



Rideau Waterway

LAND TRUST

Property Management Plan
for
Lady Kingsmill Nature Reserve



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Acknowledgements and Disclaimers

This Property Management Plan was prepared by Alyssa Fiedler, Conservation Biologist, Rideau Waterway Land Trust with guidance from Morgan Roblin, Conservation Science Manager, OLTA.

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This document also contains personal information about partner organizations and individuals. Appendix C should not be shared with those who do not have a need to know for the information contained within.

Cover illustration provided by Alyssa Fiedler, RWLT Conservation Biologist.

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1 MISSION STATEMENT

1.1 VISION, MISSION, AND GUIDING PRINCIPLES

The Rideau Waterway Land Trust’s (RWLT) vision is that “Nature has a future because our communities care.” Their mission is “To preserve important natural lands and habitat in the Rideau Corridor and foster a healthy future for our communities.”

RWLT uses the following guiding principles:

- We focus on the preservation of important land that supports plants, animals, and clean water.
- Our actions are inclusive and for the benefit of the community.
- We welcome the participation of those who appreciate the importance of nature.
- We strive for the right balance between access and the protection of conservation values.
- We partner with other organizations on mutually beneficial activities.

1.2 GENERAL GUIDELINES FOR MANAGEMENT PLAN

- The primary objective is the conservation of biodiversity.
- Use of properties owned and managed by the RWLT will be restricted to activities that are consistent with its mission statement, guiding principles and property-specific guidelines.
- Signage will be carefully planned to encourage only compatible activities. Signs at suitable access points will indicate:
 - Property ownership
 - Emergency contact name and telephone number
 - Trespassing is prohibited and access is restricted.

1.3 SITE INFORMATION USED FOR THIS MANAGEMENT PLAN

This Management Plan is based on:

- Monitoring reports:
 - “Lady Kingsmill Property Monitoring Report Aug 18th, 2020”
 - “Lady Kingsmill Property Monitoring Report June 16th & 17th, 2021”
- EcoGift appraisal report: “Narrative Appraisal Report - Lady Kingsmill - 2011”
- Island property information donation document: “Rae EcoGift app.pdf”
- Strategies identified in previous management plans

2 PROPERTY MANAGEMENT PLAN SUMMARY

2.1 PROPERTY INFORMATION

Lady Kingsmill Nature Reserve (NR) is a 2.41 hectare (5.96 acre) property located on Big Rideau Lake. The property makes up the northern half of a historical island called Grindstone Island. Lady Kingsmill NR is attached to the rest of Grindstone Island by a narrow isthmus which is bordered by two wetlands (one on either side). The rest of property consists of a mixed-woods forest delineated by shoreline all the way around. The forest is dominated by conifers and hardwoods with some softer woods while much of the understory consists thick and robust hemlock and other shrubbery.



Figure 1: Satellite Imagery of Lady Kingsmill Nature Reserve

2.1.1 Location

Lady Kingsmill NR is located on Big Rideau Lake in the Township of Rideau Lakes and falls in the Geographic Township of South Burgess. For the location of Lady Kingsmill NR relative to other RWLT properties, see **Error! Reference source not found.** below.

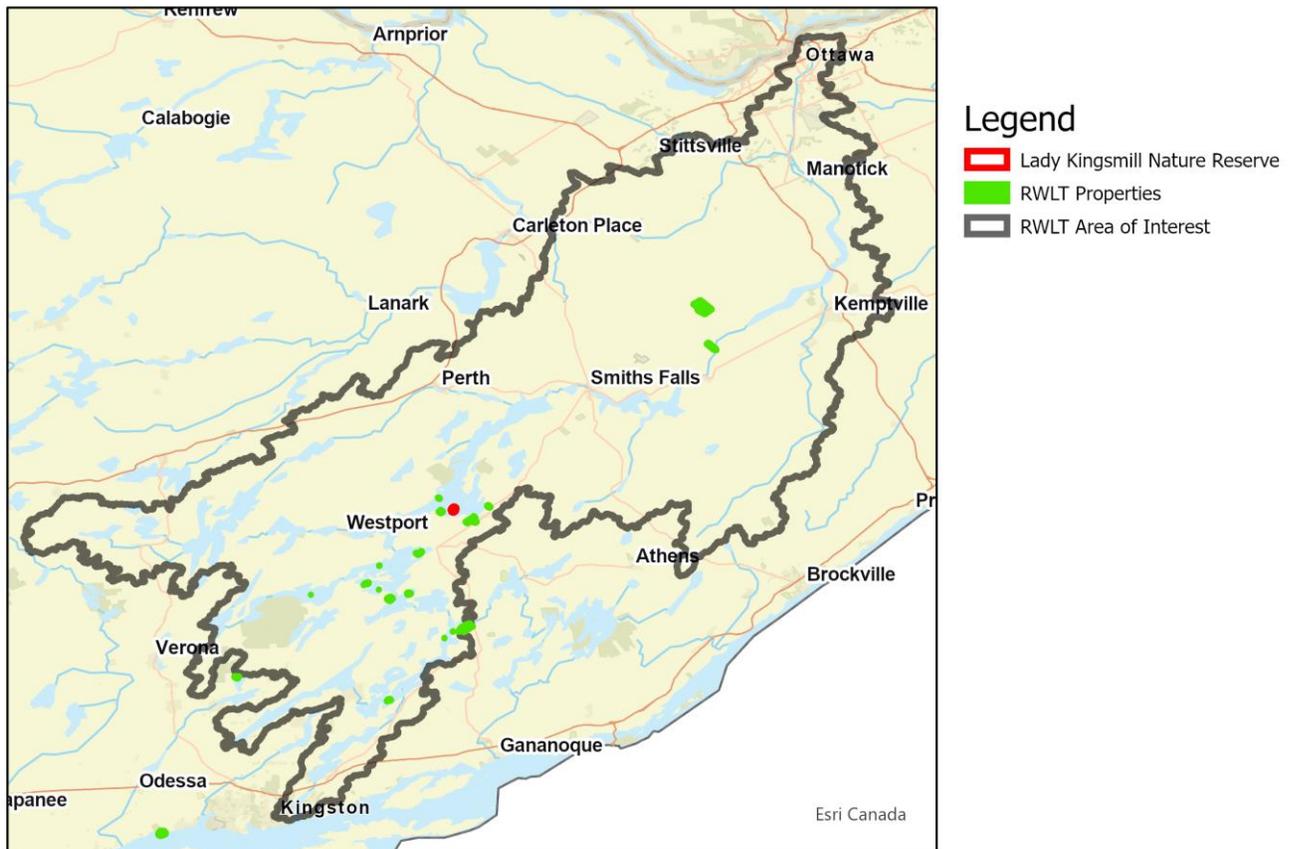


Figure 2: Regional Locator Map of Lady Kingsmill Nature Reserve

2.1.2 Property Area

Lady Kingsmill NR is a 2.41 hectare (5.96 acre) property that makes up half of a larger island called Grindstone Island (~5.17 hectares or 12.78 acres).

2.1.3 Securement Type/ Year

Lady Kingsmill NR was acquired in 2011 as fee simple donation.

2.1.4 Key Local Partners

Key local partners in the management of Lady Kingsmill NR include:

- Neighbour – the neighbour to the Lady Kingsmill NR property who lives on the Southern section of Grindstone Island. She is able to keep an eye on Lady Kingsmill NR as she spends a

considerable amount of time at her own property. Her observations of Lady Kingsmill NR have been recorded in this document and have helped to inform the management plan.

- Parks Canada – in charge of the management of Big Rideau Lake. They helped us to delineate the property's boundary.
- Bob Rae – donated the Lady Kingsmill NR property to the RWLT. He is also a prominent figure throughout Canada as a Canadian Diplomat, public speaker, lawyer, former politician and the current Canadian Ambassador to the United Nations. He has also been awarded a place as the honorary chairman of the RWLT board.

*Note: Contact information for key partners can be found in **Error! Reference source not found.**

2.2 BIODIVERSITY VALUES

Lady Kingsmill NR is home to a wide range of species of flora and fauna. A brief summary can be found below, with further details in Section 5.2: Biological Features, found on page 17.

Species Type	Number of Species
Amphibian	2
Bird	25
Invertebrate	0
Mammal	7
Plant	8
Reptile	1
Tree/Shrub	12

Species of Concern	S Rank (Ontario)	N Rank (Canada)	G Rank (Global)
Northern Map Turtle	S3	N3	G5
American Bullfrog	S4	N5	G5
Great Blue Heron	S4	N5B, N3N, N5M	G5
Trumpeter Swan	S4	N5B, N5N, N5M	G4
American Mink	S4	N5	G5
Andrews' Bottle Gentian	S4	N4, N5	G5
Canada Yew	S4	N5	G5

*Note: A rank of 1 = Critically imperiled, 2 = Imperiled, 3 = Vulnerable, 4 = Apparently Secure, 5 = Secure; B = breeding, N = nonbreeding, M = migrant

2.3 CONSERVATION TARGETS AND THREATS

2.3.1 Conservation Targets/ Overall Viability Assessment

The two conservation targets identified on the property are 1. the forest and 2. the shoreline and adjacent wetlands.

Target	Overall Viability	Explanation
Forest	Good	The forest health was actually very good due to the low number of non-native species (only European Lily-of-the-Valley) and high diversity of species, layer and tree size. The overall viability was only brought down from ‘very good’ to ‘good’ due to the high percentage of trees disease/damage from Gypsy moths.
Shoreline and Adjacent Wetlands	Good	The overall health of wetlands and adjacent shoreline health is good due to the combination of good open water to vegetation ratio (80% vegetation, 20% open water) and low number (2 species) and cover of invasive non-native species (1-15% cover).

