White Island Nature Preserve

Management Plan

Prepared by: Courtney le Roux, Conserved Lands Technician, 2020

P.O. Box 603, Station A
Fredericton, New Brunswick E3B 5A6
(506) 457-2398 (ph) (506) 450-2137 (fax)
Email: naturetrust@ntnb.org
www.naturetrust.nb.ca

A written management plan is an essential tool in ensuring the appropriate preservation of lands acquired by the Nature Trust of New Brunswick (Nature Trust). The management plan presents basic information about the nature preserve and a detailed description of how the nature preserve should be managed into the future to protect its special characteristics.

Nature Trust and its stewards need to have knowledge about the resources present on the nature preserve and set goals and objectives which must be followed to maintain them. A well-planned management plan will communicate the Nature Trust's mission regarding the use of the nature preserve, well into the future.

Management plans are necessary for understanding the special characteristics of a nature preserve and ensuring their protection for future generations.

Table of Contents

Table of Figures

Executive Summary

White Island (PID 15050008) is an 8.08 ha island in the Passamaquoddy Bay, Charlotte County, New Brunswick and is accessible by boat, canoe, or kayak from Lord's Cove harbour on Deer Island. This island was granted to Charles S. Lord in 1912 and forms part of the West Isles group of islands, in the Local Service District of West Isles which services Deer Island and surrounding islands. This island falls within the Quoddy Region Important Bird Area (IBA), and is part of the Whole of Quoddy Region and Head Harbour, West Isles, and the Passages Ecologically and Biologically Significant Area (EBSA). This acquisition is a fee-simple donation from Douglas DeAngelis, facilitated by American Friends of Canadian Conservation.

1. Introduction

1.1. Brief History of Acquisition of Nature Preserve

Date of acquisition: TBD

Method of acquisition: Fee simple donation via American Friends of Canadian Conservation

Donor: Douglas John DeAngelis

1.2. General Location and Relationship to Surrounding Area

- PID 15050008 (White Island Nature Preserve)
- The property is the whole of White Island, part of the Western Isles in the Bay of Fundy. The island is south of Nubble Island of the Western Isles Nature Preserve, and east of Deer Island.

1.3. Key Ecological or Other Significant Value of Nature Preserve

The island is part of the Head Harbour Passage, West Isles Archipelago, and the Passages Ecologically and Biologically Significant Area and the Quoddy Region Important Bird Area.

2. Legal Description

2.1. Deeds or Legal Agreements

This fee simple donation will be transferred from Douglas DeAngelis, via American Friends of Canadian Conservation, to the Nature Trust in the course of time.

2.2. Legal Nature preserve Description

Municipality: Lambertville

Parish: West Isles

County: Charlotte

Perimeter Description: The Island in Passamaquoddy Bay, east of Deer Island, known as White Island, containing fourteen acres more or less, the Western Point of said Island, at a Fir Tree marked by Deputy Gillespie in the Year 1911, bearing South twenty-one degrees West from the most Southern end of Nubble Island granted to W. Hatheway, the said White Island being One Half Mile Southerly of the said Nubble Island.

Document Where the Description of the Parcel First Appeared:

Document Type: Certificate of Title

Registration Number: 22095252

Grantees: Bertha M. Lambert, Vernon Lord, Vaughan W. Lambert and Kathy A. Lambert

County: Charlotte

Registration Date: 2006-05-15

Book: Not Applicable

Page: Not Applicable

2.3. Legal Restrictions

None

2.4. Cost/Appraised Valuation/Assessed Valuation at Acquisition

Current assessment: $72,800

Approximate Fair Maket Value: $240,000 (TBD by appraisal)

3. Preserve Background

3.1. Location

PID	15050008
Lat/Long Coordinates	44.983706, -66.903333
Watershed	Bay of Fundy
Environmentally Significant Area	Head Harbour Passage, West Isles Archipelago, and the Passages Ecologically and Biologically Significant Area
Ecoregion	Fundy Coastal
Ecodistrict	Fundy Coast
Nearest major city center	Lords Cove, Deer Island

3.1.1. Directions to Nature Preserve

From Fredericton: Take NB-7 and exit 306 toward Saint John. Turn onto NB-101 N, then NB-785 S, NB-780 W, then NB-172 S. Continue on NB-172 S to the Deer Island ferry. The ferry docks on NB-772 S; boats can be launched from Lord's Cove or Richardson which are on this road.

