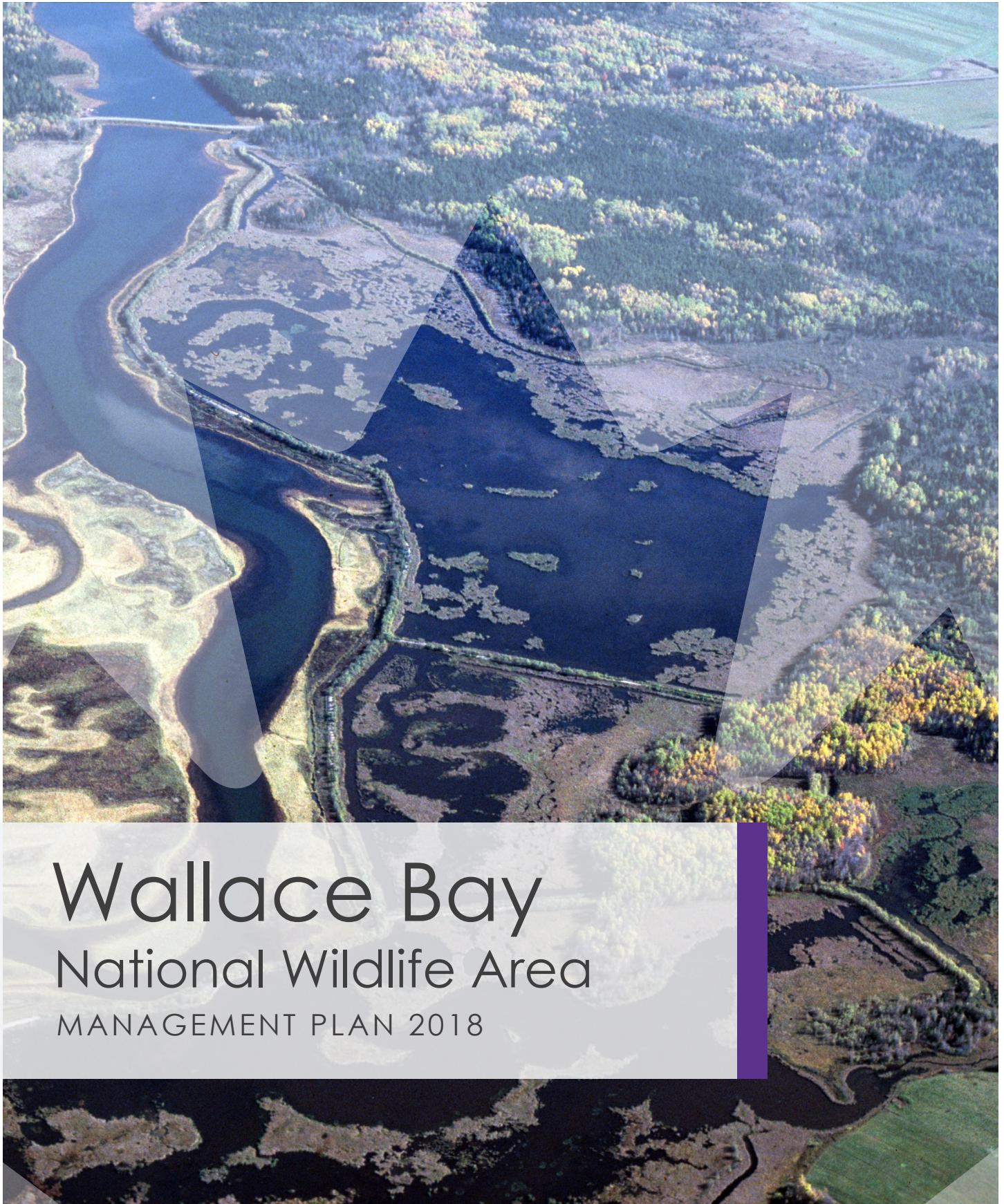




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Canada



Wallace Bay National Wildlife Area

MANAGEMENT PLAN 2018

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About Environment and Climate Change Canada's Protected Areas and Management Plans

What are Environment and Climate Change Canada Protected Areas?

Environment and Climate Change Canada establishes marine and terrestrial National Wildlife Areas for the purposes of conservation, research, and interpretation. National Wildlife Areas are established to protect migratory birds, species at risk, and other wildlife and their habitats. National Wildlife Areas are established under the authority of the *Canada Wildlife Act* and are, first and foremost, places for wildlife. Migratory Bird Sanctuaries are established under the authority of the *Migratory Birds Convention Act, 1994* and provide a refuge for migratory birds in the marine and terrestrial environment.

What is the size of the Environment and Climate Change Canada Protected Areas Network?

The current Protected Areas Network consists of 54 National Wildlife Areas and 92 Migratory Bird Sanctuaries comprising more than twelve million hectares across Canada.

What is a Management Plan?

A Management plan provides the framework in which management decisions are made. They are intended to be used by Environment and Climate Change Canada staff to guide decision making, notably with respect to permitting. Management is undertaken in order to maintain the ecological integrity of the protected area and to maintain the attributes for which the protected area was established. Environment and Climate Change Canada prepares a management plan for each protected area in consultation with First Nations, the public and other stakeholders.

A management plan specifies activities that are allowed and identifies other activities which may be undertaken under the authority of a permit. It may also describe the necessary improvements needed in the habitat, and specify where and when these improvements should be made. A management plan identifies Aboriginal rights and allowable practices specified under land claims agreements. Further, measures carried out for the conservation of wildlife must not be inconsistent with any law respecting wildlife in the province in which the protected area is situated.

What is Protected Area Management?

Management includes monitoring wildlife, maintaining and improving wildlife habitat, periodic inspections, enforcement of regulations, as well as the maintenance of facilities and other infrastructure. Research is also an important activity in protected areas; hence, Environment and Climate Change Canada staff carries out or coordinates research in some sites.

The series

All of the National Wildlife Areas administered by Environment and Climate Change Canada are to have a management plan. All of these management plans will be initially reviewed 5 years after the approval of the first plan, and every 10 years thereafter.

To learn more

To learn more about Environment and Climate Change Canada's protected areas, please visit our web site at www.ec.gc.ca/ap-pa/ or contact the Canadian Wildlife Service in Ottawa.

Wallace Bay National Wildlife Area

Wallace Bay National Wildlife Area (NWA) was established in 1980 to protect coastal waterfowl habitat. Consisting of a rich mosaic of salt and freshwater marshes fringed by an upland border, the NWA is an important staging area for ducks and geese during their spring and fall migrations. Wallace Bay NWA is located in Cumberland County, Nova Scotia at the head of Wallace Harbour, which empties into the Northumberland Strait. The low-lying and gently rolling landscape is surrounded by mixed farms that raise predominantly cattle and sheep.

The productive land at the site of Wallace Bay NWA has a long history of human use. The coastal marshes and clam flats would have been an important area for Indigenous Peoples, and Fox Island at the mouth of the bay was a favourite camping area. European settlement dates to the early 1700s, followed by the dyking of the marshlands by Acadian settlers. Farming on the drained wetlands at the site continued well into the twentieth century. Extensive use of dykes and water control structures, known as “aboiteau”, throughout the Maritime Provinces has resulted in the loss of many of the region’s productive salt marshes. Wallace Bay NWA was created in order to protect some of these remaining coastal wetlands. In addition, in collaboration with Ducks Unlimited Canada, a series of controlled water level brackish and freshwater wetland impoundments have been created over long-abandoned agricultural dykelands at the headwaters of the system.

There are no roads or buildings within Wallace Bay NWA. A parking lot and boat launch are maintained for public use. Routine inspection and maintenance of boundary lines, regulatory signs, and public access points are conducted as required. As posted in public notices on site, traditional land uses such as hunting, fishing, and trapping are permitted in the NWA in accordance with applicable federal and provincial regulations.

Co-Management

For greater certainty, nothing in this management plan shall be construed so as to abrogate or derogate from the protection provided for existing aboriginal or treaty rights of the aboriginal peoples of Canada by the recognition and affirmation of those rights in section 35 of the Constitution Act, 1982.

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1 DESCRIPTION OF THE PROTECTED AREA

Wallace Bay National Wildlife Area (NWA) is located at the headwaters of Wallace Bay and is situated immediately west of the mouth of the North Wallace River in Cumberland County, Nova Scotia (45° 50' N 63° 34' W). This NWA is composed of a rich diversity of habitats in a comparatively small area, from a progression of salt marsh, brackish marsh and controlled water level freshwater marshes to an upland border of forests and open lands (Figures 1 and 2).

The NWA is divided into two segments by a road and an adjacent tide gate, or aboiteau. This water control structure protects approximately 250 hectares (ha) of predominantly freshwater wetlands on the western side of the roadway including wooded swamp, freshwater impoundments, semi-tidal marshes, and river channel. On the harbour side of the aboiteau, the NWA is comprised of approximately 195 ha of salt marsh, tidal channels and impoundments. These saltwater wetlands are bordered by a mosaic of approximately 140 ha of uplands comprising mixed coniferous and deciduous forests, old fields in the early stages of plant succession, and agricultural lands.

