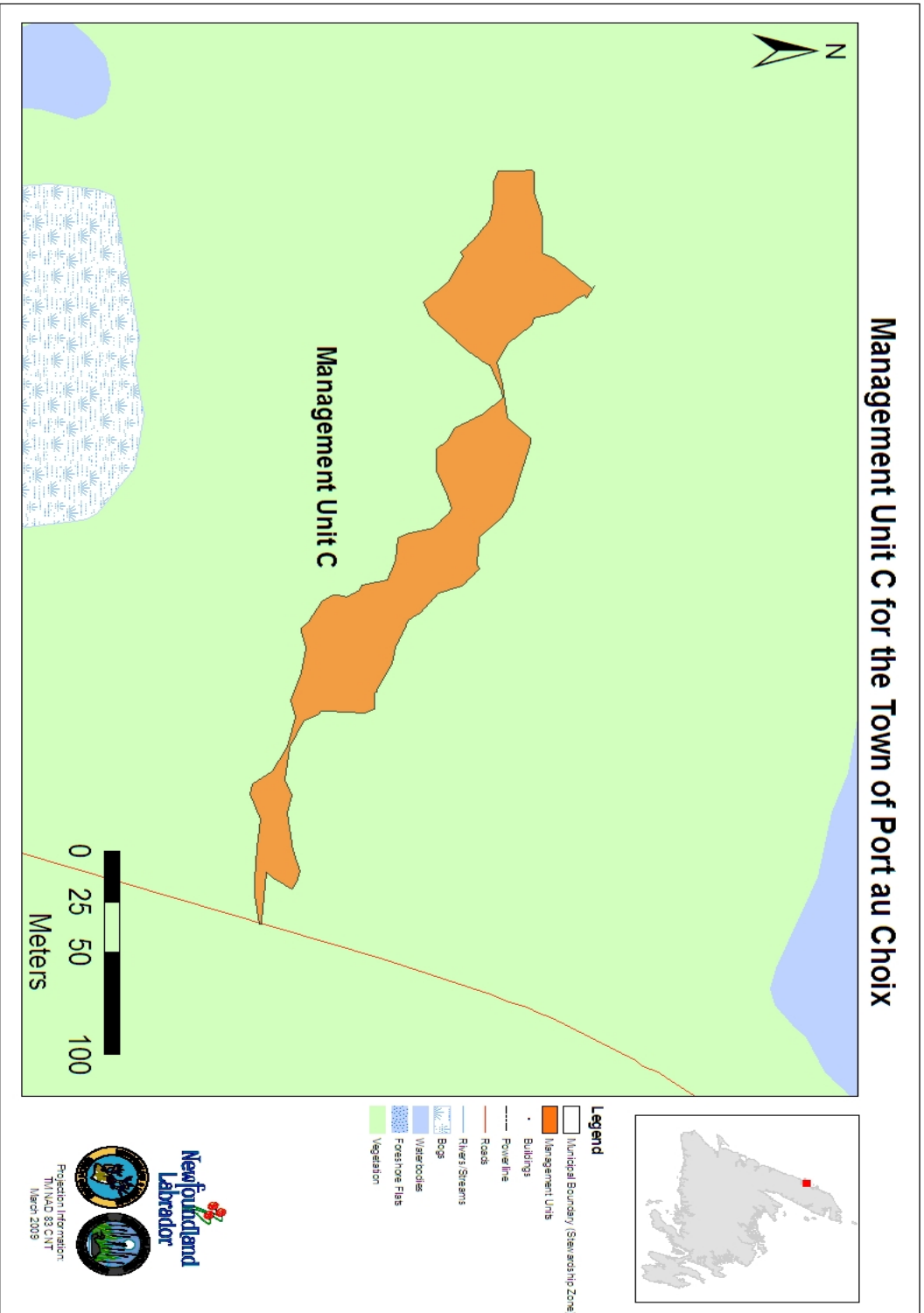


Management Unit B for the Town of Port au Choix



Management Unit C





Management Unit D