2.3.2 Highest Threats

The major threats to these conservation targets are climate change, garbage and solid waste and human disturbance via boating and trespassing.

Target	Two Main Threats	Explanation
Forest	Human disturbance Climate Change	<p>People have been seen trespassing on the property. Trespassing can introduce invasive species and garbage and disturb wildlife. So far only one invasive species (Lily-of-the-Valley) has been found in the forest, although it’s difficult to say whether it was introduced from human trespassing or some other means. Some garbage has also been found throughout the forest.</p> <p>Climate change is likely to affect the forest through species range shifts, strong winds and pests. It can also compound existing threats. As examples, stronger winds may introduce more garbage and species range shifts may allow new invasive species to establish themselves on the island.</p>
Shoreline and Adjacent Wetlands	Human disturbance Climate Change	<p>Trespassing on the property also affects the shoreline and disturbs its vegetation while large waves from boats contribute to shoreline erosion. Shoreline erosion is an obvious issue in the eastern wetland. There are also two invasive species that can be found in the wetland: Water Forget-Me-Not and Canada Thistle.</p> <p>Climate change will likely impact the wetland through increased water temperatures, reduced soil moisture in the fall and species range shifts. Climate change will also likely compound existing issues with invasive species and garbage through warmer water temperatures and stronger winds.</p>

2.4 CONSERVATION MANAGEMENT GOAL AND OBJECTIVES

The RWLT objectives for Lady Kingsmill NR include:

- Preventing some invasive species found in 2021 from spreading beyond the 2021 limits, while eliminating others
- Carefully monitoring the shoreline erosion to make sure the habitat provided by the shoreline and the wetlands is preserved
- Discouraging human activity on the property

2.5 FIVE-YEAR BUDGET SUMMARY

The total cost to implement this management plan is \$13,785 over five years or approximately \$2757 per year. For information and cost estimates related to stewardship beyond the scope of five years, including the plan update for 2026, see section 8.3 which provides a budget for a 25 year period. All cost calculations are based on rates from 2021 and are subject to change.

2.5.1 Urgent Actions

Description		Frequency	Cost
Property Maintenance	Perform tasks as needed to keep property in good condition ecologically and functionally <ul style="list-style-type: none"> • Remove invasive species 	Annually	\$656/year
		Total Over 5 Years	\$3,278

2.5.2 Necessary Actions

Description		Frequency	Cost
Property Taxes and Insurance	Property taxes and insurance <ul style="list-style-type: none"> • Register property under CLTIP CCL • Maintain insurance policy • Pay property taxes if the entire property is not eligible under CLTIP • Liaise with municipalities/MNRF/MPAC 	Annually	\$128/year
Property Signage	Maintain and replace signage as needed, assuming 10 year replacement period	Every 10 years	\$190/10 years
Annual Monitoring	<ul style="list-style-type: none"> • Conduct annual monitoring visit and complete form • Where appropriate, this visit can also include the following: <ul style="list-style-type: none"> ○ Invasive species inventory ○ Long term snake monitoring ○ Record incidental SAR ○ Record all species encountered 	Annually	\$655/year

Bi-Annual Monitoring	Bi-Annual Monitoring (in addition to annual monitoring) <ul style="list-style-type: none"> • Breeding Bird Surveys • Amphibian Surveys • Marsh Monitoring (where possible) • Vernal Pool Surveys 	2021, Every 2 years	\$655/2 years
Reports and Database	<ul style="list-style-type: none"> • Draft any invasive species or SAR reports • Update species database • Plan visits 	Ongoing	\$756/year
Partner Liaison	<ul style="list-style-type: none"> • Keep in contact with Parks Canada and southern neighbour 	Ongoing	\$216/year
		Total Over 5 Years	\$10,513

3 BACKGROUND

3.1 PURPOSE OF THE MANAGEMENT PLAN

The Rideau Waterway Land Trust acquired Lady Kingsmill Nature Reserve in 2011 with the intent that the Land Trust would manage the land to protect its natural features and ensure the proper and continuing conservation of the land.

The majority of the information on Lady Kingsmill NR was retrieved from the narrative appraisal report of the property (Powers, 2011) or from the donation information collected to apply for the Eco Gift program (Lunn, 2011).

The scope of the property management plan for Lady Kingsmill NR is place-based, focusing on the property, the shoreline and the adjacent wetlands. This management plan describes how the organization will manage the property over the next five years.

3.2 RIDEAU WATERWAY LAND TRUST'S CONSERVATION EFFORTS

There are no reports documenting how the RWLT decided to accept Lady Kingsmill NR as a donation; however, it does meet the 2008 land acquisition criteria that the RWLT was using at the time of property's acquisition (RWLT Board of Directors, 2008). First, the size of the property (2.41 hectares) exceeds the minimum suggested size of 0.2 hectares (0.5 acres). The property is also considered to be an important cultural landscape since it is situated within the immediate viewscape of the Rideau Canal, which is recognized as a World Heritage Site and a Canadian Heritage River. The property's interesting history also adds to its cultural value.

The characteristics of Lady Kingsmill NR also align with some of RWLT's new criteria (Fiedler and Spang, 2021), since it has a high likelihood of being developed and it protects wetland habitat. Lady Kingsmill NR's proximity to Portland and to marinas makes it a desirable location for cottagers. Had the RWLT not acquired this property, it likely would have been developed for residential purposes. The RWLT's protection preserves the ecological value of this property as well as the adjacent wetland habitat.

To date, there have been very few stewardship actions on the property, apart from annual monitoring visits. The only exception to this is when the cabin on the property was taken down and removed to decrease public interest in trespassing onto the property (removed in either 2011 or 2012).

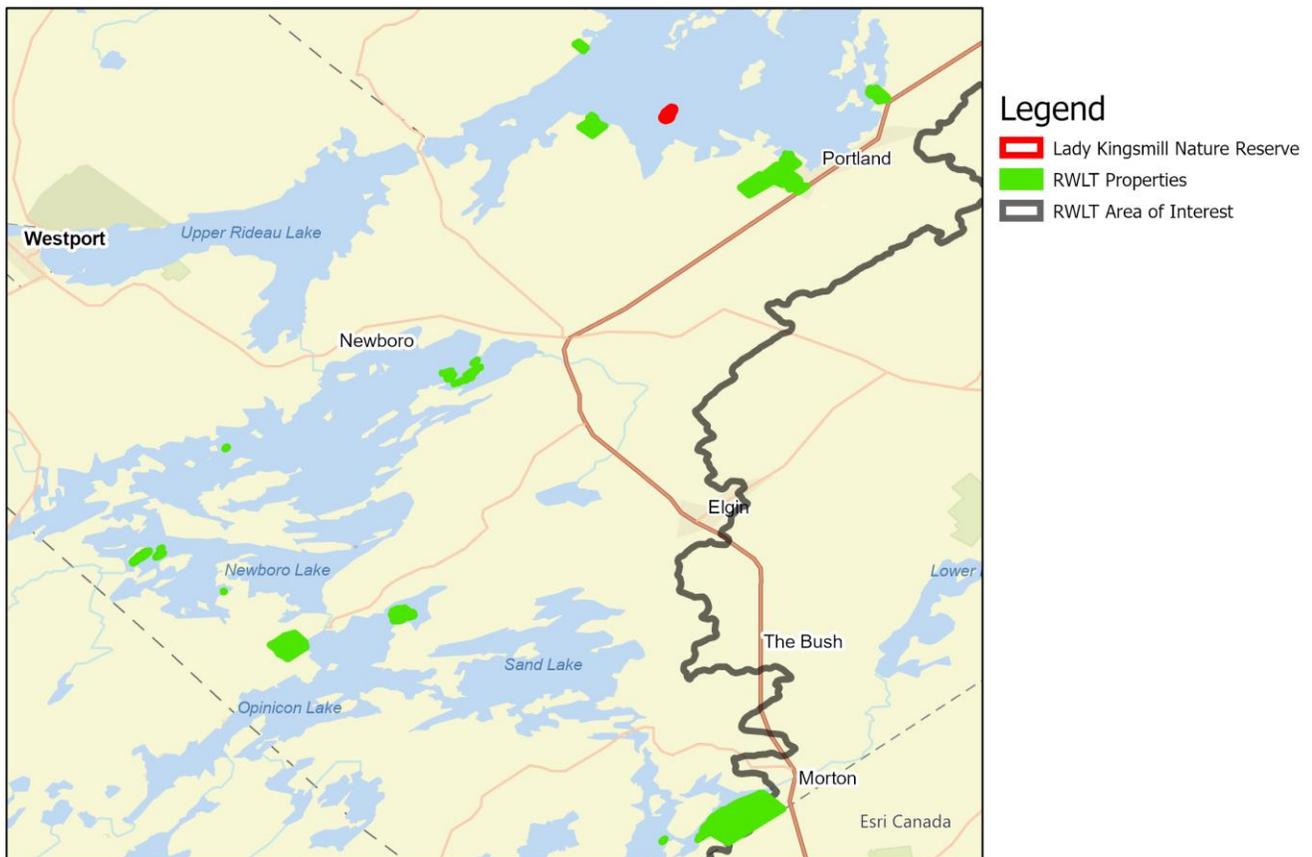


Figure 3: RWLT Properties Concentrated around the Rideau Lakes.

