Newfoundland Labrador

LAWN BAY

Ecological Reserve

Management Plan

Parks and Natural Areas Division
Department of Environment and Conservation

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Background photo: PNAD, Paul Taylor
Back Cover photo: Common Murres, Dave Walsh

Lawn Bay Ecological Reserve
Management Plan

PNAD, Paul Taylor

Colombier Island

Foreword

Newfoundland and Labrador's protected areas are special places. They preserve examples of woodland caribou herds, diverse seabird colonies, globally important fossil sites, endangered and threatened plants and animals, and globally rare habitats. Our protected areas provide natural venues for scientific research, education, and enjoyment for current and future generations.

Parks and Natural Areas Division of the Department of Environment and Conservation currently manages 32 provincial parks, 2 wilderness reserves, 17 ecological reserves, 1 provisional ecological reserve, 2 Canadian heritage rivers, and 1 public reserve.

Establishing and maintaining a system of protected areas is the foundation for sustainable and responsible development in Newfoundland and Labrador.

Our vision for a system of natural areas is:

A comprehensive system of publicly supported parks and protected areas for citizens present and future that protects the province's rich biodiversity and natural heritage, helps support a vibrant culture and sustainable economy, and enhances public understanding, appreciation, and enjoyment of our natural environment.

Lawn Bay Ecological Reserve is an example of our vision in action. The Reserve contains the only known breeding colony of Manx Shearwater (*Puffinus puffinus*) in North America. The islands also support a significant population of Leach's Storm-Petrel and smaller numbers of Herring Gull, Great Black-backed Gull, Black-legged Kittiwake, Common and Arctic Tern, Common Murre, Razorbill and Black Guillemot.

Parks and Natural Areas Division is committed to working with local communities, scientific researchers and other agencies to protect and maintain this unique seabird community for future generations. This management plan for Lawn Bay Ecological Reserve demonstrates the Department's commitment to protect and preserve one of Newfoundland and Labrador's special places.

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Middle Lawn Island

1 LAWN BAY ECOLOGICAL RESERVE

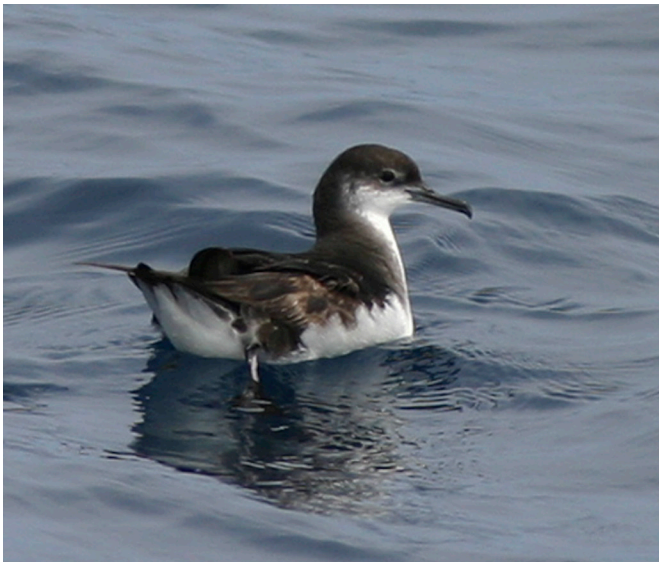
1.1 Significance of Lawn Bay Ecological Reserve

Middle Lawn Island, officially called Middle Island, off the Burin Peninsula in Newfoundland and Labrador is the only location in North America where Manx Shearwaters (*Puffinus puffinus*) are known to breed. Manx Shearwaters breed primarily in the northeast Atlantic. Offshore islands throughout Europe account for >95% of the world's population (~370,000 pairs) (Birdlife, 2004).

Lawn Bay Ecological Reserve was established to help protect the internationally significant Manx Shearwater breeding colony on Middle Lawn Island. The Reserve includes not only Middle Lawn, but also nearby Swale and Colombier Islands. In addition to Manx Shearwater, Lawn Bay Ecological Reserve provides breeding habitat for other seabirds including:

- A significant colony of Leach's Storm-Petrels (ninth largest in Newfoundland and Labrador); and
- Black Guillemot, Common Murre, Razorbill, Common and Arctic Tern, Black-legged Kittiwake, Great Black-backed Gull and Herring Gull.

Lawn Bay Ecological Reserve is a Special Feature or Component 3 Reserve in the Newfoundland and Labrador Natural Areas System. For more information see *Caring For Our Special Places: A Framework* (Government of Newfoundland and Labrador, 2004).



Brian L. Sullivan

Manx Shearwater (*Puffinus puffinus*)

1.2 History of Discovery and Establishment

In 1974, Manx Shearwaters were occasionally seen and nocturnal calls heard on Middle Lawn Island. A survey of the island by researchers revealed no signs of shearwater breeding activity. By 1976, however, flocks of several hundred birds were frequently seen near the island (Lien and Grimmer, 1978). The discovery of Manx Shearwater burrows in 1977 revealed that the island was providing breeding habitat for Manx Shearwater as well as Leach's Storm-Petrel and low populations of Herring and Great Black-backed Gulls (Storey and Lien, 1985).

Since the discovery of Manx Shearwater in the area, there has been local interest in their protection and promotion. Residents in the area have provided guidance and support to researchers. Organizations such as Greater Lamaline Area Development Association assisted in implementing a three-year research project on the Manx Shearwater during the 1980s. The Association has also been engaged in Manx Shearwater protection and promotion efforts.

In 2000, Middle Lawn Island gained international recognition when it was designated as an Important Bird Area (IBA) through the IBA Program. The IBA Program is an international conservation initiative developed to identify, conserve and monitor a network of sites that provide essential habitat for the world's bird populations.

Sheena Roul

Researcher with Manx Shearwater

The Wilderness and Ecological Reserves Advisory Council (WERAC) attended a meeting with community members in the area in 2007 to explore the feasibility of establishing a seabird ecological reserve around Middle Lawn Island. On July 17, 2009 the Lawn Islands Archipelago Provisional Ecological Reserve, (including Middle Lawn, Offer and Colombier Islands) was formally established in recognition of the international significance of the Manx Shearwater breeding colony and important breeding habitat for a number of other seabird species.