This coastal site is an important staging and migration area for waterfowl and other wetland obligate birds. Wallace Bay NWA is managed by the Canadian Wildlife Service of Environment and Climate Change Canada and is classified as an International Union for Conservation of Nature (IUCN) Category VI protected area. IUCN classification is based on management objectives, and Category VI conserves ecosystems and habitats focusing on maintaining the sustainable use of natural resources.

Lands at Wallace Bay were purchased between 1971 and 1973 from private interests by the Government of Canada, and the site was declared a National Wildlife Area on June 5th, 1980. Wallace Bay NWA is administered under the *Wildlife Area Regulations* of the *Canada Wildlife Act*.

Table 1: Wallace Bay National Wildlife Area Summary Information

Protected area designation	National Wildlife Area
Province or territory	Nova Scotia
Latitude and longitude	45° 50' N 63° 34' W
Size (ha)	585 ha
PA designation criteria	Historic: Protecting an area with concentrations of birds. Current: Meets criteria 1(a), where “the area supports a

	population of a species or a subspecies or a group of a species which is concentrated, for any portion of the year". The area also satisfies criteria 2(b), where "the area has special value for maintaining the genetic and ecological diversity of a region because of the quality and uniqueness of its flora and fauna".
PA classification system	<i>Reference: PA Manual Appendix 8.</i>
International Union for Conservation of Nature (IUCN) classification	VI
Order in Council number	PC 1980-1479
Directory of Federal Real Property (DFRP) number	DFRP number 03217
Gazetted	June 5, 1980
Additional designations	None
Faunistic and floristic importance	The area contains significant coastal wetlands, including both freshwater and saltwater marshes, and is an important area for waterfowl and wetland birds. A high diversity of habitats occurs within a small area.
Invasive species	Localized Norway Maple (<i>Acer platanoides</i>) occurs at abandoned house sites.
Species at risk	Few species at risk have been recorded. Peregrine falcon is likely the only known common fall visitor (see Section 2.3).
Management agency	Canadian Wildlife Service
Public access & use	Access to Wallace Bay NWA is permitted for activities such as wildlife observation, photography, berry picking (non-commercial), hiking and canoeing. Hunting, fishing, and trapping (predominantly of muskrat) are allowed as authorized by posted notices at the entrance of the NWA and in accordance with applicable federal and provincial regulations. A public parking lot and boat launch is situated on the Aboiteau Road; use of watercraft under 10.0 horsepower is allowed.
Other appropriate information	Boaters must exercise caution if operating near the tide gate under Aboiteau Road, the public road that bisects the NWA. Check the tides.



Figure 1: Wallace Bay National Wildlife Area

Photo: R. J. Hicks © Environment and Climate Change Canada, Canadian Wildlife Service

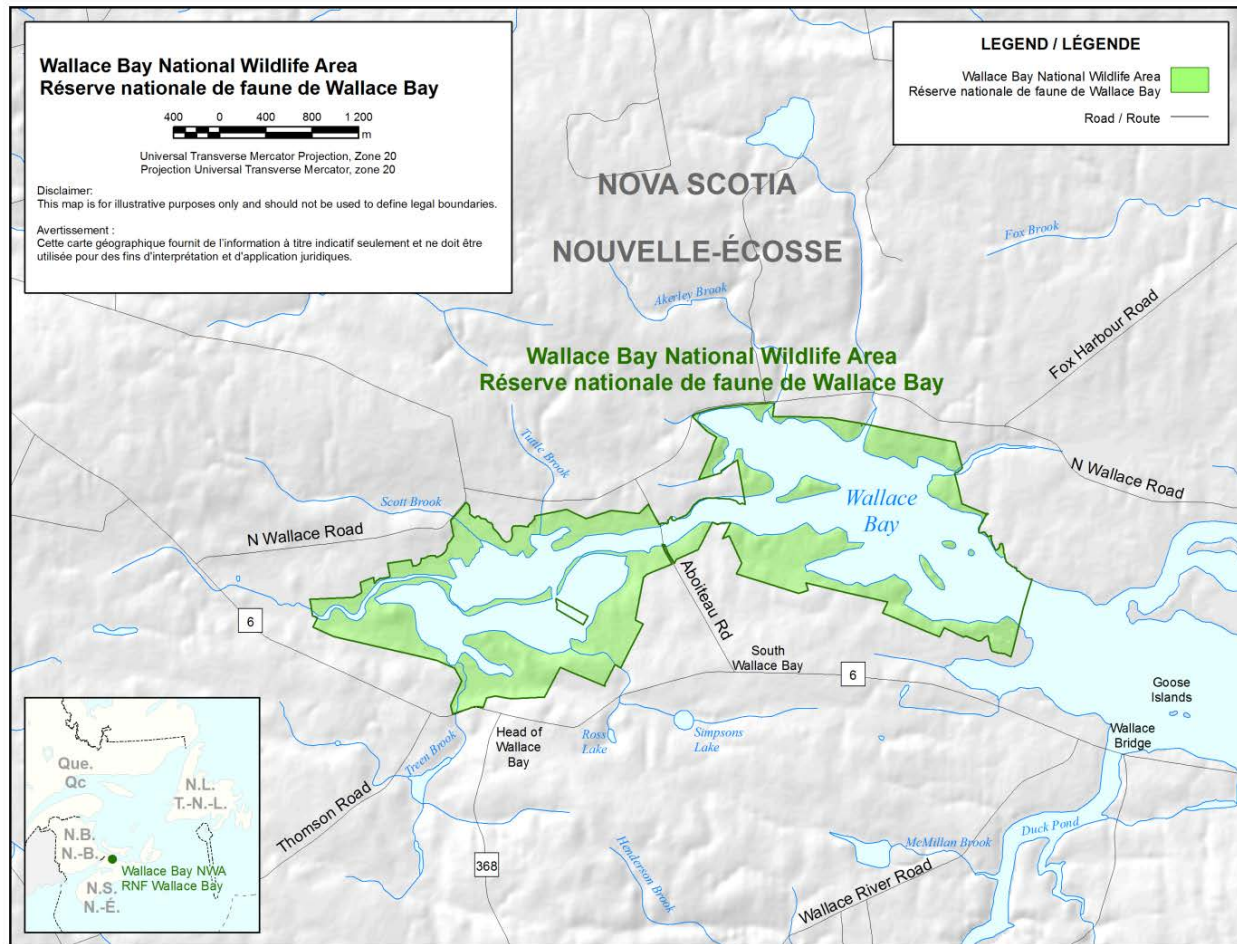


Figure 2: Wallace Bay National Wildlife Area

1.1 REGIONAL CONTEXT

Wallace Bay NWA is an elongated 585 ha parcel of land, with irregular borders, situated at the headwaters of Wallace Bay in Cumberland County, Nova Scotia (Barkhouse 1980). The NWA lies within the Atlantic Maritime ecozone, one of fifteen terrestrial ecozones in Canada. The Atlantic Maritime ecozone includes all of New Brunswick, Prince Edward Island, Nova Scotia and Quebec's Gasp   Peninsula. Within this ecozone, the NWA is situated within the Maritime Lowlands ecoregion and the Pictou-Cumberland Lowlands Ecodistrict (Webb and Marshall 1999) (Figure 3).

In the classification system of the province of Nova Scotia, the NWA is also part of the Northumberland Bras d'Or Lowlands ecoregion and the Northumberland Lowlands Ecodistrict (Neily *et al.* 2003). This region is characterized as having a low elevation seldom greater than 50 m, and one of the best growing climates in Nova Scotia. The waters of the Northumberland

Strait help moderate temperatures, delaying the onset of frost for a few weeks. The mean annual precipitation is comparatively low for the province, at 1128 mm; areas along the coast may be somewhat drier than inland (Neily *et al.* 2003).

The underlying geography consists of Carboniferous sediments of red sandstone with occasional deposits of gypsum and salt (Roland 1982). The closest commercial mining operation is the Canadian Salt Co. Ltd, situated 5 km west of the NWA near the village of Pugwash (Neily *et al.* 2003).