3.3 LADY KINGSMILL NATURE RESERVE VISION AND GOALS

Our vision for Lady Kingsmill Nature Reserve is that its protection and management as a conservation land not only encourages a flourishing forest community but also preserves a naturalized shoreline and wetland habitat for birds, fish and herptiles.

The long-term vision for the property is to steward and maintain the health of conservation targets, reduce or eliminate threats, and support species at risk.

3.4 PROPERTY DESCRIPTION

Table 1: Lady Kingsmill NR Property Specifications

Legal Description	Con 1 PT Lot 18 PT Lot 19 PT Island 24 RP 28R1398
Year Secured	2011
Property Owner	Rideau Waterway Land Trust
Property Manager	Rideau Waterway Land Trust
Nearest Major City Centre	Portland, Ontario
Directions	<p>Take highway 15 to the boat launch at Portland. A boat can be launched here to reach the island. Use a map to navigate to Lady Kingsmill NR (should only take 10 minutes on a motorboat and 45 by canoe approximately). The property will be labelled as Grindstone Island on maps. A slightly closer canoe launch is Peter Hannah's house (current board chair). His house is located at 3614 R36, Portland, Rideau Lakes, ON. Staff are able to park in the extra parking spot in front of his house.</p> <p>Staff may also try requesting access to the water from the residents around:</p> <ul style="list-style-type: none"> - 4214 Murphy Bay Rd property - 5012 Sherwood Rd - 4399 Sherwood Rd
Coordinate Reference	44.712431, -76.231133
Elevation	<p>Lake level: 123-124 m ASL High point of property: 129 m ASL Peak height above lake level: 5-6 m ALL</p>
Surface Area	2.41 hectares (5.96 acres)
Conservation Authority	Rideau Valley Conservation Authority
Watershed	Rideau River
Eco District	Georgian Bay 5E-11
MNRF District	<p>MNRF's Southern Region, Kemptville District. -Address: Unit 1, 10 Campus Drive, Kemptville, ON K0G 1J0 -Phone: 613-258-8204</p>
Assessment Roll Number	08 31 831 051 05201
Property Identification Number	44125-0102 (LT)

3.4.1 Description of Property Perimeter Boundaries

The property is a small section (2.41 hectares) of a larger island (total area ~5.17 hectares), located about 600 m north of Sheldon's Point off the south shore of Big Rideau Lake, near Portland in eastern Ontario (lat, long: 44.712651, -76.231027). The property makes up the northern half of Grindstone Island which is separated from the southern portion by a small naturally vegetated isthmus. The southern portion of Grindstone Island is occupied by an active cottage. The property is further bounded by Plum Island (~2.0 hectares) on its northern flank and surrounded otherwise by the waters of Big Rideau Lake.

3.4.2 Site Designations

Lady Kingsmill NR is not designated as a significant area by the township, provincial, or federal government. The property is identified as part of the Natural Heritage System on Appendix 2 to the Official Plan of the United Counties of Leeds & Grenville.

3.4.3 Agreements (leases, encumbrances, etc.)

Lady Kingsmill NR was donated under the Ecological Gifts Program (EGP). As the recipient of an Ecological Gift (EcoGift ID: ON 478), the RWLT is required to uphold recipient responsibilities under the federal EGP. This includes maintaining current land-use consistent with the original objectives of the Ecological Gift. The penalty for an unauthorized disposition or change in use of an Ecological Gift is a federal tax equal to 50% of the current fair market value of the land (Environment Canada, 2011). The entire property is registered for Conservation Land Tax Incentive Program (CLTIP) as a Community Conservation Land (CCL). The CCL category broadens the range of properties owned by Conservation Authorities or like-minded organizations that are eligible for a property tax reduction. No use that would be detrimental to the natural heritage values of the property is permitted on a property registered under CLTIP (Ontario Ministry of Natural Resources, 2014). RWLT is required to reapply annually for properties registered in this program.

3.4.4 Adjacent Land Use and Cultural Elements

To the south of Lady Kingsmill NR lies the southern portion of Grindstone Island which is currently owned and used as a summer cottage. This section of the island is more developed than Lady Kingsmill NR with many of the trees cleared in the early 1900's. It includes a number of cottages, outbuildings, and other structures. The island north of Lady Kingsmill NR is known as Plum Island and has an existing cottage. This type of use is dominant along the south shore of Big Rideau Lake.

There are four other RWLT properties situated around Big Rideau Lake: Red Rock, Sherwood Bay, Edwards Wetlands and MacDonald's Island Wetland. The closest property is Sherwood Bay which is 1 km south of Lady Kingsmill NR on the mainland. Red Rock and Edwards Wetlands are both about 2.5 km south of Lady Kingsmill NR, although the vast majority of Edwards Wetlands is slightly inland and does not include the shoreline of Big Rideau Lake. The last property on the lake is MacDonald's Island Wetland, which is about 4 km east of Lady Kingsmill NR. All four of these properties are well-forested areas but Red Rock features an open rocky shoreline with an osprey platform, Edwards Wetlands contains a large wetland and MacDonald's borders a shoreline wetland.

4 PROPERTY MANAGEMENT

4.1 HISTORICAL LAND USE

The first known use of Grindstone Island was as a quarry in the mid 1800's. The remnants of this quarry can still be seen on the east side of the Lady Kingsmill NR property today. In 1916, Admiral and Lady

Kingsmill started using the Grindstone Island as their summer home where they hosted a number of noteworthy guests including Sir Robert Borden and Lady Borden, David Niven (actor), the Duke and Duchess of Devonshire and Neville Chamberlain. A number of cabins and lodges were built on the island although the majority of these were built on the lower parcel which is not owned by the RWLT. Only one cabin was built on the parcel owned by the RWLT. This cabin was taken down when the RWLT acquired the property. Now, only the foundation and an outhouse remain. Once both Lady and Admiral Kingsmill had passed, the island was inherited by the Kingsmill children who did not readily use it themselves. Instead, the island was lent to the Quakers, a historic peace church. They formed the Canadian Friends Service and developed a non-profit peace education centre on the island. The island was the centre for a number of peace conferences and non-violence training institutes. In the 1980's the island hosted a summer camp for children. Most of these activities were hosted on the lower section of the island, currently owned by the neighbour, and it is unclear how much of these activities included the use of the property now owned by the RWLT.

4.2 ACQUISITION HISTORY

The property was transferred from Robert Rae to RWLT on December 16, 2011. Mr. Rae originally purchased Lady Kingsmill NR from George Gordon-Lennox in 2001 and then donated the property to the RWLT as an Ecological Gift.

4.3 CURRENT MANAGEMENT

There is no current management plan or active management taking place on the property apart from regular monitoring further described in Section 4.5.

4.4 FUTURE ACQUISITIONS

RWLT intends to maintain ownership of the property for the foreseeable future for conservation. There are currently no future acquisitions planned for the remaining portion of Grindstone Island adjacent to Lady Kingsmill NR or for the nearby lands along the shoreline. RWLT hopes to continue to acquire properties surrounding Big Rideau Lake as opportunities arise.

4.5 STEWARDSHIP

RWLT stewardship is carried out predominantly by the biology staff. These individuals visit the property at least once each year completing a standard monitoring worksheet (Appendix B). Each year, the visit is done during a different season to account for the full variation in flora, fauna and habitat. Winter monitoring will not be an option since boat access is not possible during the winter. Instead monitoring will have to alternate between late spring, mid-summer and early fall. Monitoring staff will report any unwanted and illegal activity to the RWLT board, and the organization decides the actions necessary to address any concerns. On the occasion that staff cannot make it to the property for a given year, board members may also visit the property to provide an update on the property even if it is less in-depth. Instead they may follow the monitoring report template and focus on inspecting for threats like trespassing and other incompatible uses rather than collecting biological information. Additional updates on the property may be provided by the neighbours on the southern section of the island. Maintaining a relationship with

the current and future owners of the adjacent parcel is an important component of stewardship and long-term conservation of this property.

5 BASELINE INVENTORY SUMMARY

A formal baseline documentation report for Lady Kingsmill NR was never completed. However, a fairly detailed description of the property was written during the acquisition of the property for its certification as an Ecological Gift (Lunn, 2011).

5.1 PHYSICAL FEATURES

5.1.1 Geology

Lady Kingsmill NR, along with the rest of Grindstone Island, is underlain by sedimentary rocks of the Metamorphic Series- primarily crystalline limestone and dolomite, with some siliceous limestone and rusty gneiss. A small graphite mineral pit was documented by Natural Resources Canada, which is still visible on the island and occupies approximately 0.05 hectares at the northeastern corner of the island. Evidence of the mineral pit exists today in two rock piles, a small rock face exposure and a large bowl-shaped depression (cut). The property reaches an elevation of over 6 m above lake level at its centre, but is most notable at its northern corner.

5.1.2 Soils

There is no documentation recording the soil type at Lady Kingsmill NR, although the Mississippi-Rideau source protection region reports that the region's soils consist of approximately 2 m of loam. It is likely that there is less than 2 m of soil on Lady Kingsmill NR itself but no official survey has been conducted and this estimate is regional.

5.1.3 Surface Hydrology

As an island in the middle of Big Rideau Lake, the property is part of the Rideau Lakes Sub watershed which is a part of the Rideau Valley Watershed. Big Rideau Lake has a cold-water regime which, is important for improving water quality, maintaining biodiversity in the region and protecting species at risk. The property also lies within an area that is identified as a significant groundwater recharge area. This means that water in the area travels to our groundwater more quickly than in other areas and has more significant impact on groundwater quality.