Google Map Link

3.1.2. Nature Preserve Maps

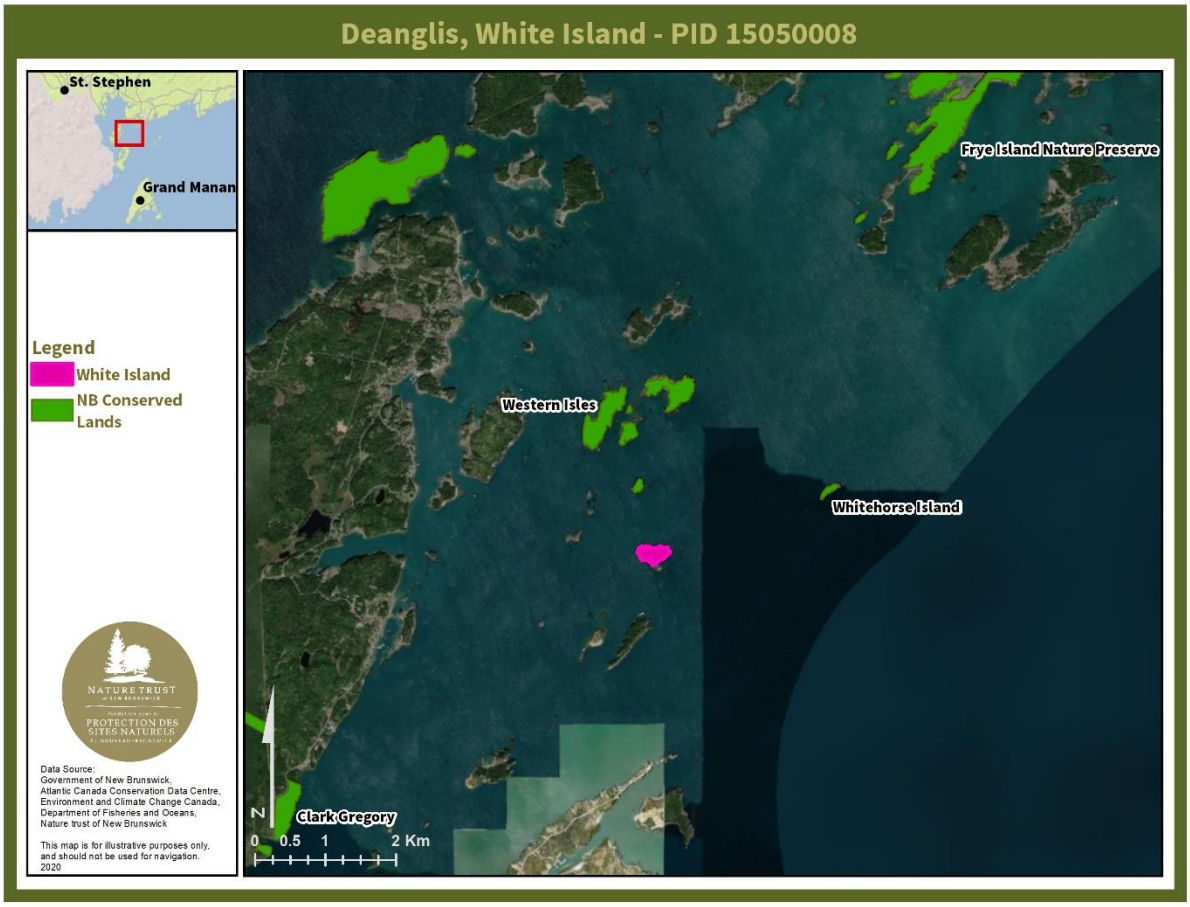

Figure 1: Contextual map of White Island nature preserve, part of the Western Isles in the Bay of Fundy.