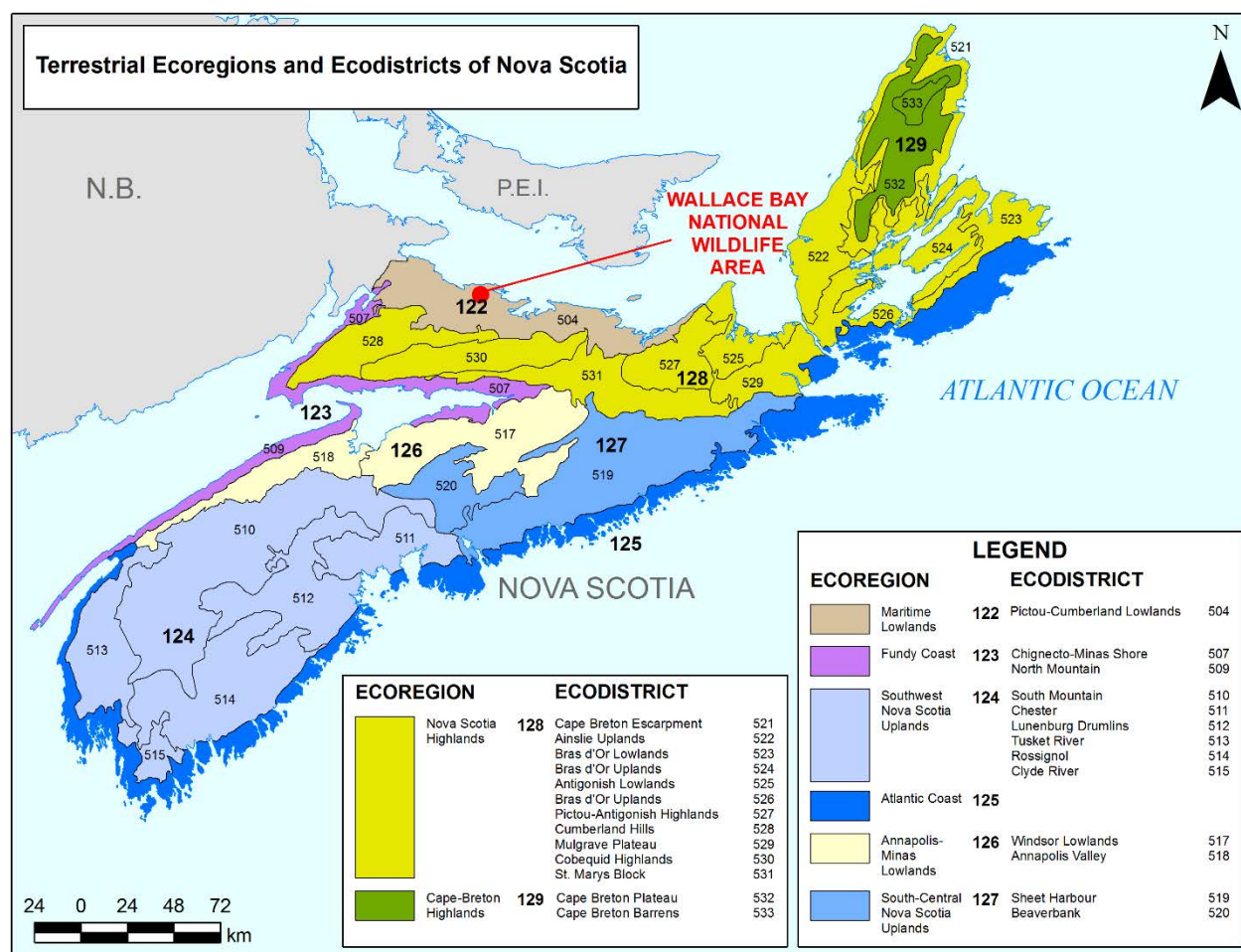


Figure 3: Terrestrial Ecoregions and Ecodistricts of Nova Scotia (Webb and Marshall 1999). Wallace Bay National Wildlife Area falls within Ecoregion 122 (Maritime Lowlands) and Ecodistrict 504 (Pictou-Cumberland Lowlands).

1.2 HISTORICAL BACKGROUND

The Wallace Bay area was once known as the Remsheg; the name is apparently derived from a Mi'kmaq word meaning "the place between" (Brown 1973). The area was

undoubtedly important to the Mi'kmaq for its productive coastal waters rich in waterfowl, shellfish, and anadromous fish such as Gaspereau (*Alosa pseudoharengus*) and Blueback Herring (*Alosa aestivalis*).

Acadians established a small settlement at Wallace Harbour around 1710 and reclaimed the coastal marshes from the sea. Following the Acadian expulsion of 1755, the lands around Wallace Bay were resettled by United Empire Loyalists from New York in 1784. Much of the area they settled was included in what is called the “Remsheg Grant” (Brown 1973). Many of the names of families that settled the “Remsheg Grant” can be found on the Church map of circa 1873 (Figure 4); a number of the settlers’ descendants still have a strong attachment to the land and occupy these same farms today.

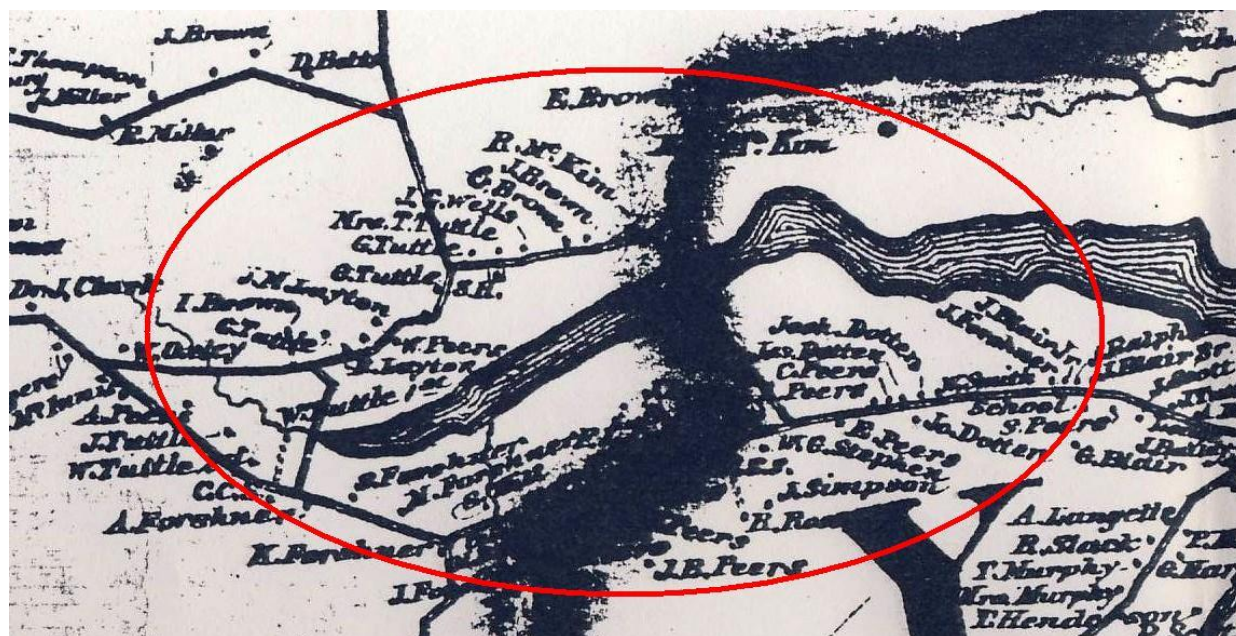


Figure 4: Head of Wallace Harbour, circa 1873; the present general location of the Wallace Bay National Wildlife Area is circled. From a portion of a map of Cumberland County, Nova Scotia
Photo: Ambrose F. Church © circa 1873

By the mid- to late 1800s, the dyked and drained reclaimed marshland produced very valuable hay crops. These low lying lands were suitable for horse-drawn hay making equipment, and the sale of this crop made an important contribution to the area's economy throughout the late nineteenth century. Hay farming continued for several years into the 20th century, but increased mechanization and a reduced labour force eventually resulted in less land being used. There were continued attempts to hold back the sea at the aboiteau into the beginning of the twentieth century (Figure 5). However, by the end of World War II, marginal lands and the marshlands were almost totally abandoned except for some pasture (Brown 1973).



Figure 5: Work crew on the Wallace Bay aboiteau at “the narrows”, circa 1910 (photograph courtesy Betty Brown, Wallace Bay, Nova Scotia)

Today a provincial roadway and aboiteau divides Wallace Bay NWA into two roughly equal components of freshwater and saltwater wetlands. The aboiteau functions as a one-way tide gate, stopping the inflow of tidal waters from entering the predominantly freshwater wetlands west of the divide, while permitting the outflow of freshwater. The first structure at the aboiteau site, which was then known as “the narrows”, was built in 1838. Over the years, and as recently as 1984, major repairs and replacements have been necessary to maintain the tide gate. Starting in 1973 with the cooperation of Ducks Unlimited Canada (DUC), 138 ha of long-abandoned farmland, predominantly on the freshwater side of the aboiteau, was reverted to freshwater marsh through the building of dykes and water control structures (Ducks Unlimited Canada and Canadian Wildlife Service, 1989).

The tidal portion of the Wallace Bay channel provided the area’s inhabitants with fish and shellfish, principally smelt, gaspereau and oyster. Gaspereau and oyster are presently commercially harvested. There is a 2.2 ha aquaculture lease (site number 0331) within the Wallace Bay channel administered by the Nova Scotia Department of Fisheries and Aquaculture.