The highest part of the property is about 6 m above lake level along the eastern coast. The terrain depresses gradually from the point to the western shoreline and depresses more quickly to the eastern shoreline. For the most part, very little water collects on Lady Kingsmill NR and instead runs directly into the lake since there are few depressions on the property. The main exception here is the quarry which may accumulate water in the spring and during heavy rainfalls. There is also a wetland on the southeastern side of Lady Kingsmill NR which is protected by a small patch of land and the water is likely much more stagnant.

5.1.4 Climate

Lady Kingsmill NR falls just within the southeastern boundary of ecoregion 5E-11 (Georgian Bay Ecoregion). The climate for this Ecoregion has been described as cool-temperate and humid. The region is cooler (mean annual temperature range: 2.8 - 6.2°C), more humid and experiences more annual rainfall (mean annual precipitation range: 771 - 1,134 mm) than the lake Simcoe-Rideau Ecoregion (Crins *et al.*, 2009).

5.2 BIOLOGICAL FEATURES

5.2.1 Land Cover

The Lady Kingsmill Nature Reserve was previously listed as 85% forest and 15% wetland (Powers, 2011). However, contact with Craig Cunningham and Shawna Kenny (see Appendix C for contact info) from Parks Canada has verified that the summer waterline marks the boundary between the RWLT property and the lakebed, which is Crownland. Consequently, the wetland does not count as a part of the property. Therefore, the property is approximately 95% forest and 5% shoreline and riparian vegetation.

It is notable that the shoreline surrounding the property is in a natural state. With the exception of the sedge/bulrush (not cattails) dominated marshy inlet, lakebed substrate adjoining the island is a mixture of sand, clay and occasional cobblestone, with scattered native submergent vegetation and very occasional in-water deadfall.

5.2.2 Flora

The forested property is covered primarily by mixed woods, including an overstorey of dominant middle-aged coniferous (white pine, eastern hemlock, white cedar) and hardwood (basswood or linden, several large red oak and red maple) trees with younger specimens of eastern white cedar, white birch, ash, American beech, sugar maple, American elm and ironwood scattered throughout. The tree canopy along the southwestern side of the property is dominated by conifers, especially hemlock. Much of Lady Kingsmill NR is covered with a rather thick and robust understory of ground hemlock or Canada Yew, with dogwood shrubbery found at the southern end of the property, particularly surrounding the marshy bay (Powers, 2011). Previous documentation of the property's vegetation also mentions a small and open treed rocky barren area adjacent to the middle of the property's eastern shoreline, roughly 0.1 hectare in size and a significant but albeit small sedge/bulrush marshy inlet bay approximately 0.3–0.4 hectare in size. However, while there were a couple of small open patches, overall there was no prominent open area as described above. We believe these patches have grown in.

5.2.3 Fauna

Lady Kingsmill NR provides habitat for a range of fauna including 35 avian species, 7 mammalian species, 2 amphibian species and 1 reptilian species (see Appendix A for full list). The mammals observed on the property are almost exclusively from either the Mustelidae family (e.g., minks, otters) or the Rodentia order (e.g., beaver, grey squirrel). The exception to this is that there are also a few deer that inhabit the island. The 2021 targeted surveys detected amphibians and reptiles like the Northern Map Turtle, the Green Frog and the American Bullfrog. The Northern Map Turtle is currently considered a species of "special concern" by the Ontario Government. No other species at risk have been detected on the property.

5.2.4 Invasive Species

Table 2: Invasive Species found at Lady Kingsmill NR

Common Name	Date Observed	Description
Water Forget-Me-Not	June 17 th 2021	Observed by RWLT staff at the edge of the eastern wetland
European Lily-of-the-Valley	June 17 th 2021	Observed by RWLT staff near the foundation of the old cabin
Canada Thistle.	June 17 th 2021	Observed by RWLT staff along the shoreline of the eastern wetland
Gypsy Moths	June 17 th 2021	Observed by RWLT staff throughout the entire property as they are present throughout most of southern Ontario

5.3 CONSERVATION CONTEXT

Lady Kingsmill Nature Reserve is one of the few undeveloped properties on Big Rideau Lake. Consequently, it is one of the few locations on the lake that features naturalized shoreline and undisturbed forest which is very important for flora and fauna in the area. Big Rideau Lake is a cold-water lake which is important for improving water quality, contributing to the maintenance of biodiversity in the region and helping protect species at risk. The RWLT is legally obliged to ensure the conservation of this property since it was donated under the Ecological Gifts Program.

5.3.1 Protected Areas and Environmental Designations

Except as noted in section 5.3.2 of this PMP, Lady Kingsmill Nature Reserve does not include any lands with an official environmental designation nor does include any lands that have been designated protected areas by any organization other than the RWLT. Along Big Rideau Lake there are a number of other protected lands most of which are other properties owned by the RWLT (see Figure 4). These properties include Red Rock, Sherwood Bay, Edwards Wetlands and MacDonald's Island Wetland. There is also a considerable amount of Provincially Significant Wetland (PSW) that starts in Portland, not too far from the Edwards property, and continues throughout most of the eastern coast of Big Rideau Lake. Additional PSWs can be found on the mainland along the northwest coast. A provincial park, called Murphy's Point is also located on the mainland directly north of Lady Kingsmill NR. Finally, the Rideau Valley Conservation Area owns a conservation land located along Highway 15 northwest of Portland called Portland Bay Conservation Area.

5.3.2 Policy Areas

5.3.2.1 Official Plan of the United Counties of Leeds and Grenville

According to the Official plan of the United Counties of Leeds and Grenville, Lady Kingsmill Nature Reserve has been designated a rural land. Most of the mainland along Big Rideau lake has been designated

rural lands, with the exception of some inland agricultural land to the west, a rural settlement area to the south (Portland) and scattered provincially significant wetland to the east.

Section 4.2.12, Crown Lands, Conservation Lands and Significant Local Features, contains general policies applicable throughout the United Counties, including a statement encouraging the activities of land trusts.

The Official Plan of the United Counties of Leeds & Grenville contains two additional sections relevant to this property, one of which is very supportive of land trust activities: Schedule D identifies an abandoned mine using a triangular symbol, reflecting the presence of a small abandoned quarry. Section 5.3.3 discourages development near these types of sites.

Appendix 2 identifies the land as part of the County's Natural Heritage System. Section 4.3(k) encourages the "creation of a linked Natural Heritage System through the integration" of various publicly owned lands and (ii) "areas in the ownership of land trusts."

5.3.2.2 Official Plan of the Township of Rideau Lakes

The Lady Kingsmill Nature Reserve is located within the Township of Rideau Lakes. Prior to municipal amalgamation in 1998 it was located in the Township of Bastard and South Burgess.

The Official Plan of the Township of Rideau Lakes was adopted by Council on October 20, 2003 and approved by the Ministry on April 2, 2004. The subject land is designated Rural. The policies applicable to this designation are contained in section 3.7. Section 3.7.2 lists the permitted uses including conservation.

Section 2 of the official plan contains General Development policies applicable to the entire Township. Section 2.12, Crown and Conservation Lands, acknowledges that some conservation lands are owned or managed by non-profit organizations. These are permitted anywhere in the Township.

5.3.2.3 Zoning By-law #2005-6

Schedule A3 of the Township of Rideau Lakes Zoning By-law zones the subject land as waterfront Residential RW, reflecting its existing use at the time the By-law was passed. When an opportunity arises in the future to provide input into a new comprehensive zoning by-law, it may be appropriate to place the land in a category which limits the permitted uses to just a conservation use.

5.3.2.4 Others

The property also lies within the Rideau Valley Conservation Area although they have not publicly released any land designation information related to Lady Kingsmill NR.

Boaters on Big Rideau Lake must observe the speed limit of 10km/h within 30m of shore as dictated by the Vessel Operation Restriction Regulations (VORRs).

5.4 LANDSCAPE CONTEXT

The island is located on the southwestern portion of Big Rideau Lake. The area faces development pressures since it is a popular area for cottages. The area is also subject to high boat traffic since Big Rideau Lake is a segment of the Rideau Canal.