On November 11, 2009 Parks and Natural Areas Division hosted an information session in the community of Lord's Cove regarding the establishment of Lawn Islands Archipelago Provisional Ecological Reserve. Those in attendence discussed the process for determining the feasibility of permanent reserve establishment.

On July 10, 2010 and July 13, 2010, public notices advising of public consultations to be hosted by WERAC to discuss the proposed ecological reserve, were published in local and regional newspapers. The public consultations were held on September 15 in Lamaline and on September 16, 2010 in St. Lawrence.

Based on feedback from public consultations, the final boundaries of the Ecological Reserve were modified to include Middle Lawn, Colombier and Swale Islands and exclude Offer Island. The Lawn Bay Ecological Reserve was permanently established on April 13, 2015.

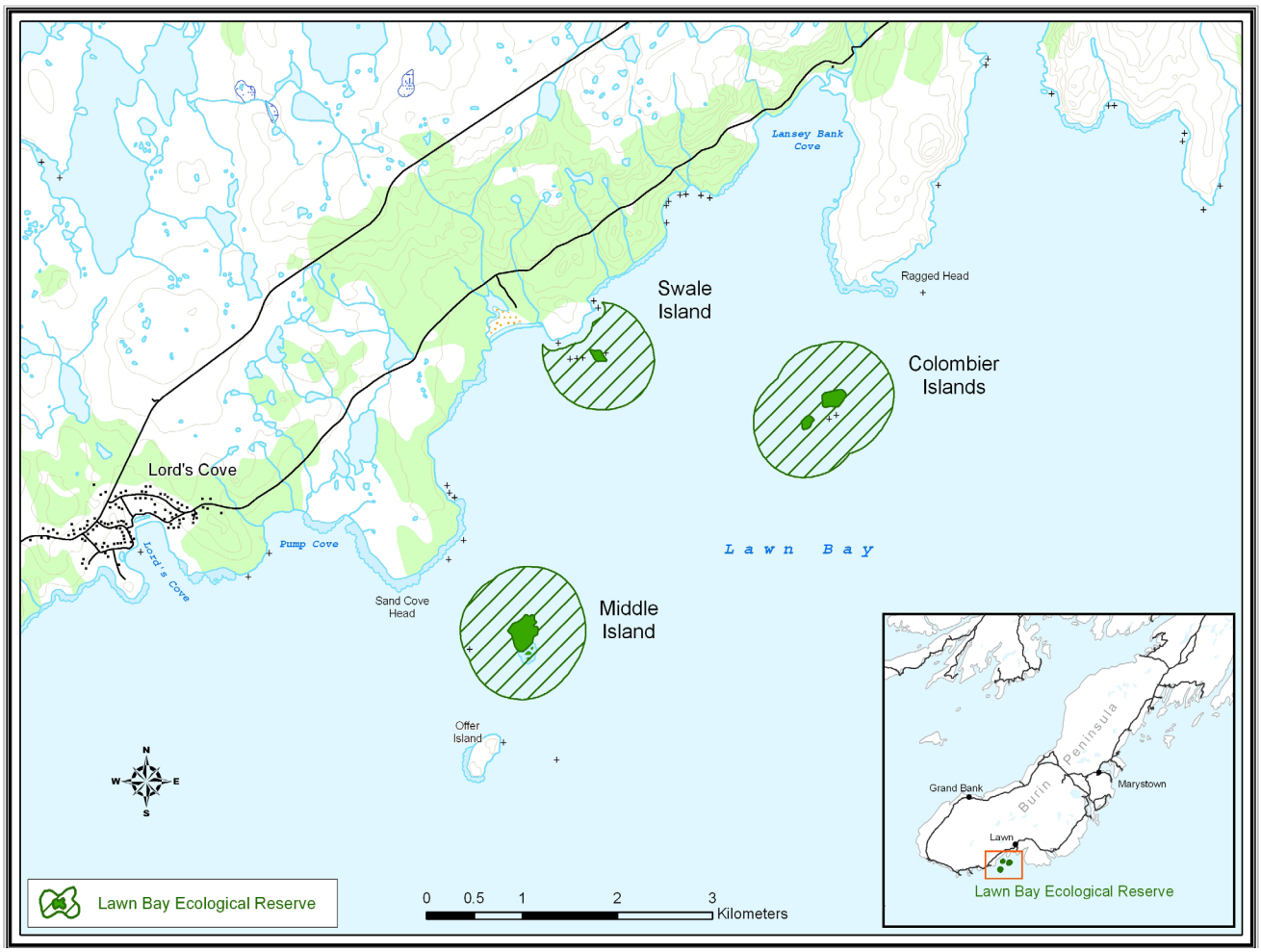


Figure 1. Lawn Bay Ecological Reserve, off the south coast of the Burin Peninsula, Newfoundland and Labrador, includes Middle Lawn Island (charted as Middle Island), Swale Island (known locally as Seal Island) and Colombier Islands (known locally as Glumby Islands).

1.3 Location and Nature of the Reserve

Lawn Bay Ecological Reserve consists of four islands located in Lawn Bay off the Burin Peninsula; Middle Lawn (or Middle) Island, Swale (or Seal) Island, and two islands known collectively as the Colombier (or Glumby) Islands (Figure 1). These islands are located approximately 1 kilometre offshore between the communities of Lord's Cove and Lawn. The Reserve includes these islands as well as all waters, islands and shoals within 500 metres of Middle Lawn and Colombier islands. The marine boundary around Swale Island extends 500 metres from most of the island. However the boundary decreases along the northwestern side of the island to maintain a 100 metre distance from the mainland shoreline. The total area of the Reserve is 384.6 ha; 13.9 ha are terrestrial and 370.7 ha comprise the marine zone.