Most of the 134 ha of upland within the NWA, largely bordering the south side of the NWA, was cleared for farmland following the 1784 settlement of the Wallace Bay area. Traces

of the locations of eight former homesteads, a store, and a mill site can be found within the boundary of the NWA (Brown 1973). All of these features were abandoned well before the establishment of the NWA.

1.3 LAND OWNERSHIP

The majority of the uplands and wetlands gazetted as the Wallace Bay NWA are owned by the Government of Canada. The property boundaries of these coastal parcels follow the mean high water mark (normal tide). Lands under tidal waters within the NWA are owned by the province of Nova Scotia.

The NWA includes 10 ha of agricultural upland that is maintained in pasture, hay, and grain crops by neighbouring farmers. This is a continuation of traditional land use and allows for the maintenance of an agroecosystem for the benefit of those species that utilize waste grain as well as for grassland nesting birds. These activities are authorized through permits issued under the authority of the *Wildlife Area Regulations*.

The federal government does not hold the sub-surface mineral rights for Wallace Bay NWA (Figure 6).



Figure 6: Pre-acquisition photograph of the Wallace Bay National Wildlife Area, circa 1966

Photo: File photo © Environment and Climate Change Canada, Canadian Wildlife Service

1.4 FACILITIES AND INFRASTRUCTURE

There are no roads or buildings within Wallace Bay NWA. A public parking area and boat launch is maintained on the southwest side of the Aboiteau Road causeway, providing access to the freshwater impoundments and channel. The use of outboard motorboats less than 10.0 horsepower is allowed, and off-road vehicles are prohibited. Regular maintenance visits include site inspections and repairs and replacement of regulatory signage (including boundary, public notice, and 2' x 4' NWA identification signage) (Table 2).

The largest single infrastructure within the NWA is the system of dykes and control structures maintained by Ducks Unlimited Canada in cooperation with the Canadian Wildlife Service (Table 3).

Table 2: Facilities and Infrastructure in the Wallace Bay National Wildlife Area

Type of Facility or Infrastructure	Approximate Size or Number	Responsibility Holder or Owner
Property boundary	20.9 km	CWS – ECCC
Boundary signs	300	CWS – ECCC
NWA identification signs	1	CWS – ECCC
Public notice signs	10	CWS – ECCC
Trails (unimproved)	3.7 km	CWS – ECCC
Foot bridges	3	CWS – ECCC
Boat landing	1	CWS – ECCC
Parking lot (1)	900 m ²	CWS – ECCC
Maintenance access points	(2)	CWS – ECCC
Impoundments/projects (7)*	186.5 ha	Ducks Unlimited Canada
Control structures	7	Ducks Unlimited Canada

* Ducks Unlimited Canada and Canadian Wildlife Service

Table 3: Controlled Water Level Projects Maintained by Ducks Unlimited Canada in the Wallace Bay National Wildlife Area

Project Number	Project Name	Year Built	Size: (ha)	Level of Marsh (feet) ¹	Maximum Operating Level (feet) ¹	Normal Operating Level (feet) ¹
6144	1	1973	52.6	0.2	4.0	1.7
6145	2A	1973	44.5	0.2	2.8	1.2
6145	2B	1973 (cross dyke 1979)	8.9	0.3	2.7	2.7
6145	2C	1973 (subdivided from 2A in 1988)	9.7	0.3	2.8	1.1
6152	3A	1974	18.2	3.2	5.5	3.9
6152	3B	1978	4	3.6	5.5	5.3
6190	Natural Marsh	1977	48.6	-	-	-
TOTAL			186.5			

¹ Canadian Geodetic Vertical Datum 1928 (CGVD28); elevation above sea level.

2 ECOLOGICAL RESOURCES

2.1 TERRESTRIAL AND AQUATIC HABITATS

The uplands and low-lying wetlands of Wallace Bay NWA support unusually high plant diversity for a site of this size in the region (Blaney *et al.* 2011). Wallace Bay NWA contains 472 vascular plant species, including 373 native and 99 non-native species. Surprisingly, there are relatively few rare plants: only eight species are provincially listed.

When lands for the National Wildlife Area were acquired by the Canadian Wildlife Service between 1971 and 1973, most of the marshlands reclaimed for farming were a composite of ponds, marsh and swamp, with little evidence of the site's former agricultural importance. The vegetation is comprised of several species, including Meadowsweet (*Spiraea latifolia*), Broad-leaf (*Spartina pectinata*), Blue-joint (*Calamagrostis canadensis*), Round-stem Bulrush (*Scirpus validus*), Woolgrass (*Scirpus cyperinus*), Wild Rose (*Rosa virginiana*), and Speckled Alder (*Alnus rugosa*) (Whitman 1966).

Following construction of controlled water level impoundments (in collaboration with Ducks Unlimited Canada), these shallowly-flooded freshwater wetlands provide an interspersed of open water and emergent vegetative cover. The emergent vegetation in these habitats consists largely of cattail (*Typha* spp.) and Burreed (*Sparganium eurycarpum*), while submerged and floating aquatics include duckweed (*Lemna minor*) and pondweeds (*Potamogeton pusillus* and *P. epihydus*).

The extensive salt marsh extending along both sides of the tidal channel east of the Aboiteau Road is primarily a "high" salt marsh that is not typically flooded daily by the tides and was the area once targeted for dyking by early settlers. The principal plant species in this habitat is salt-marsh hay (*Spartina patens*). Lower sections throughout the marsh, and along tidal creeks, support cord grass (*Spartina alterniflora*). Salt marsh pools that provide habitat for small fish are located throughout the tidal wetlands.

Forest habitat in the NWA consists of 100 ha of a mixture of deciduous and coniferous species, including Trembling Aspen (*Populus tremuloides*), Red Maple (*Acer rubrum*), White Birch (*Betula papyrifera*), Wire Birch (*Betula populifolia*), Balsam Fir (*Abies balsamea*), and Spruce (*Picea* spp.). A 5 ha island located within the salt marsh has a forest cover consisting of mature Red Oak (*Quercus borealis*), Large-toothed Aspen (*Populus grandidentata*), and White

Pine (*Pinus strobus*). This small island is a remnant of what was probably a more common forest type along the coast.

The NWA includes 10 ha of agricultural upland that is used by local farmers under a permit. An additional 14 ha of old field is in the early stages of succession and consists of several species of grasses, herbaceous plants, shrubs and young trees.

For a complete list of plants found within Wallace Bay NWA, see Malone 1978, Spicer and MacKinnon 1998, and Blaney *et al.* 2011.

2.2 WILDLIFE SPECIES

2.2.1 Birds

Nine species of waterfowl regularly breed at Wallace Bay NWA, including Green-winged Teal (*Anas crecca*), Black Duck (*Anas rubripes*), Mallard (*Anas platyrhynchos*), Northern Pintail (*Anas acuta*), Blue-winged Teal (*Spatula discors*), Northern Shoveler (*Spatula clypeata*), American Wigeon (*Mareca americana*), Ring-necked Duck (*Aythya collaris*), and Hooded Merganser (*Lophodytes cucullatus*). Broods of Wood Duck (*Aix sponsa*) as well as the less common Redhead (*Aythya americana*) have also been recorded. Of interest, the first Redhead brood was reported in 1979, and during three of the next five years broods were observed in the NWA.

The present importance of Wallace Bay NWA to breeding waterfowl is largely the result of the wetland development and habitat improvements undertaken since 1972 by Ducks Unlimited Canada in cooperation with the Canadian Wildlife Service. These wetlands currently support 70–80 duck broods per year. Wetlands in the NWA also provide important staging and migration habitat for waterfowl. Numbers of waterfowl steadily increase after about the middle of July with the arrival of post-breeding adults and young of the year. Peak numbers of over 1,000 birds occur around the middle of September. The principal migrant and staging waterfowl at Wallace Bay NWA are Canada Goose (*Branta canadensis*), Green-winged Teal, Black Duck, and Blue-winged Teal. Other species, including American Wigeon, Ring-necked Duck, Hooded Merganser and Common Merganser (*Mergus merganser*) also commonly occur in smaller numbers. Small numbers of Greater Scaup (*Aythya marila*) occur in late fall (Table 4).

Table 4: Maximum Daily Number of Waterfowl Observed in Wallace Bay National Wildlife Area (ECCC/CWS file records)

Waterfowl species	Maximum Number Observed
Black Duck	600
Canada Goose	500
Green-winged Teal	250
Blue-winged Teal	200
Ring-necked Duck	100
American Wigeon	50
Common Merganser	100
Hooded Merganser	75
Greater Scaup	50

The wetlands within Wallace Bay NWA are of importance to a diversity of other marsh birds. Common Snipe (*Gallinago gallinago*), Sora (*Porzana carolina*), and Pied-billed grebe (*Podilymbus podiceps*) are frequently seen in the freshwater wetlands. American Bittern (*Botaurus lentiginosus*) and Long-billed Marsh Wren (*Cistothorus palustris*) are present but less often observed (Cash *et al.* 1981). The COSEWIC designated as “threatened” Least Bittern (*Ixobrychus exilis*) was recorded within impoundment No. 1 in 1981 (Cash *et al.* 1981; Erskine 1992).