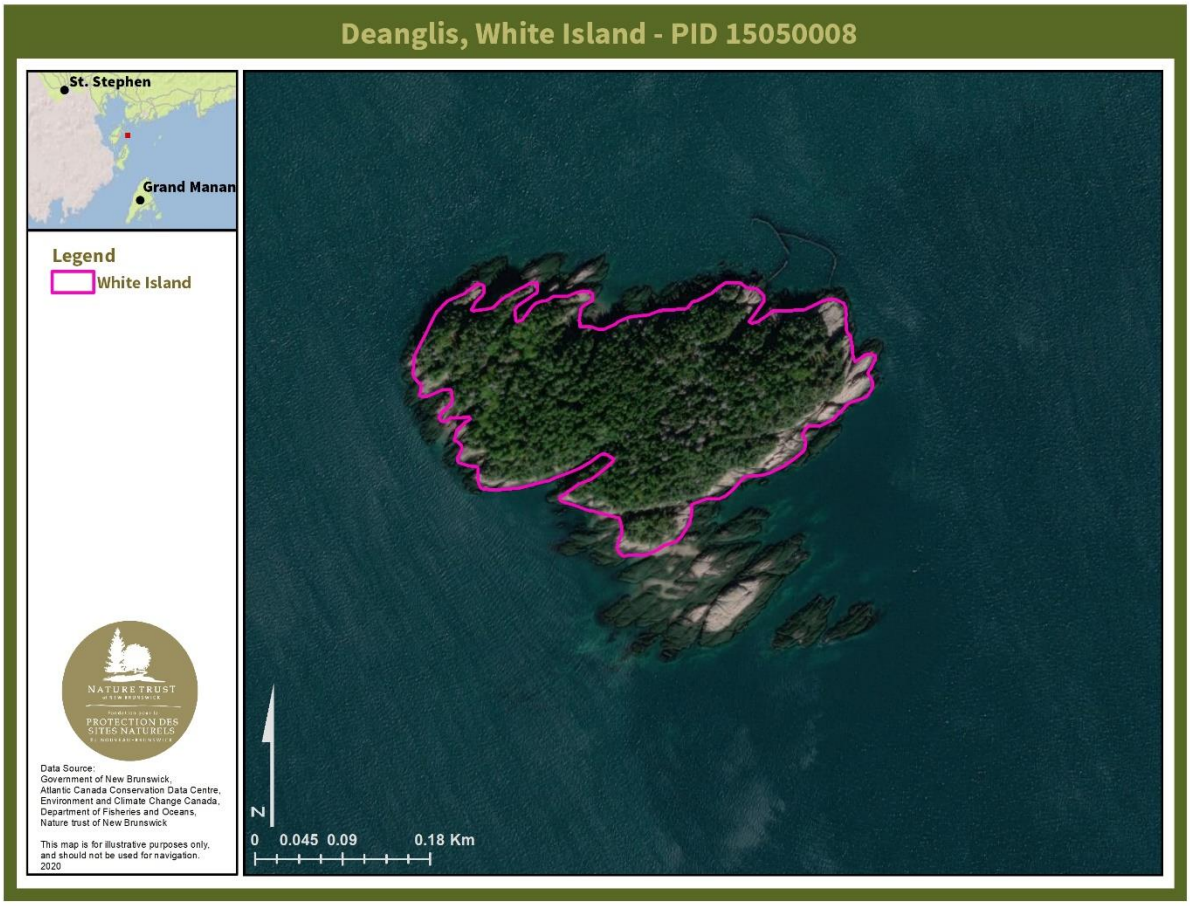

Figure 2: The boundary of White Island nature preserve.

3.2. Written General Description

White Island (PID 15050008) is an 8.08 ha island in the Passamaquoddy Bay, Charlotte County, New Brunswick and is accessible by boat, canoe, or kayak from Lord's Cove harbour on Deer Island. This island was granted to Charles S. Lord in 1912 and forms part of the West Isles group of islands, in the Local Service District of West Isles which services Deer Island and surrounding islands. This island falls within the Quoddy Region Important Bird Area (IBA), features the Whole of Quoddy Region and Head Harbour, West Isles, and the Passages Ecologically and Biologically Significant Area (EBSA). This island consists entirely of undisturbed Maritime Spruce-Fir forest (Rank: Fairly Common), intermixed with mountain ash, white birch, and red maple. Access to the island is difficult due to the steep rockfaces that form the island boundaries.