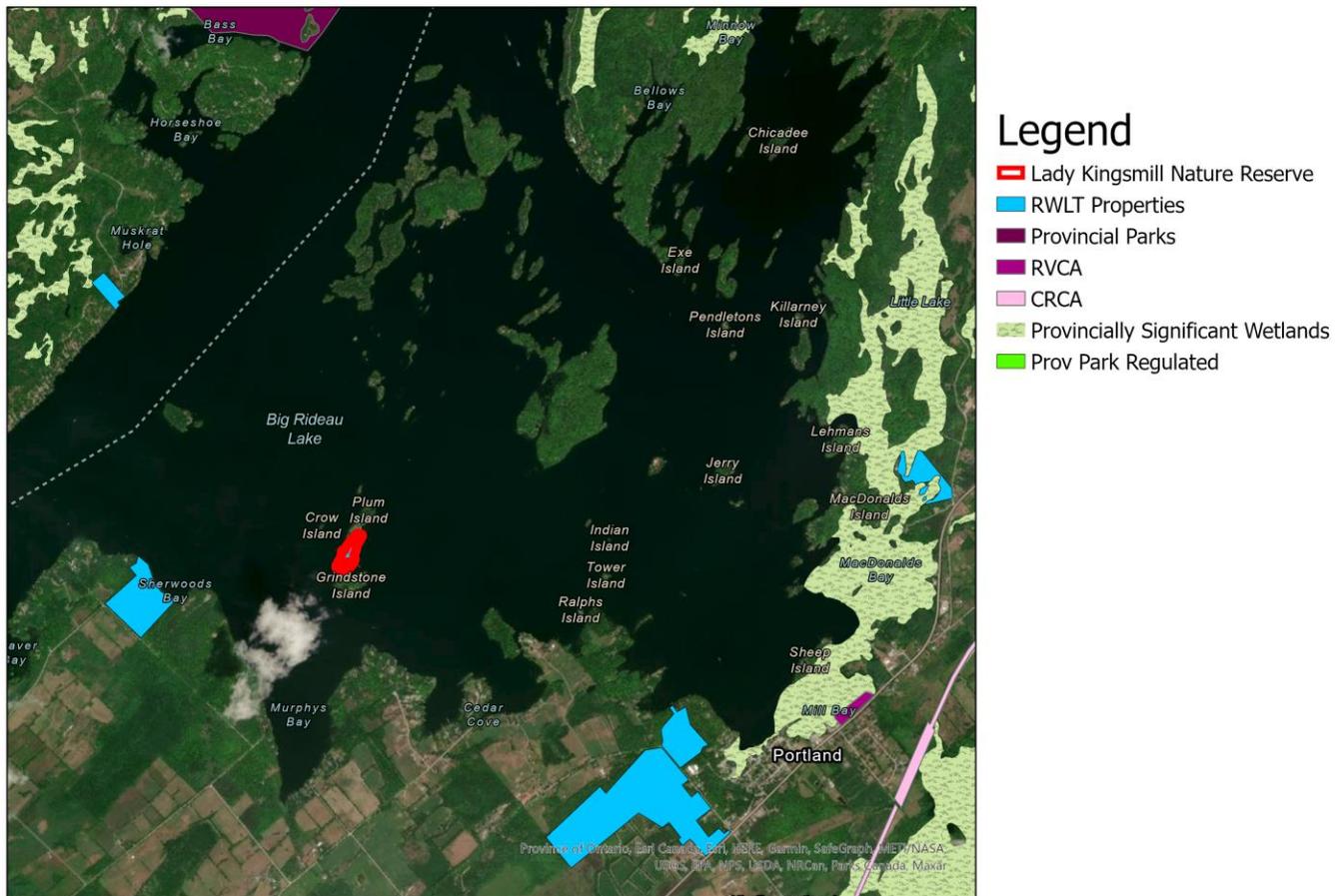


Figure 4: Protected Lands and Provincially Significant Areas surrounding Lady Kingsmill Nature Reserve

6 CONSERVATION TARGET ANALYSIS (CONSERVATION TARGETS, KEA, INDICATORS)

The RWLT staff have worked collaboratively with the staff at the Ontario Land Trust Alliance (OLTA) to identify two main conservation targets on Lady Kingsmill Nature Reserve. The two identified conservation targets are the forests and the shoreline including the adjacent wetlands. Each of these conservation priorities is described below with a particular focus on their ecological significance. General assessment criteria are identified, and a rating assigned where possible.

6.1 FORESTS

The section of the PMP pertains to all forested areas lying within the Lady Kingsmill NR property boundary.

6.1.1 Ecosystem Description

The forest conservation target includes all sections of forest within the property boundary, which comprises 95% forest. The majority of the forest on the property is a mix of deciduous and coniferous trees. While both types are present across Lady Kingsmill NR, in general, the western side of the property is dominated mainly by middle-aged conifers like white pine, eastern hemlock, white cedar trees and the eastern side features more deciduous trees like red oaks, basswoods and maples. Much of Lady Kingsmill NR is covered with a rather thick and robust understory of ground hemlock or Canada Yew, with dogwood shrubbery found at the southern end of the property, particularly surrounding the marshy bay. The northern portion of Lady Kingsmill NR in particular is dominated by shrubs and with only a few mature trees occupying a canopy. The understory scattered throughout the property includes younger specimens of eastern white cedar, white birch, ash, American beech, sugar maple, American elm and ironwood scattered. Table 3 identifies vegetation communities found at specific survey points on the property. A full list of the plant species found on the island can be found in Appendix A.

Table 3: Vegetation communities at 4 survey points. These surveys were taken in 2020 from 4 well dispersed survey points. The accompanying map locating the survey points can be found on the land trust's ArcGIS online account.

Survey Point ID	Latitude, longitude	Habitat Characteristics	Vegetation of Canopy	Vegetation Sub-Canopy	Vegetation of understory	Vegetation of floor
Kingsmill survey_1	44.7117983, -76.2317031	edge of closed-canopy forest and wetland. wetland: cattails	red maple, basswood, white birch	hemlock	dogwood, white cedar	juniper, ferns, tall sharp grasses
Kingsmill survey_2	44.712956, -76.230892	partly open canopy, mature mixed forest	red oak, white pine, white cedar, white birch	basswood	red cedar, sumac	sapling hemlock, Canadian yew
Kingsmill survey_3	44.713776, -76.230132	open canopy, shrub area with some mature trees	white cedar, hemlock, dying basswood	NA	dogwood	NA
Kingsmill survey_4	44.7120827, -76.231115	open canopy, edge of wetland and mixed forest	Hemlock, basswood,	NA	dogwoods, grapevine	grasses, cattails

6.1.2 Biodiversity

During the 2021 monitoring visit, the forest diversity was assessed by looking at three components: size diversity, layer diversity and species diversity (see table 4 of assessment results or Appendix E for data informing assessment). All three components were given a rating of 'good' according to the evaluation protocol (see Appendix C) (Project Learning Tree, 2012). There were only three rating levels in this evaluation protocol (poor, fair and good), while the rest of the features in this PMP are rated on four levels (poor, fair, good and very good). In this case the diversity rating for the forest should be considered very good. The forest diversity surveys along with the disease surveys were conducted according to the protocol

outlined in “Monitoring Forest Health” by Project Learning Tree. Note that there were many more diseases listed on the form but only the damage/disease found on the trees are listed in Appendix E (Project Learning Tree, 2012).

A number of bird species have been recorded on the property. During the monitoring visit in 2021 we found some of the following species throughout the forest on the property: Common Grackle, Northern Flicker, Black-capped Chickadee, Crow, Red-winged Blackbird, Swamp sparrow, Song Sparrow, Eastern Kingbird, and Eastern Phoebe. In 2020 we also observed the Barred Owl, Great Crested Flycatcher, Red-eyed Vireo and the White and Black Warbler. As for mammalian species, deer and squirrels are regular inhabitants on the island. Fishers have also been reported on the island in the past, but have not been sighted in a number of years (see Appendix A for full list of species).

6.1.3 Assessment

Table 4: Summary of the forest’s health and composition - focus its diversity, the presence of disease and damage and the presence of non-native species.

Type	Key Attribute	Indicator	Ranking	Notes
Condition	Community Composition	Non-native Species Richness	Very good	Three non-native species have been identified on the property and they not very widespread, although they are considered invasive. Data for the species present was taken from the 2020 monitoring report.
Condition	Community Health	Diversity	Very good	All 3 survey points were given a rating of 3 (good) for layer, species, and size diversity. The full table with the data for the assessment of each diversity type can be found in Appendix E.
Condition	Community Health	Percentage of trees with disease or damage	Fair	The very high percentage of trees with damage/disease is a direct result of the of Gypsy moth outbreak this year. The Gypsy moths are causing extreme defoliation throughout southern Ontario. Otherwise there are very few trees with damage or disease and community health would be rated “good” overall. The data from the disease/damage assessment can be found in Appendix E.
Overall Ranking			Good	

6.2 SHORELINE AND ADJACENT WETLANDS

This conservation target refers to the entire shoreline that outlines the perimeter of the property, including all land within 3 metres of the boundary, as well as the adjacent wetland surrounding the property. There are two wetland areas at the southern end of the property on either side of the isthmus. Neither of these

wetlands are actually situated within the boundaries of the property since the property ends where the water begins; however, the island and how it's managed has a significant effect on the wetlands. Arguably, one of the main values of the property is that it protects and prevents the development of the shoreline on a largely well-developed lake.

6.2.1 Ecosystem Description

The shoreline of the property is predominantly made up of small and large stones. The rocky perimeter occupies approximately a 1-3 metre belt around the property before the inland terrestrial vegetation begins.

The wetland on the eastern side of the property is situated in a cove protected by an arm of land that extends south off the island. This arm of land likely provides significant protection from turbulent water and has allowed vegetation to grow in. This wetland is 70% vegetation and 30% open water. Two non-native species were spotted in the wetland: Water Forget-Me-Not and Canada Thistle.

The wetland on the western side is less enclosed and is less vegetated. This wetland feature is 80% open water and 20% vegetation.

6.2.2 Biodiversity

Bird species found in wetlands in 2021 include the Great Blue Heron, Red-eyed Vireo, Eastern Kingbird, Northern Flicker, Pileated Woodpecker, Common Grackle, Song Sparrow, Common Loon, American Robin, Great Blue Heron, Trumpeter Swan, Black-capped Chickadee and Mourning Dove.

Amphibian species on the property include the Green Frog and the American Bullfrog. As for reptiles, we found a Northern Map Turtle (see Appendix A for specific location). Mammalian sighting in the wetlands and along the shoreline include mink, otter, muskrat and beavers. These mammalian species have all been reported by the neighbour.

6.2.3 Assessment

Table 5: Assessment of the habitat diversity and species composition in the Wetlands.