2.2.2 Mammals

Most of the land mammals commonly found in Nova Scotia are expected to occur at Wallace Bay NWA (Banfield 1974; Gilhen and Scott 1981; Dawe 2004). Nearly all of the typical larger mammals are present. Muskrat (*Ondatra zibethicus*) is probably the most abundant and noticeably visible species within the wetlands. Five species of small mammals have been recorded: Masked Shrew (*Sorex cinereus*), Maritime Shrew (*Sorex maritimensis*), Short-tailed Shrew (*Blarina brevicauda*), Deer Mouse (*Peromyscus maniculatus*), and Meadow Vole (*Microtus pennsylvanicus*). An additional five small mammal species are expected to occur based on the available habitat (Dawe 2004).

2.2.3 Reptiles and Amphibians

The amphibian and reptile fauna likely comprise most of the species that commonly occur in the region. Although a detailed inventory has not been conducted, the following six species are frequently encountered: Green Frog (*Rana clamitans*), Northern Spring Peeper (*Hyla crucifer*), Yellow Spotted Salamander (*Ambystoma maculatum*), Bullfrog (*Rana catesbeiana*), Mink Frog (*Rana septentrionalis*), and Maritime Garter Snake (*Thamnophis*

sirtalis pallidulus). An additional nine species may potentially occur within the NWA (Brannen 2001).

2.2.4 Fish

Nine fish species are documented for Wallace Bay NWA, but other marine fish undoubtedly occur. Gaspereau (Alewife – *Alosa pseudoharengus*) and American Eel (*Anguilla rostrata*) are harvested commercially with nets set in the tidal channel near the aboiteau. The numerous tidal creeks and salt marsh pools support typical brackish and salt water species such as Banded Killifish (*Fundulus majalis*), Ninespine Stickleback (*Pungitius pungitius*), and Fourspine Stickleback (*Apeltes quadracus*), all important food fish for a variety of wildlife.

2.3 SPECIES AT RISK

There are seven COSEWIC-listed “threatened” species and one listed as “endangered” (Red Knot) that potentially could be observed in Wallace Bay NWA. An additional 39 species have, or have previously had, some level of provincial concern.

Few species at risk as listed under the *Species at Risk Act* (SARA) have been recorded within the Wallace Bay NWA. Some, like the Peregrine Falcon, likely visit the area on occasion; others, such as the threatened Least Bittern, which prefers dense stands of cattail, may find suitable habitat within the NWA (Table 5).

Table 5: Species at Risk in Wallace Bay National Wildlife Area

Common and Scientific Names of Species	Status			Presence or Potential of Presence ⁴
	Canada		Nova Scotia	
	SARA ¹	COSEWIC ²	Provincial Ranking ³	
Birds				
Barn Swallow <i>Hirundo rustica</i>	No Status	Threatened	Endangered (2013)	probable
Bobolink <i>Dolichonyx oryzivorus</i>	No Status	Threatened	No Status	probable
Chimney Swift <i>Chaetura pelagica</i>	Threatened	Threatened	Endangered (2007)	probable
Common Nighthawk <i>Chordeiles minor</i>	Threatened	Threatened	Threatened (2007)	probable
Least Bittern <i>Ixobrychus exilis</i>	Threatened	Threatened	No Status	confirmed

Common and Scientific Names of Species	Status			Presence or Potential of Presence ⁴
	Canada		Nova Scotia	
	SARA ¹	COSEWIC ²	Provincial Ranking ³	
Peregrine Falcon <i>Falco peregrinus anatum</i>	Special Concern	Special Concern	Vulnerable (2007)	confirmed
Short-eared Owl <i>Asio flammeus</i>	Special Concern	Special Concern	No Status	potential

1. *Species at Risk Act*: Extinct, extirpated, endangered, threatened, special concern, not at risk (assessed and deemed not at risk of extinction) or no status (not rated)
2. Committee on the Status of Endangered Wildlife in Canada: the same names as the SARA status
3. Provincial Ranking using provincial codes, if applicable
4. List as 'confirmed', 'probable', or 'potential'

2.4 INVASIVE SPECIES

Some scattered Norway maple (*Acer platanoides*) near some old house sites in the NWA may present a problem, as they have the potential to competitively exclude native plant species. Periodic botanical surveys assist in monitoring expansion of species such as Norway Maple and identifying new potential species of concern. The other 97 species of non-native plants are not considered invasive.

Although not recorded within the immediate waters of the NWA, the invasive European Green Crab (*Carcinus maenas*) was reported in the nearby harbour of Wallace Bay in 2001. This species competes with existing fauna and is detrimental to the shellfish industry, eelgrass and native fauna (Seymour *et al.* 2002, Klassen and Locke 2007).

3 MANAGEMENT CHALLENGES AND THREATS

A number of potential issues pertaining to the management of the Wallace Bay NWA are outlined below. Some stressors are external to the NWA but may have a negative impact on the site's overall value to wildlife.

3.1 TOURISM

The Wallace Bay NWA is a Category VI protected area, set aside to protect habitat and benefit wildlife together with management and sustainable use of its natural resources. Ever-increasing ecotourism, while often providing valuable education opportunities to the public, adds additional pressures to protected areas. The blurring of the lines between ecotourism and adventure tourism adds to the problem of cumulative environmental effects. As local communities and businesses try to attract tourism dollars, public lands and protected areas such as Wallace Bay NWA are sometimes advertised as destinations by external interests, often without a full understanding of the regulations protecting NWAs. Visitors to sites such as Wallace Bay NWA may not always understand the distinctions between a park and an NWA. Invariably, any concession to improving public use and public access, that eventually prove to be to the detriment of wildlife and their habitat, are not easily retracted once made. Although the current level of visitation is not likely causing significant habitat damage, tourism activity during the breeding season could cause a disturbance to nesting birds. It is then important to monitor the number of visitors and verify that, in the event of a steady increase of their number, they still do not pose a threat to the NWA wildlife and habitats. The objective is to manage visitation, allowing Canadians to connect to nature, without jeopardizing the goals of the NWA.

3.2 ADJACENT LAND USE

Wallace Bay NWA has few "road front" boundaries and is mainly bordered by private woodlands and farmlands. As the NWA is comparatively small, legitimate land use on these adjacent parcels, depending on the types of crops in production or the extent of forestry operations, may have an indirect impact on the NWA through eutrophication, sedimentation, and potential habitat loss. These threats are monitored annually using aerial photography, and as of 2016 there is no evidence of concern. Forestry operations, particularly clear-cutting, may result in adjacent forest stand loss due to wind damage. Upland farms have associated issues such as potential run-off from pesticide and herbicide applications, and soil erosion from fields and livestock waste management.

3.3 RURAL DEVELOPMENT

Following the establishment of the Fox Harbour Golf Resort and Spa just 8 km northeast of the NWA (an important driving force to the local economy), there has been an increase in coastal development in the Wallace Bay area. This has stimulated the building of more summer cottages and year-round homes on the coast, followed by a subsequent rise in land values, higher property taxes and domestic demands such as waste management and potable water. This development coincides with an increase in public use of the NWA, and raises concerns for the NWA such as illegal off-road vehicle use and small-scale land encroachments. The installation of trail counters will provide the number of people visiting Wallace Bay NWA and will help monitor this increase.

3.4 COASTAL EROSION AND HABITAT LOSS

Wallace Bay NWA is generally protected from the most severe storms due to its location at the headwaters of Wallace Harbour. However, predicted sea-level rise could result in erosion of the expansive salt marshes within Wallace Bay. As the uplands rise quickly in elevation around the existing wetlands, loss of salt marsh along the coast is unlikely to be matched by gains at the salt marsh–upland interface.

3.5 HABITAT FRAGMENTATION

The irregular boundary of the Wallace Bay NWA is detrimental to the administration and ecological integrity of the site. Efforts should be made to acquire key parcels bordering the NWA that provide biological or administrative efficiencies to the site. Where feasible, lands between the existing boundary and definable features, such as roads, should be secured. Such acquisitions would be made only from willing vendors at market value, appraised at highest and best use.

3.6 DAMS AND WATER MANAGEMENT

Seven water control structures occur in Wallace Bay NWA (Table 3). These structures are intended to control water for the purpose of improving habitat for migratory waterfowl and other wildlife. The first of these structures, project name 6144-1, was built in 1972 and enhanced in 1996. Project name 6145-2A was built in 1973, project name 6145-2B in 1996 and project name 6145-2C in 1978. Project name 6152-3A was originally built in 1973 and rebuilt in 2012. Project name 6152-3B was built in 1997. Project name 6190 was built in 1983 and consists of a large steel culvert through a paved government road with a tide gate. Environment

and Climate Change Canada staff continues to work with Ducks Unlimited Canada to find resources to manage these structures and carry out repairs when necessary.