Middle Lawn Island lies southeast of Sand Cove Head on the Burin Peninsula. This grass-covered island is approximately 7.47 ha with a maximum height of 60 metres above sea level (asl) (Storey and Lien, 1985). Like each of the islands protected within the Reserve, vegetation primarily consists of mixed grasses, ferns and irises (Lien and Grimmer, 1978; Parks and Natural Areas Division, 1997). The island has never been inhabited by humans but in the past, livestock (goats and sheep)

were placed on the island to graze (Roul, 2010a). In addition to being the only North American colony of Manx Shearwaters, Middle Lawn Island also supports a significant colony of Leach's Storm-Petrels, along with smaller colonies of Herring Gull, Black-backed Gull and Black Guillemot.

The two easternmost islands protected within Lawn Bay Ecological Reserve are referred to collectively as Colombier Islands, or locally as Glumby Islands. The larger northeastern island is approximately 3.58 ha and reaches a height of 70 metres asl. The area of the lower southwestern island is approximately 1.22 ha. These islands have not been inhabited by humans. However, activities such as migratory bird hunting have occurred in previous years on the larger island (Roul, 2010a). Substantial colonies of Black-legged Kittiwakes nest on the northeast and southwest cliffs on the larger island, and small colonies of Leach's Storm-Petrels, Herring Gulls and Common Murres nest here as well.

Swale Island, locally known as Seal Island, is a small island, approximately 1.27 ha in area, that lies just a few hundred metres off the mainland coast. The seabird populations have not been well studied. However, early Canadian Wildlife Service records indicated populations of Arctic and Common Terns nesting on this island, as well as Leach's Storm-Petrels and Herring and Black-backed gulls (G. Robertson, pers. comm.). Local hunters have reported fledging Common Eiders using Swale Island.

Lawn Bay Ecological Reserve lies within the Eastern Hyper-oceanic Barrens Ecoregion (Meades, 1990) and is characterized by frequent and persistent fog. This coastal ecoregion hosts three other seabird ecological reserves: Funk Island, Baccalieu Island and Cape St. Mary's. The glaciated landscape is covered by blanket bog and moss-heath communities, with scattered patches of stunted Balsam Fir (known as tuckamore).

PNAD, Paul Taylor

Eastern Hyper-oceanic Barrens Ecoregion, with Lawn Bay Ecological Reserve in the background

1.4 Seabirds in the Reserve

1.4.1 Manx Shearwater

The Manx Shearwater is a medium-sized shearwater in the Procellariidae family of seabirds. Manx Shearwaters have the most northerly breeding range of the world's 28 species of shearwaters; it is the only one that breeds in the northern hemisphere and migrates to the southern hemisphere in the fall (Lee and Haney, 1996). Band recoveries in Newfoundland and in Lawn Bay indicate that Manx Shearwaters from the Welsh colonies of Skokholm and Skomer likely provided founders for the North American range expansion (Montevecchi and Tuck, 1987). This species winters approximately 5,000 kilometres south of Lawn Bay Ecological Reserve in the southeastern waters off South America.

Brian L. Sullivan

Manx Shearwater (*Puffinus puffinus*)

Manx Shearwaters, particularly those in Newfoundland, nest in deep burrows and dark recesses in cliffs and rock crevices. They are strictly nocturnal when attending breeding colonies. The process of digging a new burrow requires a full breeding season and pairs often use the same burrow throughout their reproductive lives (Bierregaard et al., 1975; Storey and Lien, 1985). Manx Shearwaters are long-lived. One of the world's oldest known birds is a Manx Shearwater, recorded as being at least 55 years old at the time of recapture in 2003 in Northern Ireland (Copland Bird Observatory, 2004).

The first confirmed breeding record for Manx Shearwater on Middle Lawn Island was in 1977 (Storey and Lien, 1985). Breeding activity was monitored annually from 1977 to 1981. The colony showed continued growth throughout this period. By 1981 there were 221 active burrows; 13 had eggs, and seven chicks were produced (Storey and Lien, 1985). The island was not surveyed again until 1989, when Lien and Ledwell (1989) estimated approximately 500 active burrows.

A subsequent survey of Middle Lawn Island in 2000 yielded only nine active burrows and three eggs. Survey effort was conducted during the pre-hatch period. Chicks were therefore not counted though the chick population was estimated to be no more than 3 (Robertson, 2002). A population study conducted from 2000 to 2009 demonstrated a continuous decline in numbers of breeding Manx Shearwater throughout that period (Fraser et al., 2013). The authors predict a continuing decline in the population without continued immigration to the colony.

Surveys in 2009 (Roul, 2010a) and 2010 (Roul, 2010b) show that Manx Shearwater breeding on Middle Lawn Island has continued to decline. Burrow searches in 2009 revealed only one Manx Shearwater chick, while no chicks were found in a similar search of burrows in 2010 (Roul, 2010a; Roul, 2010b). Studies of Manx Shearwater vocalizations in 2009 and 2010

revealed that Middle Lawn Island is still the primary site for Manx Shearwater breeding activity in the area, as evidenced by a much greater frequency of vocalizations in both years than on nearby Offer and Colombier Islands. However, the vocalization studies did indicate that there is active prospecting by Manx Shearwater for burrow sites on Colombier and Offer Islands, albeit to a much lesser degree (Roul, 2010b). A summary of these data is found in Table 1.
Several factors likely contribute to the decline in breeding effort and success of Manx Shearwater on Middle Lawn Island including: predation by Short-eared Owl (*Asio flammeus*), mink and Herring and Black-backed Gulls; availability of suitable burrow habitat (Storey and Lien, 1985); ecosystem shift due in part to colder water in the 1990s; and fewer and later capelin (Robertson, 2002).

One of the most immediate and significant factors appears to be predation. Seabird carcasses, including 15 Manx Shearwaters, were reported from caching sites on Middle Lawn Island during the 2009 breeding season (Roul, 2010a). The first surveys of the area and inspection of the carcasses pointed toward small mammal predation, and during the winter of 2010, a sea duck hunter reported seeing a mink on Offer Island. However, a spring survey of the islands to investigate predation later concluded that mink were unlikely to be resident on Middle Lawn Island. Owl pellets consistent with pellets from Short-eared Owl were detected on the island (M.Pitcher, pers. comm.). Short-eared Owl, a species at risk, is a known predator of Manx Shearwater.