3.3. Donor Information

Douglas DeAngelis
110 Hay Street
Newbury, MA
USA, 01951

1 508-451-3672
doug@finishlynx.com

3.4. Steward Information

TBD

The Peskotomuhkati may be involved in the stewardship of this island. The extent of their involvement will be determined at a later time.

3.5. Pre-Acquisition Land Use

White Island was granted to Charles S. Lord in 1912 and remained in the Lord/Lambert family until ownership was transferred to Douglas DeAngelis in 2006. The steep rockfaces of the island make access difficult and as such there is no infrastructure on the island, and it appears to be undisturbed.

3.6. Permitted and Non-Permitted Uses

Use of Property	Permitted	Not Permitted
Hunting	X	
Dog Walking	X	
Fires		X
All-Terrain Vehicles		X
Mountain Biking		X
Rock climbing		X
Hiking	X	
Trail Development		X
Wildlife Viewing		X
Wildlife Management	X (by request)	
Invasive Species Management	X (by request)	
Research	X (by request)	
Sample Collection	X (by request)	
Snowmobiling		X
Food Harvesting		X
Agricultural activities		X

3.7. Adjacent Land Use

3.7.1. Past use

The islands in the Bay of Fundy were primarily used for recreational purposes. Some of the islands were likely harvested for timber in the past, but the difficult access of some, such as White Island, would limit the suitability for forestry activities. Aquaculture remains an active industry in the surrounding waters of this area.

3.7.2. Current use

Many of the islands in this area are conserved, including the Western Isles Nature Preserve (Nature Trust of New Brunswick), Simpsons and Pendleton Islands (Nature

Conservancy of Canada), while others are owned by the NB Department of Natural Resources and Enerfy Development (Casco Bay Island, White Horse Island,). There are active aquaculture pens to the northwest off the coast of Beans Island and many of the smaller islands surrounding White Island.

3.7.3. Probable Future Use

The owner of Sandy and Spruce Islands (south of White Island) are in discussions with American Friends of Canadian Conservation regarding the possibility of conserving these islands as well. Aquaculture is likely to remain active in the waters in the area.

4. Preserve Description

4.1. Enduring Physical Features

4.1.1. Geology and topography

The bedrock of the island is primarily conglomerate rock forming steep rockfaces into the Bay of Fundy. The bedrock geology of White Island is felsic volcanic rock from the late Devonian-early Carboniferous period, 315 – 385 million years ago (mya). This rock type is buoyant, containing feldspar and silicon, has poor fertility and slow weatherability. Other islands in the area are older, from the Belleisle Bay group of the late Neoproterozoic-early Cambrian period 521 – 630 mya and the Mascarene group from the early Silurian period, 422-443 mya.

4.1.2. Climate

The islands in the Bay of Fundy have between 1400-1600 annual degree days > 5° C, with rain (May – September) between 450 – 500 mm. This climate zone is associated with coniferous trees growing on the shallow soils that cover the felsic volcanic rock of the island.

4.1.3. Soils

Soils of White Island are of felsic volcanic parent materials with felsic pebble conglomerates. They are of residual/in-situ deposition of various deptns ranging from exposed bedrock to 100 cm in depth. These soils contain 21 – 50% coarse fragments, and are of medium-coarse texture that includes sand, loam, silt loam, sandy loam, and loamy sand.

4.1.4. Wetlands and Water Features

In addition to the rocky shores surrounding White Island (Figure 3), the island is within the Head Harbour Passages, West Isles Archipelago, and the Passages Ecologically and Biologically Significant Area (EBSA). This area is classified as an EBSA due to the presence of the following:

- species aggregations (invertebrate, avian, marine mammal)
- aggregation of oceanographic features (upwellings, currents, benthic complexity)

- uniqueness of species assemblages and environmental features that provide the mechanism for species aggregations (range of temperature and salinity, geomorphology, benthic complexity)
- fitness consequences associated with juvenile and rearing stages of fish, avian, and marine mammal species.