Type	Key Attribute	Indicator	Ranking	Notes
Eastern Wetland				
Condition	Habitat Diversity	Open water to vegetation ratio	Good	70% open water, 30% vegetation
Condition	Species Composition	Non-Native Species Richness	Very good	None
Condition	Species Composition	Relative Cover of Non-native Species	Very good	0%
Western Wetland				
	Habitat Diversity	Open water to vegetation ratio	Good	80% vegetation, 20 % open water

Condition	Species Composition	Non-Native Species Richness	Very good	Only two species found (>5 species)
Condition	Species Composition	Relative Cover of Non-native Species	Good	1-15% cover of the vegetation
Overall Ranking of both Wetlands			Good	

7 THREATS

7.1 HUMAN INTRUSIONS & DISTURBANCES

7.1.1 Recreational Activities - Boating

Big Rideau Lake experiences a considerable amount of boat traffic since, being a segment of the Rideau Canal, it is a popular lake for cottagers and also for tourists. One of the major drawbacks to the high boating activity is that it can cause soil erosion at the shoreline. Soil erosion has been identified as an issue on the island by the neighbours. Additionally, the noise from the motors of the boats can disturb the sensitive ecosystems along the shoreline and in the wetlands. To mitigate the effects of motorboats on the shorelines and their habitats, a speed limit has been put in place to mandate that boats should not make a wake within 30 m of the shoreline. Unfortunately, the neighbour on the southern half of the island has reported that many boaters do not observe that law and often drive fast and close to the shoreline along Lady Kingsmill NR. The major issue is with large cruisers and wakeboard boats which purposefully create large wakes. The neighbour explained that this is typically happening along the west side of the island.

7.1.2 Recreational Activities - Trespassing

The neighbours reported trespassers visiting the island more frequently in recent years. The trespassers are usually casual boaters or fishers who come ashore to picnic or explore the island. The neighbour has spoken to the people trespassing on the islands and has also discussed the issue of trespassing with the owner of a particularly popular Airbnb in the area. The owner of the Airbnb has stressed to their visitors that the islands in the area are private.

It is important to minimize trespassing on the property since it could have a variety of consequences including dumping, introducing invasive species, disturbing wildlife and disturbing the shoreline. Invasive species in particular can be a major threat to ecosystems since they often outcompete native species which can result in a decrease in biodiversity in a given area. Luckily at this point, only three invasive species have been documented on the island.

7.2 GARBAGE AND SOLID WASTE

Garbage has accumulated on Lady Kingsmill NR from trespassers visiting the property and from regularly washing ashore from the lake. The trash usually includes bottles, cans and plastic garbage. There is also a large tire embedded in the ground along the east shore that would take significant effort to remove. For the most part, it seems that the garbage remains localized along the shoreline and does not continue far inland.

7.3 INVASIVE NON-NATIVE/ALIEN PLANTS AND ANIMALS

Invasive species can outcompete native species which can result in a decrease in biodiversity in a given area. There are currently three known non-native species present on the island: Canada Thistle, Water Forget-Me-Not and European Lily-of-the-Valley. All three of these non-native plants are considered invasive in Ontario. Luckily the three species do not seem to be very wide-spread throughout the island and could likely be eliminated by manual pulling. There is a good chance that invasive and other non-native species will continue to be an issue on the property since they species can be introduced from garbage washing ashore and trespassers visiting the island. Invasive species may also be introduced to the island through other more natural methods of transport like through wind or on animals.

7.4 CLIMATE CHANGE

After completing a climate change vulnerability assessment, we identified that climate change would introduce new stresses on the conservation targets as well as compound the threats listed above.

7.4.1 Climate Change Threats to the Forest

The island's forest would likely be affected by climate change via strong winds, species range shifts and increased pests and diseases. Strong winds are hard on trees since they cause trees to pull and sway, which stretches their roots. This movement can disrupt contact between roots and the surrounding soil resulting in a decrease in water absorption and cause severe water stress in trees. Wind has the potential to decrease leaf biomass and even eliminate forest layers (i.e. canopy, sub-canopy, understory and floor). Climate change will include a change in temperature regime. As the temperature increases, many species ranges will shift north, and there will likely be a corresponding increase in pests and diseases. New species often outcompete native species that may already be struggling with an introduced disease.

7.4.2 Climate Change Threats to the Shoreline and Wetlands

The property's shoreline and wetlands would likely be affected by climate change through increased water temperature, reduced soil moisture in the fall and species range shifts. Lakes in the area are experiencing warmer temperatures each year. The increase in water temperature has been shown to increase algal blooms, cyanobacteria and other toxins which in turn decreases the light reaching aquatic plants. Each of these factors alone can stress native plants and make it difficult for them to grow while enabling non-native and invasive plants to thrive. The culmination of changing all these factors would cause significant effects on the native aquatic ecosystem. The Big Rideau Lake area has also been projected to experience

more intense droughts throughout the summer. One of the major consequences of this is that the soils on the island would be much drier than usual and the upland wetland vegetation may not persist.

7.4.3 Climate Change Compounding Existing Threats

There are several climate change related factors that compound existing threats:

- increased strong winds in the area
- shifting species ranges
- increased pests and diseases
- changes in precipitation patterns and
- an increase in water temperature.

Strong winds can act as vectors for non-native species. Consequently, an increase in the frequency and intensity of strong winds will likely result in an increase of non-native and invasive species to the island. Strong winds can also cause stress to the native species and create disturbances where non-native species would have an opportunity to establish themselves. Strong winds may also bring more trash to the island property.

Shifting species ranges may introduce non-native species. Corresponding increases in pests and diseases will further threaten native species.

A change in the soil moisture regime, resulting from changes in precipitation patterns, would also likely facilitate the persistence of non-natives and their ability to thrive along the shoreline, since a change in soil moisture acts as a stress to native species.

An increase in water temperature will also likely increase recreational activity on the lake. Warmer water often attracts more boaters to the lake, eager to enjoy the comfortable temperature of the water. It will also extend the length of the boating season. With the water warming up sooner in the spring and cooling off later in the fall, boaters will likely push the season as long as they can. The consequence of this is that shorelines are exposed to wakes from boating traffic for a longer time, potentially increasing shoreline erosion.

8 MANAGEMENT GOAL, OBJECTIVES AND ACTIONS

8.1 MANAGEMENT GOAL

RWLT's goal for Lady Kingsmill Nature Reserve is to preserve its ecological integrity through stewardship and management. Lady Kingsmill NR is one of the few properties on Big Rideau Lake that has not been developed as a residential area and is protected from this development in the future. The RWLT aims to continue to preserve the forest and adjacent wetland of the island as it provides habitat for many species in the area. This becomes vitally important as the rest of the area inevitably becomes increasingly developed and experiences higher boating traffic.

8.2 STEWARDSHIP ACTIONS

Table 6: Planned Stewardship Actions - the actions laid out to continue effective management of Lady Kingsmill Nature Reserve. These actions were compiled based on the Conservation Actions Classification (V2.0) created by the Conservation Measures Partnership (Stewart et al., 2020). The priority of the actions has been indicated with colour, where red represent high priority, orange represents medium priority and yellow represents low priority.

Action Category	Description	Target(s)	Threat(s)	Measure of Success	Frequency
Land/water Management	Monitor property boundaries for evidence of trespass, threats, risks and liabilities	Forest and Shoreline/ Wetland	All threats listed in section 6	<ul style="list-style-type: none"> i) Annual monitoring visits to check property. This includes monitoring the property boundary, changes to the land, evidence of trespassing, SAR, invasive species and other threats. ii) Complete monitoring forms and store species lists in the species list database. Any issues and threats will be addressed. 	Annually
Land/water Management	Monitor property for invasive species	Forest and Shoreline/ Wetland	Invasive species	<ul style="list-style-type: none"> i) Conduct property inventories to document location and extent of invasive species on the property and develop an action plan. ii) Action plan will mitigate impacts of invasive species. Will help to expand understanding of the scope and severity of threat. 	Annually
Land/water Management	Monitor the severity of soil erosion	Shoreline	Soil Erosion	<ul style="list-style-type: none"> i) Measure soil erosion along the shoreline to track the severity of the issue and its progression 	every 2 years
Land/water Management	Enforce no-wake zone/boat speed limit	Shoreline and adjacent Wetland	Soil erosion and disturbing the wetland habitat	<ul style="list-style-type: none"> i) If soil erosion continues to get worse, consider contacting Parks Canada to request that a no-wake zone sign be installed around Lady Kingsmill NR 	Installation – if erosion continues severely. Monitoring - annually
Species	Maintain and update species list for the property	Forest and Shoreline/ Wetland	All threats listed in section 6	<ul style="list-style-type: none"> i) Annual monitoring visits should document all species identified on the property and in the adjacent wetland ii) Update Species list and other relevant databases (GIS) iii) Report SAR/tracked species to NHIC 	Annually
Species	Breeding Bird Surveys	Forest and Shoreline/ Wetland	All threats listed in section 6	<ul style="list-style-type: none"> i) Undertake breeding bird survey and/or targeted SAR bird survey. ii) Establish sites for personnel to undertake BBS iii) Update database with new records. iv) Report SAR/tracked species to NHIC. v) Data will help inform management plans, stewardship actions, priorities. 	2021, Every 2 years
Species	Amphibian Surveys	Shoreline/ Adjacent Wetland	All threats listed in section 6	<ul style="list-style-type: none"> i) Undertake approved survey for amphibians ii) Establish a survey site in each inlet wetland iii) Update database with new records. iv) SAR/tracked species reported to NHIC. v) Data will help inform management plans, stewardship actions, priorities. 	2021, Every 2 years
Raise Awareness	Install and maintain signage on property	Forest & Shoreline	Trespassing, dumping	<ul style="list-style-type: none"> i) Install several signs along the shoreline indicating that it's private property. The property currently has no signs on it. 	Installation – 2021