Despite the uncertainties surrounding Manx Shearwater decline, there is potential for this colony to increase, as non-breeders continue to attend the breeding site (Robertson, 2002). Continued monitoring of the colonies has been recommended by Canadian Wildlife Service to clarify the status and trends of these seabirds.

Table 1. History of Manx Shearwater Attendance and Breeding Activity on Middle Lawn Island

Year	Active Burrows	Eggs	Chicks	Source
1977	76	3	1	1
1978	116	3	1	1
1979	156	7	3	1
1980	191	12	4	1
1981	221	13	7	1
1989	500	n/a	n/a	2
2000	9	3	n/a; (<=3)	3
2000-09	declining	declining	declining	4
2009	n/a	n/a	1	5
2010	35	n/a	n/a	6

Note: survey efforts in 2001 were not comparable to these results and were not included in table.

1. Storey and Lien (1985).
2. Lien and Ledwell (1989).
3. Robertson (2002).
4. Fraser et al. (2013).
5. Anne Storey, pers. comm.
6. Roul (2010b).

1.4.2 Other Seabirds

The Leach's Storm-Petrel (*Oceanodroma leucorhoa*), also known locally as Mother Carey's Chicken or Carey Chicks, is a member of the Hydrobatidae family. Like the Manx Shearwater, they nest in burrows. On Middle Lawn Island, they tend to burrow in the peat towards the top of the island, above the Manx Shearwater burrows (Lien and Grimmer, 1978). Leach's Storm-Petrels are nocturnal, flying to and from their nests only at night. Many aspects of their reproductive biology remain to be studied. This seabird nests in burrows on islands to avoid predation by aerial and terrestrial predators (Huntington et al., 1996).

PNAD

Leach's Storm-Petrel (*Oceanodroma leucorhoa*) at night

Like the Manx Shearwater, the Leach's Storm-Petrel colony also appears to be in decline. Surveys of Leach's Storm-Petrel colonies in 1981 indicated approximately 26,000 Leach's Storm-Petrel pairs occured in area (Storey and Lien, 1985). Data from 2001 indicated a colony of approximately 13,879 pairs (Robertson et al., 2002). Annual surveys from 2001 to 2006 indicate a further annual population decline of 8%, resulting in a 2006 population estimate of 9,188 breeding pairs (Fraser et al., 2013). Causes for this decline are not fully understood, but are likely similar to those affecting the decline of Manx Shearwaters.

The Black Guillemot (*Cepphus grylle*) is a particularly wide-ranging member of the Alcidae or Auk family. They can be found nesting in rock cavities under overhangs and vegetation along coastlines, islands, and pack ice from the high Arctic and subarctic southward to Atlantic north-temperate zones. Their range is almost circumpolar. The ability of the guillemot to feed in small patches of open water may explain its widespread distribution at higher latitudes, where adults often concentrate at ice edges (Butler et al., 2002). Unlike most Alcids, the Black Guillemot lays two eggs. As opportunistic feeders, their diet varies considerably by their location and time of year. Usually feeding in shallow waters near their breeding site, they prey on fish such as herring, cod and sculpin, but are also known to eat barnacles, jellyfish, sea snails and sea sponges. Herring Gulls, Great Black-backed Gulls and even Arctic Terns have been known to steal food from Black Guillemots and/or (with the exception of Arctic Terns) prey on Black Guillemot chicks (Butler et al., 2002).

Patrik Jonasson

Black Guillemot (*Cepphus grylle*)

The Common Murre (*Uria aalge*), commonly known as Turr in Newfoundland and Labrador, is one of the largest living members of the Alcidae family. An avid diver, the Common Murre reaches depths of more than 150 metres in search of prey (Hedd et al., 2009; Regular et al., 2009). Common Murres do not build nests but lay a single egg on bare rock, breeding along cliff edges or on slopes. They feed their chicks capelin, sandlance and invertebrates (Ainley et al., 2002; Davoren and Montevecchi, 2003a), and may forage up to three times a day near the colony (Davoren and Montevecchi, 2003b). Common Murres are highly sociable, living side-by-side in large colonies and feeding in flocks (Montevecchi and Tuck, 1987). This level of breeding density helps to protect chicks from predators such as Herring and Black-backed Gulls. Common Murres are particularly susceptible to disturbance by noise or boats in close proximity. Disturbance can cause 'fly-offs' where the adults take to flight quickly, potentially knocking an egg or chick off the cliff ledge or leaving them vulnerable to predation by gulls, Common Ravens and Bald Eagles.

Lee Rentz

Common Murre *(Uria aalge)* with eggs

The Razorbill (*Alca torda*) is the closest living relative of the Common and Thick-billed Murres and of the extinct Great Auk (*Alca impennis*), also in the Alcidae family. Though the majority of the world's Razorbill population (about 60-70%) breeds in Iceland, small colonies exist throughout eastern North America (about 38,000 breeding pairs), particularly in the low-arctic waters of southern Labrador and coastal waters of southeastern Newfoundland (Lavers et al., 2009a). Their numbers have declined in many parts of their range as a result of hunting, egging, and disturbance to breeding colonies (Lavers et al., 2009b). Like the Common Murre, Razorbills occasionally descend to ocean depths greater than 100 metres for prey. Their mouthparts are designed primarily for capturing fish, swallowing several small fish whole while underwater, or taking larger fish to the surface to be eaten.

TCR

Razorbill *(Alca torda)* with fish

In the waters off Newfoundland and Labrador, Razorbills tend to feed more heavily upon crustaceans (Lavers et al., 2009a). They breed on rocky islands and steep cliffs, with nest sites that are partly or wholly enclosed often in rocky crevices. Their breeding sites are much more dispersed than those of Common Murres. Razorbills are also known to be long lived, with the oldest bird banded as a nestling in 1968 and was confirmed to be breeding, in 2009, 41 years later (Lavers et al., 2009a).