This EBSA extends from the east side of Deer Island to mainland New Brunswick and runs along the shoreline of the west side of Campobello Island to the coast of Maine. Due to turbulence and upwellings caused by strong tidal currents, this area is known for high concentrations of plankton and associated wildlife that come to the area to feed. Marine mammals, including the humpback whale (*Megaptera novaeangliae*), finback whale (*Balaenoptera physalus*), and harbour porpoise (*Phocoena phocoena*), frequent the area while feeding. This EBSA has the highest diversity of benthic macroinvertebrates in the Bay of Fundy, with a diverse community of sponges, sea cucumbers, and anemones.

The steeply inclined rock faces and boulders of Casco, Spruce, and White Island experience high tidal ranges flowing through the constricted passages. This results in high tidal current velocities that are sufficient to prevent significant sedimentation. Marine cliff faces show an abundance of bryozoans, anemones, sponges, and brachiopods, while overhangs are dominated by mollusks. The deeper zones (18 m) have the greatest species richness including sponges, hydroids, anemones, brachiopods, and tunicates. The distinctive sublittoral hard substrate communities are that of mollusks (*Terebratulina septentrionalis)* and the crustose coralline algae.

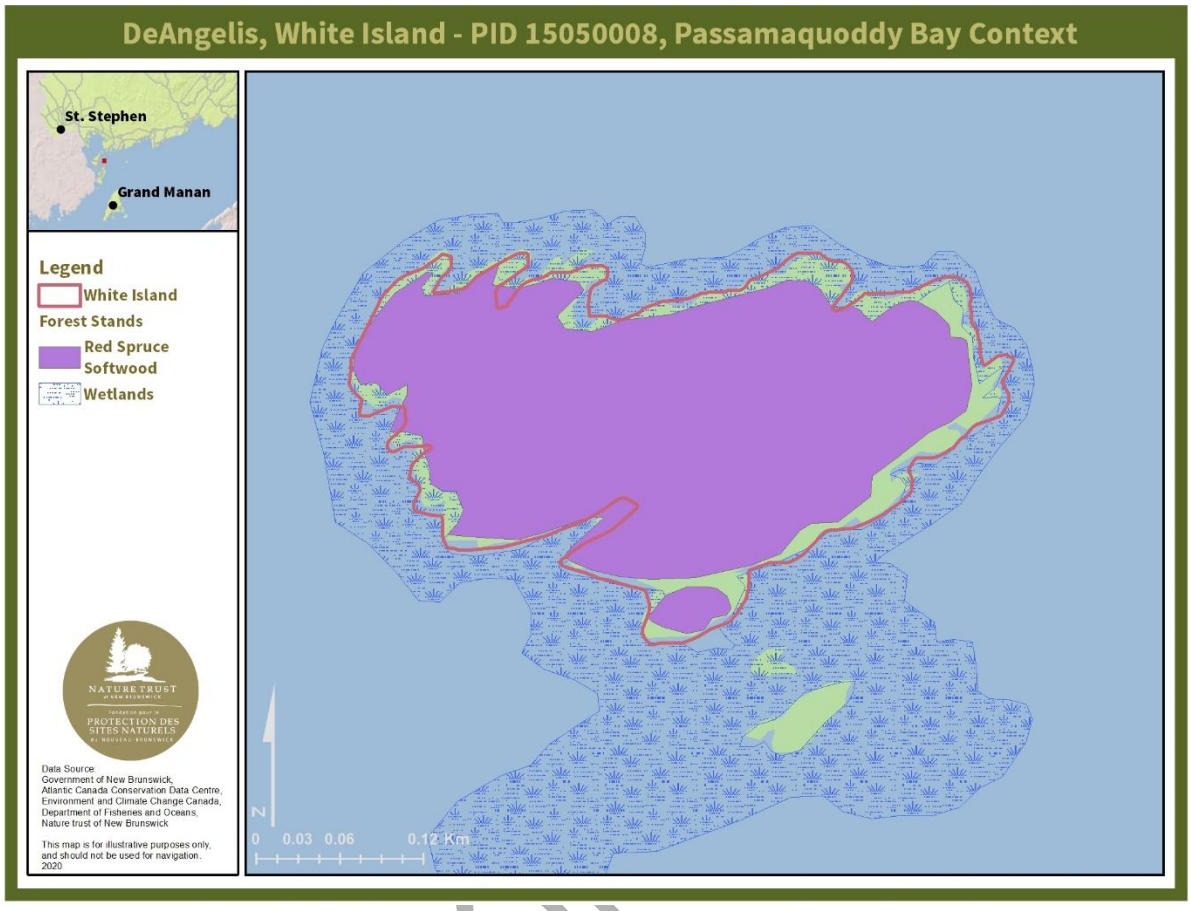

Figure 3: Areas shown as wetlands indicate rocky shores surrounding White Island.

4.2. Flora

4.2.1. General Forest Cover

Forests on White Island are composed primarily of red spruce (*Picea rubens*) and balsam fir (*Abies balsamea*), interspersed with some mountain ash (*Sorbus americana*), white birch (*Betula papyrifera*), and red maple (*Acer rubrum*). This forest is classified as Maritime Spruce-Fir Forest by the Maine Ecological Land Classiffication, with a status rank of Fairly Common in New Brunswick (Figure 4). This forest is intact and undisturbed due to the steep rockfaces of the island that make access difficult.

Figure 4: Maritime spruce-fir forest of White Island is composed primarily of red spruce and balsam fir. Photo by Walter Emrich.

4.2.2. Important Vegetative Features Including Rare and Uncommon Species

A more thorough Vegetative survey is required.

4.3. Fauna

4.3.1. General Description of Birds and Mammals

Several rare birds have been sighted in the West Isles area, some of these which were observed from the Quoddy Link Seabird Tours during the breeding season. Some of these species breed in this area, and others may over winter in the area. The species include:

- Laughing gull, *Leucophaeus atricilla* (S1B, S1M)
- Black-legged kittiwake, *Rissa tridactyla* (S1S2B, S4N, S5M)
- Razorbill, *Alca torda* (S2B, S3N, S3M)
- Black guillemot, *Cepphus grylle* (S3).

4.3.2. Rare and Endangered Species