4 GOALS AND OBJECTIVES

4.1 VISION

The long-term vision for Wallace Bay NWA is wildlife conservation: the NWA provides marine and freshwater wetlands for many species of marsh-dependent wildlife, and is particularly important for migrant and nesting waterfowl.

4.2 GOALS AND OBJECTIVES

Wallace Bay NWA was established to protect coastal waterfowl habitat consisting of a rich mosaic of salt and freshwater marshes fringed by an upland border. The NWA is an important staging area for ducks and geese during their spring and fall migrations. This goal was in accordance with the document “A Wildlife Policy for Canada”. This policy stated that the goal for an NWA was:

“... to maintain and enhance the health and diversity of Canada’s wildlife, for its own sake and for the benefit of present and future generations.”

Wallace Bay NWA is classified by the International Union for the Conservation of Nature (IUCN) as a category VI protected area. The NWA is protected and managed for the sustainable use of a natural ecosystem; however the NWA is not actively promoted as an ecotourism destination. As portions of this NWA consist of significant areas of controlled water level impoundments, the habitat within these sites will be actively managed for breeding waterfowl and waterbirds production. While the NWA includes 10 ha of agricultural upland that is maintained in pasture, hay, and grain crops by neighbouring farmers under permit, no other commercial activities are permitted. Public visitation is allowed, although not promoted. Some renewable and traditional land uses, such as hunting, fishing, and trapping, are allowed subject to applicable federal and provincial permits.

The primary management goal for Wallace Bay NWA is to ensure that the quantity, quality and variety of wetland habitats, important to waterfowl and wetland birds and other wildlife are maintained and protected from outside disturbances such that the potential for natural biological processes are maximised. To ensure that this goal is attained, more specific goals and objectives are in place so that the area will be managed to maintain its long-term natural productivity, by maintaining or enhancing the quantity, quality, and diversity of habitats while permitting non-conflicting human use. Specific goals and objectives are as follows:

Goal 1: Forest habitat will be managed to maintain populations of forest birds.

Objective:

1.1 Manage the existing 100 ha of forested habitats so that the NWA contains large contiguous areas of mature Acadian Forest.

1.2 Acquire by fee simple purchase, lands within proposed boundaries of the existing National Wildlife Area.

Goal 2: Wetland habitats will be managed to provide habitat for migratory birds including waterfowl, waterbirds, and marshbirds.

Objectives:

2.1 Manage the six controlled water level impoundments (138 ha) comprising fresh and brackish water wetlands for optimal use by a broad spectrum of native species. Maintain open water and vegetation at a 50:50 ratio (with patches of vegetation interspersed with areas of shallow open water), with a high degree of interspersed and plant species diversity.

2.2 Retain the 104 ha of salt marshes in their natural state and, where possible, protect these wetlands from exterior influences such as surface water induced eutrophication and sea-level rise.

2.3 Acquire by fee simple purchase, lands adjacent to the boundaries of the existing National Wildlife Area.

Goal 3: Grassland habitats will be managed to provide habitat for migratory birds including bobolink and aerial insectivores.

Objective:

3.1 Grasslands are maintained by periodic mowing conducted outside of the nesting season.

Goal 4: Human activities that have negative impacts on the habitat or the wildlife of Wallace Bay NWA are minimized.

Objectives:

4.1 Control unauthorized and prohibited activities in the NWA.

4.2 Inform visitors of NWA regulations and educate the public in the value of habitat protection and the primary mandate of NWAs being protection of wildlife.

4.3 Provide and maintain a safe entry point and boat launch to facilitate authorized public use.

4.4 Mitigate potential impacts of commercial activities in the vicinity of the NWA.

4.3 EVALUATION

Annual monitoring will be performed within the limits imposed by the availability of financial and human resources. The management plan will be reviewed five years after its initial approval and reviewed and updated every ten years thereafter. The evaluation will take the form of an annual review of monitoring data obtained from the monitoring and research projects outlined below. This monitoring will be used to establish priorities for action and to allocate resources.

5 MANAGEMENT APPROACHES

This section contains a description of some of the possible approaches that could be used in the management of the Wallace Bay National Wildlife Area. Management actions will be determined during the annual work planning process and will be implemented as human and financial resources allow.

Table 6: Management Approaches for Wallace Bay National Wildlife Area

Management Challenges & Threats	Goals and Objectives	Management Approaches (actions, including level of priority) ¹
Habitat loss from deterioration of the conditions is challenging the NWA.	Goal 1: Forest habitat will be managed to maintain populations of forest birds. Objective 1.1: Manage the existing 100 ha of forested habitats so that the NWA contains large contiguous areas of mature Acadian Forest.	<ul style="list-style-type: none"> • Allowing natural succession processes to occur on the NWA. (3)
	Goal 3: Grassland habitats will be managed to provide habitat for migratory birds including bobolink and aerial insectivores. Objective 3.1: Grasslands are maintained by periodic mowing conducted outside of the nesting season.	<ul style="list-style-type: none"> • Allowing natural succession processes to occur on the NWA as well as potential activities such as periodic mowing. (1)
Tourism activities, some activities being illegal within the NWA, such as off-road vehicle use and large-horsepower boating, may become a cumulative environmental affect. The growing public use of the NWA increases expectations of more public facilities; the public frequently assumes the NWA to be a park rather than habitat set aside for wildlife.	Goal 4: Human activities that have negative impacts on the habitat or the wildlife of Wallace Bay NWA are minimized. Objective 4.1: Control unauthorized and prohibited activities in the NWA. Objective 4.2: Inform visitors of NWA regulations and educate the public in the value of habitat protection and the primary mandate of NWAs being protection of wildlife. Objective 4.3: Provide and maintain a safe entry point and boat launch to facilitate	<ul style="list-style-type: none"> • Maintain the public parking area and boat launch for public use. Conduct periodic site inspections. (1) • Provide educational material on wildlife viewing, viewing ethics, and impact of cumulative environmental effects. (1) • Report illegal use of off-road vehicles to Wildlife Enforcement Division. (1) • Maintain signage, particularly public notice and boundary signs. (1) • Install trail counters allowing to monitor the number of visitors (2)

Management Challenges & Threats	Goals and Objectives	Management Approaches (actions, including level of priority) ¹
	<p>authorized public use.</p> <p>Objective 4.4: Mitigate potential impacts of commercial activities in the vicinity of the NWA.</p>	<ul style="list-style-type: none"> • Communicate with local businesses concerning the protected status of Wallace Bay NWA and the importance of minimal disturbance of habitat and wildlife. (1)
<p>Forestry and farming operations around the NWA may have impacts such as adjacent forest stand loss and potential run-off and soil erosion from fields.</p>	<p>Goal 1: Forest habitat will be managed to maintain populations of forest birds.</p> <p>Objective 1.1: Manage the existing 100 ha of forested habitats so that the NWA contains large contiguous areas of mature Acadian Forest.</p> <p>Objective 1.2: Acquire by fee simple purchase, lands within proposed boundaries of existing NWA.</p>	<ul style="list-style-type: none"> • Review existing NWA boundaries to ensure that the boundaries are adequate for site protection and management. (1) • Propose acquisition, through fee simple purchase by willing vendors. (2) • Track land use changes within and adjacent to the NWA through a periodic review of aerial photography. (1) • Through partners (Province of Nova Scotia, Ducks Unlimited Canada, Nature Conservancy of Canada and Eastern habitat Joint Venture), provide adjacent land owners tools and resources for land management (such as various best management practices handbooks) and sources for funding assistance. (2) • Encourage best management practices on farms. (2) • Document and report the number and nature of incidents where evidence exists of illegal activities within Wallace Bay NWA to the Wildlife Enforcement Division. (1)
	<p>Goal 2: Wetland habitats will be managed to provide habitat for migratory birds including waterfowl, waterbirds, and marshbirds.</p> <p>Objective 2.3: Acquire by fee simple purchase, adjacent lands with existing or potential wildlife value.</p>	<ul style="list-style-type: none"> • Review existing NWA boundaries to ensure that the boundaries are adequate for site protection and management. (1) • Propose acquisition, through fee simple purchase by willing vendors, of lands which may minimize or eliminate sources of potential up-slope contamination. (2) • Track land use changes within