			and invasive species	<p>Communicate with local tourist organizations to stress the islands are private.</p> <p>ii) Continue to conduct annual monitoring to ensure signs are still in place.</p> <p>iii) Continue to stay in contact with neighbours to get updates on trespassing</p>	Monitoring - Annually
Education and Training	Train staff	All	All	<p>i) Provide personnel with specific knowledge and skills in species ID and survey protocols</p> <p>ii) Train personnel so they are better able to undertake actions.</p>	Ongoing
Institutional Development	Secure funding for permanent and seasonal staff	All	All	<p>i) Identify funding sources and positions</p> <p>ii) Secure funding, increase capacity</p>	Ongoing
Institutional Development	Establish volunteer community	All	All	<p>i) Train volunteers to undertake annual monitoring and where relevant additional targeted surveys.</p> <p>ii) RWLT grows current volunteer pool and increases engagement with those volunteers.</p>	Ongoing
Institutional	Establish alliances/partnerships	All	All	<p>i) Form/maintain partnerships with organizations with shared priorities (Parks Canada, RVCA)</p> <p>ii) Coordinated conservation – data is shared.</p>	Ongoing
Institutional	Secure financial support for conservation activities	All	All	<p>i) Identify funding sources and apply where appropriate</p> <p>ii) Secured funds support stewardship actions</p>	Ongoing
Property Taxes and Insurance	Minimize property taxes on nature reserves through CLTIP	All		<p>i) Apply for CLTIP CCL and maintain insurance policy</p> <p>ii) All tasks completed annually</p>	Annually

8.3 STEWARDSHIP COST SUMMARY

Table 7: Cost breakdown to implement management actions

For full stewardship budget breakdown, see **Error! Reference source not found.** Note that the finances in this section are based on 2021 unit costs.

Action	Cost	Frequency
Property taxes and insurance <ul style="list-style-type: none"> Register property under CLTIP CCL Maintain insurance policy Pay property taxes if the entire property is not eligible under CLTIP 	Insurance Cost: \$20 Property Taxes: \$0 Staff Time: \$108 Total = \$128	Annually
Signage Replacement <ul style="list-style-type: none"> Identification Sign No Trespassing Signage *Estimated lifespan of signs = 10 years	Cost of Signage: \$100 Labourer Time: \$90 Travel: with another trip Total = \$190	2031, Every 10 years
Annual Monitoring: <ul style="list-style-type: none"> Conduct annual monitoring visit and complete form Where appropriate, this visit can also include the following: <ul style="list-style-type: none"> Invasive species inventory Record incidental SAR Record all species encountered Trail monitoring Update database with new information 	Biologist Time: \$378 Assistant Time: \$210 Travel: \$67 Total = \$655	Annually
Bi-Annual Monitoring (in addition to annual monitoring) <ul style="list-style-type: none"> Breeding Bird Surveys Amphibian Surveys 	Biologist Time: \$378 Assistant Time: \$210 Travel: \$67 Total = \$655	Every 2 years
Planning and Database Update <ul style="list-style-type: none"> Plan monitoring visits Write reports Report SAR to NHIC Update species database 	Biologist Time: \$756 Total = \$756	Annually
Yearly maintenance May include the following as needed: <ul style="list-style-type: none"> Removal of invasive species Removal of hunting blinds/other unauthorized construction 	Biologist Time: \$378 Labourer Time: \$210 Travel: \$67 Total: \$655	Annually, as needed
Partner Liaison <ul style="list-style-type: none"> Maintain partnerships with Parks Canada, Lady Kingsmill NR neighbour 	Staff Time: \$216 Total = \$216	Annually
Plan Update <ul style="list-style-type: none"> 2 site visits in addition to annual monitoring (to see property in 3 seasons) Estimated 5 days of revising PMP and getting approved 	Biologist Time: \$2646 Assistant Time: \$420 Travel: \$135 Total = \$3201	2026, Every 5 years

9 MANAGEMENT PLAN REVIEW

Every 5 years – starting June 2026.

10 REFERENCES

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11 APPENDICES

11.1 APPENDIX B: MONITORING REPORT TEMPLATE



Property Monitoring Report Form
 Please complete this form and include any supporting illustrations, maps or photos in the appropriate section. Please email the completed form to lands@rwlt.org or give directly to RWLT Ecologist.

Community Land or Conservation Land (circle one)				
Property:		Date of Visit:		
Name(s) of Monitor(s):		Contact Information:		
Report Completed By:				
Date of Last Monitoring Visit:				
Management Plan Reviewed:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Follow-up Required?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
If yes, please describe:				
Management Action Taken:	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
If yes, please describe:				
I - Hazards				
Bears	<input type="checkbox"/>	Tree Snags	<input type="checkbox"/>	Old Wells <input type="checkbox"/>
Poison Ivy	<input type="checkbox"/>	Other	<input type="checkbox"/>	
Describe:				
II - Existing Structures (buildings, signs, footbridges, fences, etc.)				

Structure	Location	Condition	Comments

III - Recreational Uses (Please check off those activities observed and whether they are either allowed (A) or prohibited (P)).

	A	P		A	P		A	P
Formal Trails	<input type="checkbox"/>	<input type="checkbox"/>	Picnicking	<input type="checkbox"/>	<input type="checkbox"/>	Skating	<input type="checkbox"/>	<input type="checkbox"/>
Informal Trails	<input type="checkbox"/>	<input type="checkbox"/>	Swimming	<input type="checkbox"/>	<input type="checkbox"/>	Snowmobiling	<input type="checkbox"/>	<input type="checkbox"/>
Hiking	<input type="checkbox"/>	<input type="checkbox"/>	Camping	<input type="checkbox"/>	<input type="checkbox"/>	Snowshoeing	<input type="checkbox"/>	<input type="checkbox"/>
Berry Picking	<input type="checkbox"/>	<input type="checkbox"/>	Boating	<input type="checkbox"/>	<input type="checkbox"/>	Trapping	<input type="checkbox"/>	<input type="checkbox"/>
Nature Appreciation	<input type="checkbox"/>	<input type="checkbox"/>	Cycling	<input type="checkbox"/>	<input type="checkbox"/>	Dog walking	<input type="checkbox"/>	<input type="checkbox"/>
Bird Watching	<input type="checkbox"/>	<input type="checkbox"/>	Rock Climbing	<input type="checkbox"/>	<input type="checkbox"/>	Equestrian use	<input type="checkbox"/>	<input type="checkbox"/>
Photography	<input type="checkbox"/>	<input type="checkbox"/>	X-country Skiing	<input type="checkbox"/>	<input type="checkbox"/>	Angling	<input type="checkbox"/>	<input type="checkbox"/>
Hunting	<input type="checkbox"/>	<input type="checkbox"/>	Bus tours	<input type="checkbox"/>	<input type="checkbox"/>	Motorized vehicles	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>						

Describe:

IV - Natural Heritage Values

a) Wildlife Observations (mammals, amphibians, reptiles, fish, birds, other):

b) Vegetation (trees, shrubs, plants):

c) Habitat Features (examples: snags/cavity trees, fallen trees, conifer thickets, brush piles, waterfowl nesting, waterfowl feeding, dens, nests, wildlife trails, etc.):

V - Disturbances

a) Natural

- | | | | | | |
|-------------|--------------------------|---------------------|--------------------------|-----------|--------------------------|
| Beaver Dams | <input type="checkbox"/> | Erosion | <input type="checkbox"/> | Fire | <input type="checkbox"/> |
| Flooding | <input type="checkbox"/> | Heavy deer browsing | <input type="checkbox"/> | Siltation | <input type="checkbox"/> |
| Wind falls | <input type="checkbox"/> | Invasive species | <input type="checkbox"/> | Other | <input type="checkbox"/> |

Describe:

b) Human

- | | | | | | |
|------------------------------|--------------------------|--------------------|--------------------------|---------------------------|--------------------------|
| Camping | <input type="checkbox"/> | Pesticides | <input type="checkbox"/> | Road widening | <input type="checkbox"/> |
| Channelization of Streams | <input type="checkbox"/> | Horseback riding | <input type="checkbox"/> | Shoreline alteration | <input type="checkbox"/> |
| Clearing of municipal drains | <input type="checkbox"/> | Motorized vehicles | <input type="checkbox"/> | Stray animals | <input type="checkbox"/> |
| Ditching | <input type="checkbox"/> | Mountain bikes | <input type="checkbox"/> | Trampling | <input type="checkbox"/> |
| Dumping | <input type="checkbox"/> | Pets | <input type="checkbox"/> | Trapping | <input type="checkbox"/> |
| Feeding wildlife | <input type="checkbox"/> | Plant harvesting | <input type="checkbox"/> | Trespass | <input type="checkbox"/> |
| Fires | <input type="checkbox"/> | Poaching | <input type="checkbox"/> | Unauthorized construction | <input type="checkbox"/> |
| Urban runoff | <input type="checkbox"/> | Utility corridors | <input type="checkbox"/> | Vandalism | <input type="checkbox"/> |
| Other | <input type="checkbox"/> | | | | |

Describe:

VI - Contact with Neighbours or Visitors (briefly describe your conversation, provides names if possible):

VII - Notes/Comments:

VIII – Maps, Illustrations, Photographs

11.2 APPENDIX D: MONITORING FOREST HEALTH PROTOCOL FORMS DEVELOPED BY PROJECT LEARNING TREE

Forest Health Indicator: Tree and Crown Condition

Name(s): _____
 Location: _____
 Date: _____

Damage to trees from disease, weather, and activity by animals, insects, and humans can affect overall forest health. Several of these signs are included in the chart below.