There are pairs of Atlantic wolffish (*Anarhichas lupus*) at White Island that have been recorded for many years in crevices/caves. Sexually mature fish are thought to move inshore to shallow waters to spawn, but adult wolffish are relatively sedentary and may remain at these sites for many years. Eggs are deposited on the bottom and are guarded by the male. Larvae remain close to the site of hatching and there is limited adult migration. The Atlantic wolffish meets IUCN criteria of Critically Endangered due to an 87% decline over two to three generations. However, due to its widespread distribution, it is presently listed as a species of Special Concern by COSEWIC.

White Island and the sill close to the tip of Campobello Island are critical features in the feeding areas for finback whales, evident by recorded tracks. The outer areas of the Quoddy Region (West Isles, Campobello-Grand Manan) are also critical habitat for red-necked phalaropes (*Phalaropus lobatus;* Special Concern) from late July to early September.

4.4. Significant Habitats Found on Nature Preserve

The forest on the island is undisturbed and provides natural habitat with no human interference or infrastructure. See section 4.1.4 Wetlands and Water Features for details on the significance of the aquatic habitat surrounding White Island.

4.5. Cultural Features/history

In the summer of 2001, members of the Passamaquoddy-Scoodic Tribe reflected on the spiritual importance and cultural significance of this general area, and there is interest in protection measures. For thousands of years people utilized the West Isles for hunting, fishing, gathering, and for ceremonies. Prior to European settlement, the West Isles/ Quoddy area was frequented by the Passamaquoddy and there are several shell middens as evidence, as well as oral history recollections of porpoise hunting from canoes.

5. Key Ecological Features

5.1. Key features Protected by the Nature Preserve

See the following sections:

4.1.4 Wetlands and Water Features

4.3.2 Rare and Endangered Species

4.4 Significant Habitats Found on Nature Preserve

5.2. Conservation goal for the Nature Preserve

The Nature Trust has existing preserves and conservation easements in the immediate surrounding area in the form of Barnes, Mowat, Nubble, Birch, and Little Mowat Islands (Western Isles Nature Preserve – A Stewart Family Preserve), and Clark Gregory Nature Preserve on Deer Island at Chocolate Cove. The Nature Conservancy of Canada also protect Simpson and Pendleton islands in this area, and Whitehorse Island nearby is protected by the Province of New Brunswick as a Protected Natural Area. Due to the ecological importance of the area, these islands are of high priority for permanent protection in the form of Protected Natural Areas.