Management Challenges & Threats	Goals and Objectives	Management Approaches (actions, including level of priority) ¹
		<p>and adjacent to the NWA through a periodic review of aerial photography. (1)</p> <ul style="list-style-type: none"> • Through partners (Province of Nova Scotia, Ducks Unlimited Canada, Nature Conservancy of Canada and Eastern habitat Joint Venture), provide adjacent land owners tools and resources for land management (such as various best management practices handbooks) and sources for funding assistance. (2) • Encourage best management practices on farms. (2) • Document and report the number and nature of incidents where evidence exists of illegal activities within Wallace Bay NWA to the Wildlife Enforcement Division. (1)
<p>Increased rural residential development places pressures on the NWA, such as illegal access by off-road vehicles, small-scale land encroachments, and potential contamination from on-site waste management.</p>	<p>Goal 1: Forest habitat will be managed to maintain populations of forest birds.</p> <p>Objective 1.2: Acquire by fee simple purchase lands within proposed boundaries of existing NWA.</p>	<ul style="list-style-type: none"> • Review existing NWA boundaries to ensure that the boundaries are adequate for site protection and management. (1) • Propose additions, through fee simple purchase by willing owners, of lands which may minimize or eliminate immediate development pressures. (2) • Through partners (Province of Nova Scotia, Ducks Unlimited Canada, Nature Conservancy of Canada and Eastern habitat Joint Venture), provide adjacent land owners tools and resources for land management (such as various best management practices handbooks) and sources for funding assistance. (2)
<p>Coastal erosion and habitat loss is presently minimal and isolated to the edges of the salt marsh. Sea-level rise and climate changes, with increasing frequency and strength of</p>	<p>Goal 2: Wetland habitats will be managed to provide habitat for migratory birds including waterfowl, waterbirds, and marshbirds.</p>	<ul style="list-style-type: none"> • Monitor habitat changes and coastal erosion within the NWA through annual aerial photography. Habitat changes and coastal erosion, or land accretion, can be monitored in

Management Challenges & Threats	Goals and Objectives	Management Approaches (actions, including level of priority) ¹
<p>storms, may cause this erosion to increase with eventual significant loss of wetland habitat.</p>	<p>Objective 2.1: Manage the six controlled water level impoundments (138 ha) comprising fresh and brackish water wetlands for optimal use by a broad spectrum of native species. Maintain open water and vegetation at a 50:50 ratio (with patches of vegetation interspersed with areas of shallow open water), with a high degree of interspersed and plant species diversity.</p> <p>Objective 2.2: Retain the 104 ha of salt marshes in their natural state and, where possible, protect these wetlands from exterior influences such as surface water induced eutrophication and sea-level rise.</p> <p>Objective 2.3: Acquire by fee simple purchase, adjacent lands with existing or potential wildlife value.</p>	<p>a cost effective and timely manner. (1)</p> <ul style="list-style-type: none"> • Identify and remove barriers to inland migration of salt marshes in response to rising sea-levels. (3) • Identify and mitigate areas of high erosion on impoundment dikes. (2)
<p>The isolation and fragmentation of the NWA is detrimental to the ecological integrity of the site and adds administrative inefficiencies.</p>	<p>Goal 1: Forest habitat will be managed to maintain populations of forest birds.</p> <p>Objective 1.2: Acquire by fee simple purchase lands within proposed boundaries of existing NWA</p>	<ul style="list-style-type: none"> • Secure lands identified for acquisition only from a willing vendor, at market value based on “highest and best use”. (3)
<p>Dams and water management</p>	<p>Goal 2: Wetland habitats will be managed to provide habitat for migratory birds including waterfowl, waterbirds, and marshbirds.</p> <p>Objective 2.1: Manage the six controlled water level impoundments (138 ha) comprising fresh and brackish water wetlands for optimal use by a broad spectrum of native species. Maintain open water and vegetation at a 50:50 ratio (with patches of vegetation</p>	<ul style="list-style-type: none"> • Identify and remove barriers to inland migration of salt marshes in response to rising sea-levels. (3) • Identify and mitigate areas of high erosion on impoundment dikes. (2)

Management Challenges & Threats	Goals and Objectives	Management Approaches (actions, including level of priority) ¹
	interspersed with areas of shallow open water), with a high degree of interspersed and plant species diversity.	

¹ Level of priority: 1 (from 0 to 3 years); 2 (from 4 to 6 years); 3 (from 7 to 10 years)

5.1 HABITAT MANAGEMENT

5.1.1 *Wetlands*

The six managed wetlands within the NWA are monitored yearly with aerial photography, combined with periodic ground inspections recording the wetland water depth and condition of dykes and control structures. Of these marshes, five are freshwater impoundments and one is a brackish marsh. There is also a natural marsh with tidal flow minimized with an aboiteau (Table 3). These impoundments, as well as the natural marsh above the aboiteau, are collaboratively managed by Ducks Unlimited Canada and ECCC-CWS (under a land use agreement).

Ducks Unlimited Canada is responsible for the maintenance of the dykes and control structures within these impoundments (MacKinnon and Kennedy 2011). The structures are constructed and maintained at the sole risk, cost and expense of Ducks Unlimited Canada, who cannot construct or erect any structure without prior approval of the Minister.

The extensive salt marshes below the brackish impoundment and east of the Aboiteau Road require no active management. Once partially drained for agriculture, only strands of remnant dykes remain as evidence of this past history. The objective associated with these 104 ha of salt marshes is to retain them in their natural state and, where possible, protect these wetlands from exterior influences such as surface water induced eutrophication and sea-level rise. The low-intensity farming activities occurring on the 10 ha of agricultural upland do not interfere with this objective.

The goal is to manage the six controlled water level impoundments (138 ha) comprising fresh and brackish water wetlands for optimal use by a broad spectrum of native species. Maintain open water and vegetation at a 50:50 ratio (with patches of vegetation interspersed with areas of shallow open water), with a high degree of interspersed and plant species diversity. Environment and Climate Change Canada staff meets annually with DUC

representatives to review and discuss the aerial photographs, and decisions related to water levels are taken collaboratively.

5.1.2 Forests

No broad-based management of the forest habitat is anticipated or required at present. However, old house sites with associated wildlife food trees such as apple may be retained in early succession to benefit species that use and are attracted to this type of habitat.

The 100 ha of forested habitats will be managed so that the NWA contains large contiguous areas of mature Acadian Forest. No wood cutting will be done in order to preserve its ecological integrity.

5.1.3 Grasslands

Grassland habitats will be managed to provide habitat for migratory birds including bobolink and aerial insectivores. Discussions with the neighbouring farmers operating in the NWA help keep this area beneficial to certain birds by performing late harvest and low-intensity grazing. Periodic mowing is conducted outside of the nesting season.

Nest boxes and nest structures are installed and maintained for species such as Eastern Bluebird, Tree Swallow and Barn Swallow.

5.2 WILDLIFE MANAGEMENT

Hunting, fishing, and trapping are authorized within the Wallace Bay NWA by virtue of a public notice posted at entrances. The wetlands of Wallace Bay have experienced a long history of human use, and the wetlands at the head of the harbour continue to be an important waterfowl hunting area (Barkhouse 1979). Sustainable trapping, using humane methods, provides an additional economic return to the rural community. To manage the muskrat population, Environment and Climate Change Canada promotes trapping. Their number is maintained such as they fulfill their natural role while avoiding overpopulation. These activities are regulated within existing federal and provincial statutes; population monitoring is conducted by the responsible authorities.

The 18.2 ha brackish marsh (Impoundment 3A) (Table 3) is particularly valuable as a feeding area for waterfowl due to the dense stands of Sago Pondweed (*Potamogeton pectinatus*) that benefit from the elevated salinity (Hounsell 1984a; Hounsell 1984b; Hounsell 1986; Martin 1977a; Martin 1977b). The salt marshes below the brackish impoundment and

east of the Aboiteau Road, and associated marsh ponds, provide important habitat for a diversity of shorebird species.

5.3 MONITORING

Effective and efficient monitoring requires careful planning and a coordinated approach. Monitoring will be carried out in a manner that contributes to meeting recovery strategy and action plan objectives. Ongoing monitoring needs are as follows:

1. Waterfowl population monitoring (fall migration surveys) to determine use every 5 years.
2. Breeding bird surveys (forest songbirds) every 5 years.
3. Vegetation regeneration and habitat change monitoring at old homestead locations every 5 years.
4. Macro habitat changes based on annual aerial photography, supported by ground-based annual inspections and botanical surveys every 5 years.
5. Water level and vegetation monitoring (annually) in freshwater impoundments.
6. Nest boxes and nest structures monitoring.
7. Monitoring the number of visitors in the NWA.

5.4 RESEARCH

Research activities will be considered for permitting when the results obtained through research have the potential for the following:

1. Determining the distribution and abundance of reptiles and amphibians within the National Wildlife Area by conducting a detailed inventory.
2. Determining the impact, if any, of the 99 exotic plant species known to occur in the National Wildlife Area.
3. Determining the distribution, abundance, and habitat use of fish species within the National Wildlife Area and adjacent waters.
4. Understanding the current extent of tourism, adventure tourism, ecotourism, and visitation to the National Wildlife Area and surrounding region and determining the impact, if any (positive or negative) of tourism on the National Wildlife Area.
5. Determining the ideal size of the National Wildlife Area, given the management plan goals related to the conservation of migratory birds (including waterfowl).