The Black-legged Kittiwake (*Rissa tridactyla*) is distinctive among the gull or Laridae family because it has a circumpolar distribution. They nest in large colonies along very steep rock cliffs, so close together that sometimes their nests touch (Hatch et al.,

Bill Montevecchi

Black-legged Kittiwake *(Rissa tridactyla)*

2009). Their nests are made of vegetation and mud (sometimes seaweed or feathers), often on top of a small rock platform. They often feed in association with other birds such as gulls, murres or terns and with whales such as Humpbacks. However, Herring Gulls and Black-backed Gulls prey on kittiwakes, especially unattended chicks and eggs (Regehr and Montevecchi, 1997). As with murres, fly-offs due to disturbance leaves eggs and young vulnerable to predators.

The Arctic Tern (*Sterna paradisaea*), which also has a circumpolar distribution, migrates from its circumpolar breeding range to spend the non-breeding season in the productive waters around the Antarctic (Egevang et al., 2002). This makes the migration of the Arctic Tern the longest regular migration of any bird (Hatch and Jeremy, 2002; Egevang et al., 2002). They tend to nest in rocky, grassy and treeless areas, particularly on islands or close to the water. Arctic Terns generally eat small fish, crustaceans and insects, catching their prey by flying back and forth over an area and then swooping down to capture prey at or just below the water surface. Arctic Terns are also quite territorial, with intrusions into nesting territory leading to violent fights (Hatch and Jeremy, 2002). Tern colonies are also notoriously liable to change, moving their breeding locations from year to year. Though both Arctic and Common Terns have been known to breed in the area, in any given year they may or may not be breeding within the Reserve.

The Herring Gull (*Larus argentatus*) and Great Black-backed Gull (*Larus marinus*) are both members of the Laridae family. The Great Black-backed Gull is the largest and heaviest gull in North America, and one of the largest in the world. They are partial migrants, with most breeders leaving the southern Newfoundland island colonies in late August, moving offshore (50–100 km) to deeper waters, where they remain until early April. They breed in many areas with Herring Gulls, but prefer more open and higher areas (Good, 1998). In Newfoundland and Labrador, their

Pekka Valo

Arctic Tern *(Sterna paradisaea)*

PNAD, Erika Pittman

Great Black-backed Gull *(Larus marinus)*

main food is fish (capelin, Atlantic cod and tomcod), birds (eggs and chicks of Leach's Storm-Petrel, Herring Gull, kittiwake and puffin) and squid.

The Herring Gull has a circumpolar breeding distribution and a diverse diet. Depending on habitat, time of year and availability they may prey on marine invertebrates, fishes, insects, human refuse, other seabirds, eggs, and chicks. Herring Gulls prefer dry, well-drained rock or sand, but have the highest breeding success in vegetated areas with adequate cover from both weather and predation (Pierotti and Good, 1994). Both Great Black-backed Gulls and Herring Gulls make their nests by scraping an area and lining it with vegetation and feathers. Both the Black-backed Gull and Herring Gull were nearly extirpated from North America during the 19th century by feather hunters and egg collectors, but their populations have since recovered their numbers (Pierotti and Good, 1994; Good, 1998). Within Lawn Bay Ecological Reserve, one factor potentially limiting other seabird population growth may be the development in the last 15 years of a large colony of approximately 500 breeding Herring and Great Black-backed Gulls (Robertson, 2002). A summary of all known breeding seabird populations found in the Reserve is presented in Table 2.

Bill Montevecchi

Herring Gull *(Larus argentatus)*

Lawn Bay Ecological Reserve also provides non-breeding habitat for species such as the Canada Goose (*Branta canadensis*) and is an important area for wintering sea ducks and Alcids. Eiders (*Somateria* spp.) and Black Guillemot are found on the islands throughout the winter. The Harlequin Duck (*Histrionicus histrionicus*), a species at risk, has also been reported to frequent the islands during the winter.

Table 2. Seabird breeding location and population estimates for Lawn Bay Ecological Reserve

Species	Island	Population estimate	Year	Source
Manx Shearwater	Middle Lawn Island	150-240 individuals	2009	1
Leach's Storm-Petrel	Middle Lawn Island	9,188 pairs	2006	1
	Colombier Islands	125 pairs	1977	2
	Swale Island	62 pairs	1974	4
Herring Gull	Colombier Islands	100 individuals	2005	4
	Middle Lawn Island	10 pairs	2006	3
	Swale Island	50 individuals	2000	4
Great Black-backed Gull	Middle Lawn Island	6 pairs	1989	4
	Colombier Islands	Probable	1975	4
	Swale Island	56 pairs	1977	4
Black-legged Kittiwake	Colombier Islands	100 individuals	2005	4
Common Murre	Colombier Islands	10 pairs	1997	3
Black Guillemot	Middle Lawn Island	100 individuals	2006	3

Sources: 1) Fraser et al. (2013), 2) Lien in Cairns et al., (1986), 3) G.J. Robertson, unpublished data, 4) CWS, unpublished data.

Shirlene Edwards

Middle Lawn Island (on left) and Offer Island (on right - outside Reserve)

2 MANAGEMENT POLICIES

2.1 Introduction

Ecological reserves are established under the *Wilderness and Ecological Reserves Act* (1980) for the preservation of areas of the Province that contain unique or representative species, ecosystems or natural phenomena.

Lawn Bay was established as an ecological reserve primarily to protect an internationally significant breeding colony of Manx Shearwater and breeding habitat for a number of other seabird colonies. It also serves a variety of other objectives.

Persuant to Section 5 of the *Wilderness and Ecological Reserves Act*, Lawn Bay Ecological Reserve is established:

a. To preserve rare botanical, zoological, geological or geographical characteristics;

b. To provide for scientific research and educational purposes in aspects of the natural environment;

c. To provide standards against which the effects of development in other areas may be measured;

d. To preserve representatives of distinct ecosystems in the province; and

d. To preserve organisms in their natural habitat to ensure the preservation of their gene pools.

This management plan specifies guidelines for protection and use of the site for scientific research, education, and sustainable tourism.

2.2 Vision

Lawn Bay Ecological Reserve is an internationally significant site where protection of Manx Shearwater and seabird breeding habitat is the primary goal.

An active research and monitoring program provides vital information for reserve management and offers opportunities for local involvement and stewardship. Research conducted in the Reserve informs global understanding of the North American distribution and breeding habitat of the Manx Shearwater.