Materials

Paper, pencils, chalk

Method

Count all the trees in the plot, marking the trees with colored chalk to help you keep track. Note trees that have one or more signs of disease or damage (see below). To count it as diseased or damaged, 10 percent or more of the tree should be affected. Calculate the percentage of all trees in the plot that have such signs.

Signs of Disease or Damage	
Sign	What it may indicate
Tree has ragged leaves with holes	Insects feeding on the leaves
Black or brown leaves	Stem or leaf disease
Spots or bumps on leaves	Insects and mites
Twisted or malformed leaves	Insects and disease, herbicides
Leaves changing color before fall	Trunk or root damage, drought, pollution
Branch decay	Unhealed wounds
Peeling or broken bark, holes in the bark	Trunk wound, canker disease, or damage caused by humans or animals
Dying branches on one side of crown	Root decay, root injury or internal stem disease, insect attack
Canker (a dead section of a trunk or branch)	Fungal infections
Splits	Broken branches
Hollows	Water entering through old wounds and supporting wood decay by fungi
Fungi or mushrooms growing on tree	Internal decomposition of wood by fungi
Green or brown spots on needles	Air pollution

Results

Total number of trees with signs of disease or damage in plot: _____ (Value A)
 Total number of trees in plot: _____ (Value B)
 Percentage of trees damaged = (Value A ÷ Value B) x 100 = _____ percent

Rating

Tree and Crown Condition		
Rating	Description	Points
Good	Less than 25 percent of trees have damage	3
Fair	25-50 percent of trees have damage	2
Poor	Greater than 50 percent of trees have damage	1
Overall Tree and Crown Condition rating for sample plot:		

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Forest Health Indicator: Forest Diversity

Name(s): _____

Location: _____

Date: _____

A healthy forest includes a variety of different plants and animals. One way to assess this diversity is to determine whether there is a mix of plant species of different sizes and ages, thus creating forest "layers" that provide habitat for many species.

Materials

Pencil, paper, tape measure, chalk, tree identification guide (optional)

Method

Look at the leaves, bark, seed pods, or flowers of the trees in your forest plot to determine whether they are the same or different species. Use the *Tree Species Diversity* chart below to catalog this information. Tree identification guides are helpful with this step, but not necessary. If a tree identification guide is not available, use your observation skills to describe the differences in tree types and include this information in the *Tree Species Diversity* chart below.

Measure (or estimate) the diameter at breast height (DBH) for all trees in the sample plot. Count (or estimate) the number of trees of different size classes using the corresponding DBH size classifications found in the *Size Diversity* chart below and record your findings. To help you, consider using chalk to mark the trees you have already counted.

Assess the presence or absence of different forest layers, using the descriptions found in the *Forest Layer Diversity* chart and record your findings.

Results

Tree Species Diversity		
	Name or Description	Number found in sample plot
Species 1		
Species 2		
Species 3		
Species 4		
Species 5		

Note: Please continue listing to account for all species present in sample plot.

Size Diversity		
Tree Size	DBH	Number found in sample plot
Saplings or Poles	4–9 inches (10–24 cm)	
Small	10–14 inches (25–37 cm)	
Medium	15–19 inches (38–49 cm)	
Large	20–29 inches (50–75 cm)	
Giant	30 inches or greater (> 75 cm)	

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Forest Health Indicator: Forest Diversity (cont.)

Forest Layer Diversity		
Tree Layer	Description	Present in sample plot? (Yes/ No)
Overstory	Trees whose canopies are fully exposed to the sun	
Understory	Trees growing in the shade of other trees	
Tall shrub	Shrubs (woody plants with several stems arising from the base) greater than 6 feet (1.8 meters) in height	
Short shrub	shrubs less than 6 feet (1.8 meters) in height	
Forb	herbaceous (non-woody) plants such as ferns, wildflowers, and grasses	
Leaf litter	Dead and decaying leaves and other matter on the forest floor	

Rating

Tree Species Diversity		
Rating	Description	Points
Good	Three or more tree species present	3
Fair	Two tree species present	2
Poor	One tree species present	1
Tree Species Diversity rating for sample plot:		(Value A)

Size Diversity		
Rating	Description	Points
Good	Three or more size classes present	3
Fair	Two or size classes present	2
Poor	One size class present	1
Size Diversity rating for sample plot:		(Value B)

Forest Layer Diversity		
Rating	Description	Points
Good	Five or six layers present	3
Fair	Three or four layers present	2
Poor	One or two layers present	1
Forest Layer Diversity rating for sample plot:		(Value C)

Overall Rating

Determine the overall rating by adding up the points shown for the tree species, size, and forest layer diversity ratings; then dividing the total by 3. Round the total to the nearest whole number.

(Value A + Value B + Value C) ÷ 3 = _____ (Average point value)

Overall rating for Forest Diversity:

Good: Average point value of 3 Fair: Average point value of 2 Poor: Average point value of 1

Overall Forest Diversity rating for sample plot: _____

Sources

Greenleaf Forestry and Wood Products Inc. 2010. "Forest Health Checklist." http://www.greenleafforestry.com/greenleafservices_006.htm.

Portland State University. 2010. "Protocol: Measuring Tree Diameter, Class Size, and Average Species Diameter." *Ecoplexity*. <http://ecoplexity.org/node/236?page=0,4>.

11.3 APPENDIX E: THE THREE SURVEY POINTS WHERE FOREST DIVERSITY AND HEALTH WERE ASSESSED DURING THE 2021 MONITORING VISIT

Categories	Kingsmill Forest Diversity Survey 1	Kingsmill Forest Diversity Survey 2	Kingsmill Forest Diversity Survey 3
Lat/Long	44.713858, -76.230230	44.711778, -76.231873	44.712972, -76.230811
Size Diversity			
Sapling/Poles	1	0	6
Small	1	0	4
Medium	2	1	2
Large	2	6	1
Giant	5	5	2
Size Diversity Rating	Good – 3 points	Good – 3 points	Good – 3 points
Layer Diversity			
Overstory	Yes	Yes	Yes
Understory	No	Yes	Yes
Tall	Yes	Yes	Yes
Short Shrub	Yes	Yes	Yes
Forb	Yes	No	Yes
Leaf Litter	Yes	Yes	Yes
Forest Layer Diversity Rating	Good – 3 points	Good – 3 points	Good – 3 points
Species Diversity			
Species Present	White Cedar, Hemlock, Basswood, White birch	red maple, basswood, white birch, hemlock	Red oak, White pine, White cedar, White Birch, Basswood
Species Diversity Points	Good – 3 points	Good – 3 points	Good – 3 points
OVERALL RATING	(3+3+3)/3 = 3 GOOD	(3+3+3)/3 = 3 GOOD	(3+3+3)/3 = 3 GOOD
Disease Survey			
Trees has ragged leaves with holes	5	3	8
Splits (Broken branches)	0	3	1
Total trees with disease	5	3	8
Total trees in plot	11	12	15
Percentage of damaged trees	45%	25%	53%
OVERALL DISEASE RATING	FAIR – 2 POINTS	FAIR – 2 POINTS	POOR – 1 POINT

11.4 APPENDIX G: PROPERTY RESTRICTIONS

11.4.1 Conservation Land Tax Incentive Program (CLTIP)

Lady Kingmill Nature Reserve has also been registered under CLTIP as a Community Conservation Land. CLTIP is designed to support private stewardship of important natural areas in Ontario by providing a 100% tax exemption to eligible portions of land. This program needs to be applied for every year in order to stay enrolled.

Land portions are not eligible under CLTIP if there are:

- buildings
- landscaped areas
- motorized vehicle areas
- areas producing timber or non-timber forest products for sale
- farmed areas
- areas with significant invasive/non-native species
- site alterations including draining, dredging, filling wetlands, aggregate extraction, grading and soil removal

*Engagement in the construction of the land use areas described above will also likely remove an enrolled portion of land from the program. Depending on when the land use activity started, the organisation may be retroactively charged for taxes.

Activities that maybe be permitted but require approval from the MNR include:

- tree removal
- trail development
- fuelwood removal
- culling non-native species that are minor component of the landscape.

Land use activities that are permitted include:

- low impact recreation activities (ex: hiking, biking, hunting, fishing, wildlife viewing)
- invasive species management
- prescribed burns
- trail maintenance
- tree felling/removal for health or safety purposes
- infill planting of native species representative of the ecosystem.

11.4.2 Ecological Gifts Program

Lady Kingsmill Nature Reserve was donated under the Ecological Gifts program as a fee simple donation. EcoGift donations provide the donor with significant tax benefits and a way for them to protect the ecologically significant land they're donating.

Any change in use or disposition of an EcoGift property would need to be authorized by Environment and Climate Change Canada in writing. If a change in use or disposition proceeds without written authorization then the RWLT would have to pay a tax of 50% of the current fair market value of the property.

A request for a change in use maybe permitted if the change is beneficial to the long-term conservation of the ecologically sensitive features on the property. Changes in use are not likely to be approved if it is likely to diminish or present a threat to ecological features on the property (constructing trails or buildings, road paving or subdivisions). The disposition of a property will depend on whether the property is intended to be sold or gifted and whether the intended recipient is qualified to receive an EcoGift under Ecological Gifts Program.