6. Threats

6.1. Anthropogenic Threats

There is risk of illegal camping on the island. The remote nature and limited access to the island protect it from many anthropogenic threats.

6.2. Non-anthropogenic Threats

There is evidence of erosion along the shoreline, possibly due to high winds and shallow soils. This increases the possibility of blowdown along the perimeter of the island, due to the lack of buffer.

Climate change may also cause an increase of water levels and/or the increase of major weather events which can alter the habitats on the island.

7. Management Requirements

These will all be included in the action plan which is managed in the Nature Trust's Salesforce platform.

7.1. Public Access

Access is permitted but will not be advertised due to the difficulty and potential danger of accessing the island.

7.2. Hunting

Hunting is permitted.

7.3. Signage

Warning signage for the steep rockfaces of the island should be considered.

7.4. Power lines

There are no power lines on the island.

7.5. Public Information Requirements and Restrictions

There is no information that requires active restriction regarding White Island. However, access should not be promoted due to the remote access and danger/liability associated with the steep cliffs that compose the island boundary.

7.6. Recreation

Not applicable, as access will not be promoted.

7.7. Trail Requirements

There are no trails on the island.

7.8. Monitoring Plan

The extent of erosion along the island boundaries should be monitored, as should any signtings of rare, uncommon, or at-risk species.

7.9. Cleanup Issues

Due to the active aquacultural industry in the area, there is a high likelihood of associated marine debris washing onto the island. This should be monitored and removed when

possible, though the difficult access limits the number of people who can participate in any cleanup activities.

7.10. Restoration Requirements

None at this time.

7.11. Mitigation of Impacts of Threats

None at this time.

7.11.1. Invasive Species Management

A full vegetation survey is required; no invasive species have been noted to date.

7.12. Boundary Lines

The parcel encompasses the entirety of White Island. As such, there are no concerns over the boundaries.

7.13. Potential Preserve Expansion

Many of the islands in the area are protected by the Nature Trust, the Nature Conservancy of Canada, or the Government of New Brunswick. American Friends of Canadian Conservation are discussing the possibility of conserving Sandy and Spruce islands to the south.

7.14. Date of Next Revision of Management Plan

The management plan is to be reviewed every 5 years, in 2026.

8. Appendices

8.1. Nature preserve Map

See Figure 1: Contextual map of White Island nature preserve, part of the Western Isles in the Bay of Fundy.

Figure 2: The boundary of White Island nature preserve.

Figure 3: Areas shown as wetlands indicate rocky shores surrounding White Island.

8.2. Aerial/Ortho Map (including date flown) Overlay with:

8.2.1. Trails

There are currently no trails on the island.