Partnerships with local communities help to protect and communicate the importance of Manx Shearwater and protect seabird breeding habitat.

2.3 Goals

Goal 1. Protect Seabird Breeding Habitat and Seabird Populations
To protect breeding habitat and seabird populations while maintaining the Reserve's ecological integrity

Goal 2. Research and Monitoring
To promote an active research and monitoring program

Goal 3. Education and Sustainable Tourism
To encourage, manage and support high quality educational and sustainable tourism experiences

Goal 4. Partnerships
To create and maintain active partnerships with local communities, educational institutions, organizations and government agencies in research, education and stewardship activities

2.4 Management Policies

The overall approach to reserve management is one that emphasizes protection of seabirds, breeding habitat and ecological integrity of the Reserve. The management approach for Lawn Bay Ecological Reserve is consistent with IUCN Protected Area Management Category II. In keeping with this approach, the following management policies are established:

a. Scientific research is encouraged where it does not conflict with the general objectives of site protection.

b. Use of the site for educational purposes may be permitted where it does not conflict with the general objectives of site protection and scientific research.

c. Use of the site for purposes other than (a) and (b) may be permitted where it does not conflict with the general objectives of site protection.

For a summary of the *Seabird Ecological Reserve Regulations* see Appendix B. The *Wilderness and Ecological Reserves Act* and *Regulations* are available online at www.env.gov.nl.ca/env/parks/wer/rules.html.

TCR

Razorbill *(Alca torda)*

Les Stocker

Manx Shearwater

3 IMPLEMENTATION GUIDELINES

In addition to the requirements of the *Wilderness and Ecological Reserves Act* and the *Seabird Ecological Reserve Regulations*, the following information serves as a guide for users and managers of the Lawn Bay Ecological Reserve.

3.1 Reserve Management

a. The managing agency of the Reserve is the Parks and Natural Areas Division, Department of Environment and Conservation, Government of Newfoundland and Labrador. The Seabird Ecological Reserves Advisory Committee advises Parks and Natural Areas Division on proposed scientific research and management issues in all seabird ecological reserves.

b. No new buildings or other permanent structures will be constructed within the Reserve.

c. The existence of the Reserve may be noted by signs erected in the Reserve or at other appropriate locations. Parks and Natural Areas Division may partner with local communities to place educational or regulatory signage outside the Reserve.

d. Patrols of the Reserve will be made by staff of Parks and Natural Areas Division, Department of Environment and Conservation and enforcement officers to ensure that regulations are being adhered to. Every effort will be made to ensure local support for the site and local involvement in site protection.

3.2 Reserve Access

3.2.1 Access to Islands

Visitation to the islands during the breeding season may disturb nesting seabirds and burrows. This can lead to desertion of burrows or nesting sites and negatively impact eggs and chicks. Habitat destruction is of particular concern for the Reserve's two burrowing species (Manx Shearwater and Leach's Storm-Petrel) since walking on burrows can cause them to collapse and can accelerate habitat erosion.

Therefore, to limit disturbances to seabirds during the breeding season and to minimize habitat erosion year-round, general access to Middle Lawn Island is by special permit only. Permits may be requested from Parks and Natural Areas Division.

Access to Swale or Colombier Islands during the breeding season (March 15 - October 30) is by special permit only. Access to Swale and Colombier Islands is not restricted outside of the breeding season. However, if research and monitoring show establishment of burrowing seabirds on islands other than Middle Lawn, a year-round restriction on general access to that island may be considered to protect sensitive nesting areas.

Sheena Roul

Monitoring Manx Shearwater burrow occupancy

3.2.1 Access to Marine Zone

Seabirds can also be disturbed by both motorized and non-motorized boats travelling in close proximity to the islands. As with human presence on the islands, human activity adjacent to the islands may disturb nesting seabirds or birds on the water, causing fly-offs and absences from nests and chicks. It is important to ensure that the amount of disturbance to seabirds within Lawn Bay Ecological Reserve is minimized, particularly during the breeding season.

Activity and distance guidelines can minimize potential impacts on seabirds and yet allow visitors to experience the Reserve from a reasonable distance. During the breeding season (March 15 - October 30), all vessels within the marine portion of the Reserve, with the exception of commercial fishing vessels, must maintain a distance of 100 metres from all islands in the Reserve. Once the breeding season is over, potential impacts to seabirds are considered to be minimal. Therefore, during the rest of the year, there are no distance restrictions in the marine zone of Lawn Bay Ecological Reserve.

Commercial fishers are encouraged to respect the same distance restrictions in the marine zone that guide other users of the Reserve. Parks and Natural Areas would like to work with vessel operators to discuss and develop “Operational Best Practices” for the operation of vessels in and around the Reserve.

In order to minimize the amount of disturbance affecting seabirds, tankers, freighters, barges, draggers and all other vessels larger than 20 metres are prohibited from operating within Reserve waters.

3.2.3 Access by Air and Aircraft Activity

Aircraft travel near seabird colonies may be disruptive to breeding birds. In order to ensure protection of the seabirds, aircraft activity is restricted in the Reserve except under permit from Parks and Natural Areas Division. During the breeding season (March 15 - October 30), no aircraft is permitted to take off or land in the Reserve and aircraft flying over the Reserve must maintain an altitude of at least 300 metres.

PNAD, Holly Hogan

Leach's Storm-Petrel breeding slope

3.3 Land Use

3.3.1 Grazing

There are mixed perspectives on the effects of grazing on burrowing seabirds. According to some researchers, past grazing on Middle Lawn Island doesn't appear to have had negative effects on burrow development and in some cases may even reduce gull habitat and predation (A. Story, pers. comm.; S. Roul, pers. comm.). However, observations of livestock such as sheep and goats in other protected areas has indicated that browsing or grazing alters vegetation dynamics and accelerates rates of soil erosion, potentially causing landslides, and can lead to the loss of seabird breeding habitat (Hipfner et al., 2010). At Cape St. Mary's Ecological Reserve, for example, sheep prefer the richer grass found in proximity to bird nests and their droppings. When sheep access these areas their presence has been shown to have a negative effect on non-burrowing seabirds (T. Power, pers comm.).

In order to provide the least disturbance to breeding birds from livestock and permit natural vegetative processes to continue, grazing is not permitted on any islands in the Reserve.

PNAD, Erika Pittman

Herring Gulls

3.3.2 Hunting

Pursuant to the *Wilderness and Ecological Reserves Act* and the *Seabird Ecological Reserve Regulations*, hunting in ecological reserves is prohibited. This approach is standard in all seabird ecological reserves and promotes the idea that a seabird ecological reserve is a sanctuary for wildlife and marine birds in particular. In accordance with the *Wilderness and Ecological Reserves Act*, hunting is prohibited within the Reserve and firearms must be wrapped and cased while in the Reserve and its waters.

Offer Island was identified during community consultations as an important location for winter migratory bird hunting. In order to accommodate this activity, Offer Island was excluded from the Reserve. In the future, if local residents reach a consensus and wish to include Offer Island within the Reserve, a process could be initiated to expand the boundary of the Reserve.

Len Zedel

Fishing boat near the Reserve

3.3.3 Fishing

To promote stewardship and protection of the Reserve's seabird populations, commercial fishers are encouraged to fish outside the marine zone and to completely avoid waters within 100 metres of the Reserve islands during the breeding season. Parks and Natural Areas Division would like to work with fishers to develop best practices for fishing in or near the Reserve and to report any incidence of birds caught in fishing gear.

PNAD, Paul Taylor

Middle Lawn Island

3.4 Monitoring and Protection

Parks and Natural Areas Division will partner with the Canadian Wildlife Service and other researchers to monitor seabird populations within the Reserve.

Under the *Wilderness and Ecological Reserves Act* and the *Seabird Ecological Reserve Regulations*, the intent in establishing a reserve is to permit natural ecological processes to function undisturbed, as much as possible, by human activities. Management of the Reserve by Parks and Natural Areas Division will strive to maintain the ecological integrity of the Reserve. Management decisions will be based on information from monitoring and research, and guided by the Seabird Ecological Reserve Advisory Committee.

3.5 Community Partnerships

Parks and Natural Areas Division will work with local communities to further educational objectives for the Reserve. The Division also recognizes the history of land use and local ecological knowledge in the area and will work with local communities to communicate this history and incorporate this knowledge in monitoring objectives.

3.6 Scientific Research

Providing areas for scientific research is one of the main reasons for creating and managing the province's ecological reserves. It is important that research be carried out in such a way that the scientific value of the Reserve is not diminished for future investigations. Accordingly, individuals wishing to conduct research within Lawn Bay Ecological Reserve require a scientific research permit from Parks and Natural Areas Division of the Department of Environment and Conservation.

All applications for scientific research in seabird ecological reserves are reviewed annually by the Seabird Ecological Reserve Advisory Committee.

Applications for permits should provide a description of the proposed research, including the objectives, methodologies and time frame involved. All published material related to research conducted in the Reserve will acknowledge the existence of the Reserve and the research permit from the Government of Newfoundland and Labrador, Department of Environment and Conservation. A report of the results of each research project will be filed with Parks and Natural Areas Division, and a copy of all scientific papers will be forwarded to the Division upon publication. Parks and Natural Areas Division staff may apply other conditions to permits as required.

Sheena Roul

Researcher with song metre, used to record Manx Shearwater calls

3.7 Educational Use

The site may be used for educational purposes provided such use does not damage the integrity or scientific value of the Reserve. Educational permits are required for institutions, individuals and groups wishing to utilize the area. Such permits can be obtained from Parks and Natural Areas Division of the Department of Environment and Conservation.

In keeping with the general management policy to retain the site in as natural a state as possible, the only on-site development for educational use is the posting of signs.

Information concerning the Reserve may be obtained from Parks and Natural Areas Division of the Department of Environment and Conservation.

Len Zedel

Photographing seabirds in Lawn Bay Ecological Reserve

3.8 Sustainable Tourism

Sustainable tourism presents an opportunity to support the conservation of biodiversity in protected areas as well as provide regional economic, social and cultural benefits. Permits are required for all commercial undertakings within the Reserve. Such permits can be obtained from Parks and Natural Areas Division of the Department of Environment and Conservation.

The Division encourages excellence in sustainability in the promotion and operation of public and private sector tourism services in Lawn Bay Ecological Reserve.

Given the nocturnal nature of the Manx Shearwater and Leach's Storm-Petrel, operation of boats in the Reserve at night requires special consideration. Many nocturnal seabirds are highly attracted to artificial light. Artificial light near the islands could facilitate predation by night-hunting gulls and also reduce visitation rates by burrow-nesting seabirds to mates, eggs, and chicks (Montevecchi, 2006). This is particularly important for the Manx Shearwater, which has a very small breeding population on the islands and may therefore be highly impacted by the loss of only a few individuals. The most effective mitigative measures to preserve darkness and avoid disturbance to nocturnal seabirds involve eliminating unnecessary lighting and reducing its intensity, minimizing the skyward and seaward projection lights and minimizing noise levels. Therefore, commercial tourism operator permits may include noise and light restrictions, as well as limitations on the frequency of tours.

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APPENDIX A – Birds of Lawn Bay Ecological Reserve

Table 3. Checklist of bird species detected at Lawn Bay Ecological Reserve and adjacent waters. List based on best available information on the status and distribution of birds in the Placentia Bay area and includes incidental sightings made from 1977-2010 by local people and experienced field ornithologists.

sp = spring (21 March – 20 June); s = summer (21 June – 20 September); f = fall (21 September – 20 December); w = winter (21 December – 20 March)