8.2.2. Key features

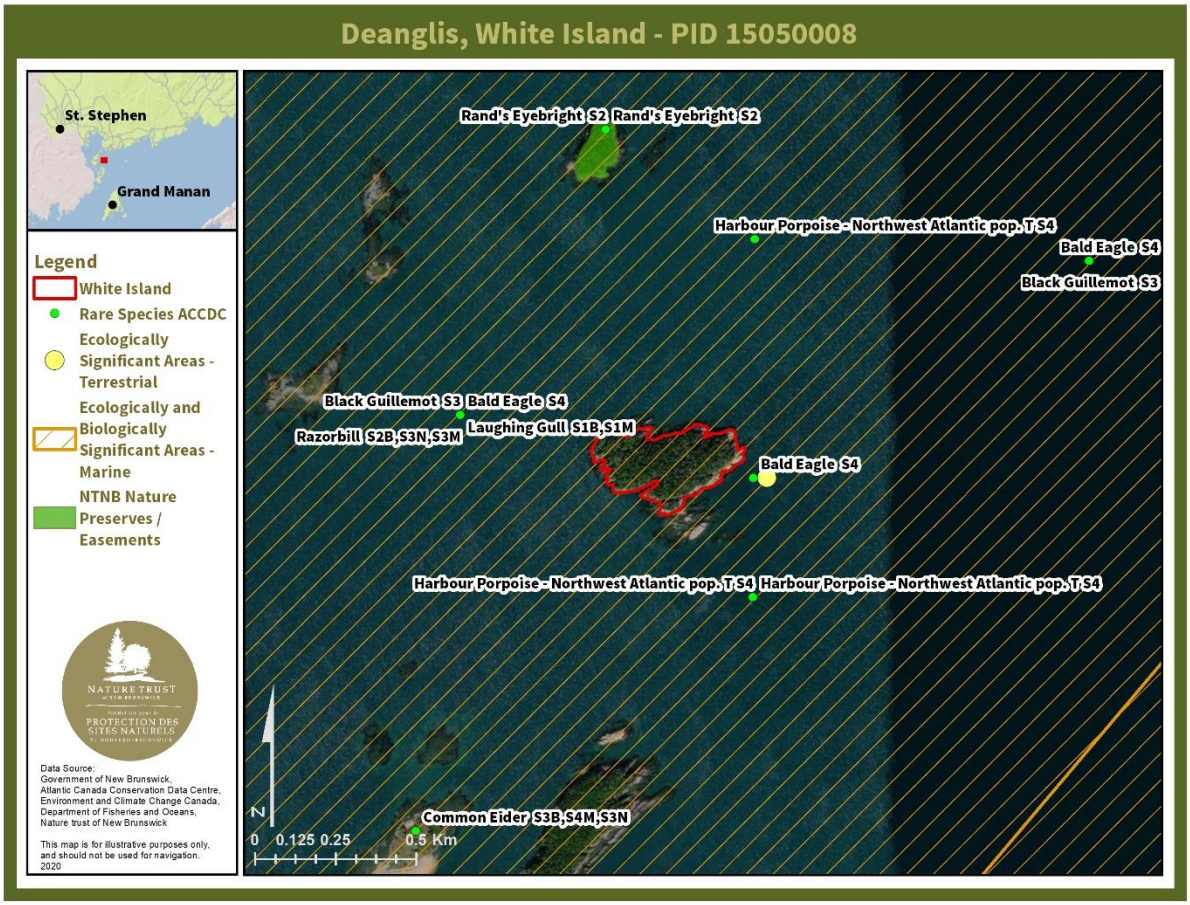

Figure 5: White island is in an Ecologically and Biologically Significant area and contains a terrestrial Ecologically Significant Area.

8.2.3. Access points

Access is via water only.

Figure 6: Access to White Island nature preserve is via water only, though the steep cliffs of the island make access difficult.

8.3. Historical Aerial Photos

Google Earth

8.4. Species Lists

8.4.1. Flora (Common and Latin names)

Common name	Scientific name
Red spruce	*Picea rubens*
Balsam fir	*Abies balsamea*
White birch	*Betula papyrifera*
Red maple	*Acer rubrum*
Mountain maple	*Sorbus americana*

8.4.2. Fauna (Common and Latin names)

Common name	Scientific name

References

AC CDC Biodiversity Database. 2019. Atlantic Canada Conservation Data Centre. Sackville, NB.

Colpitts, M. C., S. H. Fahmy, J. E. MacDougall, T. T. M. Ng, B. G. McInnis, and V. F. Zelazny. 1995. Forest Soils of New Brunswick. New Brunswick Department of Natural Resources and Energy, Timber Management Branch. Fredericton, NB.

New Brunswick Department of Natural Resources. 2008. Bedrock geology of New Brunswick. Minerals, Policy and Planning Division. Map NR-1 (2008 Edition). Scale 1:500,000. Revised December 2008.

New Brunswick Department of Natural Resources & Energy Development. 2020. Mineral Exploration Map. Accessed on (date info was accessed to find nearby mineral claims): https://nbdnr.maps.arcgis.com/apps/webappviewer/index.html?id=9222d8a1ccf54f4a9655c9d7026112a3&locale=en