Family	Common Name	Scientific name	Season[a]	Rare[a]
Ducks, Geese and Swans (Anatidae)				
	Canada Goose	*Branta canadensis*	spsfw	no
	King Eider	*Somateria spectabilis*	spfw	no
	Common Eider	*Somateria mollissima*	spfw	no
	Harlequin Duck[1,2]	*Histrionicus histrionicus*	fw	no
	Surf Scoter	*Melanitta perspicillata*	fw	no
	White-winged Scoter	*Melanitta fusca*	fw	no
	Black Scoter	*Melanitta americana*	sfw	
	Long-tailed Duck	*Clangula hyemalis*	spfw	no
	Common Merganser	*Mergus merganser*	spsf	no
	Red-breasted Merganser	*Mergus serrator*	spsfw	
Loons (Gaviidae)				
	Common Loon	*Gavia immer*	spsfw	no
Shearwaters and Petrels (Procellariidae)				
	Great Shearwater	*Puffinus gravis*	sf	no
	Sooty Shearwater	*Puffinus griseus*	sf	no
	Manx Shearwater	*Puffinus puffinus*	spsf	no
	Spotted Sandpiper	*Actitis macularia*	spsfw	no
	White-rumped Sandpiper	*Calidris fuscicollis*	sfw	no
Storm-Petrels (Hydrobatidae)				
	Leach's Storm-Petrel	*Oceanodroma leucorhoa*	spsf	no
Cormorants (Phalacrocoracidae)				
	Double-crested Cormorant	*Phalacrocorax auritus*	spsfw	no
	Great Cormorant	*Phalacrocorax carbo*	spsfw	no

Family	Common Name	Scientific name	Season[a]	Rare[a]
Eagles, Hawks and Allies (Accipitridae)				
	Osprey	*Pandion haliaetus*	spsf	no
	Bald Eagle	*Haliaeetus leucocephalus*	spsfw	no
Lapwings and Plovers (Charadriidae)				
	Black-bellied Plover	*Pluvialis squatarola*	spsf	no
	Semipalmated Plover	*Charadrius semipalmatus*	sf	no
Sandpipers, Phalaropes and Allies (Scolopacidae)				
	Spotted Sandpiper	*Actitis macularius*	spsfw	no
	Ruddy Turnstone	*Arenaria interpres*	sfw	no
	Purple Sandpiper	*Calidris maritima*	spsfw	no
	White-rumped Sandpiper	*Calidris fuscicollis*	sfw	no
	Osprey	*Pandion haliaetus*	spsf	no
Auks, Murres, Puffins (Alcidae)				
	Dovekie	*Alle alle*	fw	no
	Common Murre	*Uria aalge*	spsfw	no
	Thick-billed Murre	*Uria lomvia*	spsfw	no
	Razorbill	*Alca torda*	spsfw	no
	Black Guillemot	*Cepphus grylle*	spsfw	no
	Atlantic Puffin	*Fratercula arctica*	sps	no
Gulls and Terns (Laridae)				
	Black-legged Kittiwake	*Rissa tridactyla*	spsfw	no
	Herring Gull	*Larus argentatus*	spsfw	no
	Glaucous Gull	*Larus hyperboreus*	spfw	no
	Great Black-backed Gull	*Larus marinus*	spsfw	no
	Common Tern	*Sterna hirundo*	sps	no
	Arctic Tern	*Sterna paradisaea*	sps	no
Typical Owls (Strigidae)				
	Snowy Owl[1,2]	*Bubo scandiacus*	spfw	no
	Short-eared Owl	*Asio flammeus*	spsf	no

Family	Common Name	Scientific name	Season[a]	Rare[a]
Falcons (Falconidae)				
	American Kestrel	*Falco sparverius*	sfw	no
	Merlin	*Falco columbarius*	spsf	no
	Peregrine Falcon[2,3]	*Falco peregrinus anatum*	spsfw	no
Jays and Crows (Corvidae)				
	American Crow	*Corvus brachyrhynchos*	spsfw	no
	Common Raven	*Corvus corax*	spsfw	no
Larks (Alaudidae)				
	Horned Lark	*Aremophila alpestris*	spsfw	no
Wagtails and Pipits (Motacillidae)				
	American Pipit	*Anthus rubescens*	spsfw	no
Sparrows and Allies (Emberizidae)				
	Savannah Sparrow	*Passerculus sandwichensis*	spsf	no

[a] Seasonality and rarity in insular Newfoundland based on Mactavish, B; J. E. Maunder; W. A. Montevecchi; J. L. Wells; and D. A. Fifield. 2003. Checklist (2003) of the birds of insular Newfoundland and its continental shelf waters. The Natural History Society of Newfoundland and Labrador, Inc. St. John's, NL.

[1] Species is listed as Special Concern under the Canada *Species at Risk Act*
[2] Species is listed as Vulnerable under the Newfoundland and Labrador *Endangered Species Act*
[3] Species is listed as Threatened under the Canada *Species at Risk Act*

Sheena Roul

APPENDIX B - Summary of Regulations

Legislation guiding the establishment and management of Seabird Ecological Reserves provides direction on the management and protection of these areas.

In Lawn Bay Ecological Reserve a person can:

- Engage in commercial fishing
- Engage in recreational boating and fishing up to within 100 m of islands in the Reserve
- Land a boat and visit Colombier and Swale Islands between November 1 and March 14
- Take photographs, video or sound recordings (a permit may be required)
- Bird watch up to within 100 m of islands in the Reserve

As per the *Wilderness and Ecological Reserves Act* and the *Seabird Ecological Reserve Regulations*, in Lawn Bay Ecological Reserve, a person shall not:

1. Remove, damage or destroy an animal (with the exception of fishing with a valid license), plant, fossil, or other natural object.
2. Introduce plants or animals or any other organism except under permit.
3. Carry out agriculture, mining, prospecting or claims staking.
4. Construct a road, path, building, fence or other structure.
5. Land a boat in the Reserve during the March 15-October 30 breeding period without a permit from Parks and Natural Areas Division.
6. Land an aircraft without a permit from Parks and Natural Areas Division.
7. Remove sand, soil, stone or gravel except under permit from Parks and Natural Areas Division.
8. Damage or remove a sign or other government property.
9. Operate a commercial or non-commercial enterprise, except guiding, touring, photography, videography, or sound recording, and then only with a permit from Parks and Natural Areas Division.
10. Pollute a stream or other body of water or dispose of garbage.
11. Camp, except under permit from Parks and Natural Areas Division.

The complete *Act* and *Regulations* are available online at www.env.gov.nl.ca/env/parks/wer/rules.html.

Newfoundland Labrador

2015