6. Identifying potential impacts of climate change on the ecology and infrastructure of the NWA and possible mitigation strategies, including water-level management.
7. Determining the occurrence within the NWA of species listed as probable under Table 5.

To obtain a permit in order to conduct research in Wallace Bay National Wildlife Area and to receive instructions concerning guidelines for a research proposal, please contact:

National Wildlife Area – Research Request
Environment and Climate Change Canada, Canadian Wildlife Service
17 Waterfowl Lane, P.O. Box 6227
Sackville, New Brunswick, E4L 1G6

Permit requests should be directed to: Permit.Atl@ec.gc.ca

5.5 PUBLIC INFORMATION AND OUTREACH

The unique character of Wallace Bay NWA and its significance as a coastal wetland presume public education and awareness “at a distance”. Accordingly, a poster featuring an aerial photograph portraying the wetland habitats of Wallace Bay NWA has been prepared under the national “Heritage to Protect” series and distributed as opportunity presents itself and upon request. Visitors should be informed of NWA regulations and educated in the value of habitat protection and the “wildlife first” management approach for protected areas. Management activities, facts and observations about Wallace Bay NWA will be communicated through the national web site and by referencing the national platform.

6 AUTHORIZATIONS AND PROHIBITIONS

In the interests of wildlife and their environment, human activities are minimised and controlled in National Wildlife Areas through the implementation of the *Wildlife Area Regulations*. These regulations set out activities that are prohibited (subsection 3(1)) in the wildlife area and provide mechanisms for the Minister of the Environment and Climate Change to authorize certain activities to take place in National Wildlife Areas that are otherwise considered prohibited. The regulations also provide the authority for the Minister to prohibit entry into National Wildlife Areas.

Activities within a National Wildlife Area are authorized where notices have been posted at the entrance to or along the boundaries of the National Wildlife Area or when notices have been published in local newspapers. All activities in a National Wildlife Area are prohibited unless a notice has been posted or published authorizing the activity to take place. However, in addition to notices, certain activities may be authorized by obtaining a permit from the Minister of Environment and Climate Change.

6.1 PROHIBITION OF ENTRY

Under the *Wildlife Area Regulations*, the Minister may publish a notice in a local newspaper or post notices at the entrance of any wildlife area or on the boundary of any part thereof prohibiting entry to any wildlife area or part thereof. These notices can be posted when the Minister is of the opinion that entry is a public health and safety concern or when entry may disturb wildlife and their habitat.

For the Wallace Bay NWA, entry is not prohibited. Authorized activities and those activities that will be considered for permitting are described below.

6.2 AUTHORIZED ACTIVITIES

For Wallace Bay NWA, public notices authorizing the following non-commercial activities have been posted at all designated access points.

Authorized activities **without** special restrictions:

1. Wildlife observation
2. Hiking
3. Photography
4. Swimming, skiing, skating, snowshoeing (tolerated, without services)

Authorized activities **with** special restrictions:

1. Hunting, fishing and trapping¹
2. Berry picking (non-commercial)²
3. Boating (boats less than 10.0 hp including kayaks, canoes, and outboard motorboats)

Note: If there is a discrepancy between the information presented in this document and the notice, the notice prevails as it is the legal instrument authorizing the activity.

6.3 AUTHORIZATIONS

Permits and notices authorizing an activity may be issued only if the Minister is of the opinion that the activity is scientific research relating to wildlife or habitat conservation; or the activity benefits wildlife and their habitats or will contribute to wildlife conservation; or the activity is not inconsistent with the purpose for which the NWA was established and is consistent with the most recent management plan.

The Minister may also add terms and conditions to permits in order to minimize the impact of an activity on wildlife and wildlife habitat.

All requests for permits or authorizations must be made (in writing or online) to the following address:

National Wildlife Area – Permit Request
Environment and Climate Change Canada, Canadian Wildlife Service
17 Waterfowl Lane, P.O. Box 6227
Sackville, New Brunswick, E4L 1G6

For further information, please consult the Policy when Considering Permitting or Authorizing Prohibited Activities in Protected Areas Designated under the *Canada Wildlife Act* and *Migratory Bird Convention Act, 1994* (December 2011). This Environment and Climate Change Canada policy document is available on the Protected Areas website at www.ec.gc.ca/ap-pa.

¹ Subject to applicable federal and provincial regulations. All hunting in National Wildlife Areas requires the use of non-toxic shot. Possession of lead sinkers and lead jigs that weigh less than 50 grams is prohibited while fishing.

² For Wallace Bay NWA, this includes the non-commercial harvest of salt marsh plants; commonly called Goose Tongue (*Plantago maritima*) and Samphire (*Salicornia europaea*).

6.4 EXCEPTIONS

The following activities will be exempt from the requirements for permitting and authorizations:

- Activities related to public safety, health or national security, that are authorized by or under another Act of Parliament or activities that are authorized under *Health of Animals Act* and the *Plant Protection Act* to protect the health of animals and plants;
- Activities related to routine maintenance of National Wildlife Areas, to the implementation of management plans, and enforcement activities conducted by an officer or employee of Environment and Climate Change Canada.

6.5 OTHER FEDERAL AND PROVINCIAL AUTHORIZATIONS

Depending on the type of activity, other federal or provincial permits may be required to undertake an activity in the Wallace Bay NWA.

Contact your regional federal and provincial permitting office for more information.

National Wildlife Area – Permit Request

Environment and Climate Change Canada, Canadian Wildlife Service

17 Waterfowl Lane, P.O. Box 6227

Sackville, New Brunswick, E4L 1G6

Province of Nova Scotia

Department of Natural Resources, Fish and Wildlife Division

136 Exhibition Street

Kentville, Nova Scotia, B4N 4E5

Phone: (902) 679-6091

<http://www.gov.ns.ca/natr/wildlife/>

7 HEALTH AND SAFETY

In the case of environmental emergencies, contact will be made with the Canadian Environmental Emergencies Notification System:

1-800-565-1633

Non-emergency issues related to security or health and safety issues for Wallace Bay NWA should be reported to:

Environment and Climate Change Canada, Canadian Wildlife Service
17 Waterfowl Lane, P.O. Box 6227
Sackville, New Brunswick, E4L 1G6
Telephone: (506) 364-5044

All reasonable efforts will be made to protect the health and safety of the public including adequately informing visitors of any known or anticipated hazards or risks. CWS staff conducts annual site inspections to identify and address health and safety issues. Further, Environment and Climate Change Canada staff will take all reasonable and necessary precautions to assure their own health and safety and that of their co-workers. However, visitors (including researchers and contractors) must make all reasonable efforts to inform themselves of risks and hazards and must be prepared and self-sufficient. Natural areas are inherently dangerous and proper precautions must be taken by visitors, recognising that Environment and Climate Change Canada staff neither regularly patrol nor offer services for visitor safety in National Wildlife Areas.

Incidents or emergencies can be reported to the numbers listed in Table 7 below.

Table 7: Emergency Contacts for Wallace Bay National Wildlife Area

Emergency Contacts for Wallace Bay, Nova Scotia 45° 50' N 63° 34' W	
Any life threatening emergency	911
Police-Fire-Ambulance	911
Royal Canadian Mounted Police (RCMP), Pugwash detachment (P.O. Box 40, Pugwash, NS B0K 1L0)	1 902 243 2181
Rescue Coordination Centre to report air and marine emergencies (emergency only)	1 800 565 1582
Environmental Emergencies (including oil, pesticide, chemical spills)	1 800 565 1633
Environment and Climate Change Canada — Wildlife Enforcement Division	1 506 364 5036

Environment and Climate Change Canada — Canadian Wildlife Service, Sackville, NB E4L 1G6	1 506 364 5044
Nova Scotia Department of Natural Resources	1 800 565 2224
Nova Scotia Department of Natural Resources (general inquiry)	1 902 679 6097
North Cumberland Memorial Hospital, Pugwash, Nova Scotia	1 902 243 2521

8 ENFORCEMENT

The management of NWAs is based on three acts:

- *Migratory Birds Convention Act, 1994, and Migratory Birds Regulations*
- *Canada Wildlife Act and Wildlife Area Regulations*
- *Species at Risk Act*

To promote compliance with the *Canada Wildlife Act* and *Wildlife Area Regulations*, ECCC-CWS posts signs along the NWA boundaries and at main access points which identify what activities are authorized within each NWA and any conditions on those activities.

Environment and Climate Change Canada's Wildlife Enforcement Division (ECCC-WED) is responsible for enforcement of federal and provincial wildlife laws, and will perform on-site inspections and investigations, patrol the NWA to promote compliance, and prevent prohibited activities within the NWA.

ECCC-WED will protect and maintain the overall ecological and aesthetic qualities of the NWA, including unspoiled natural habitats and diversity of wetlands and plant species, from illegal activities such as camping and camp fires. The occurrence of illegal activities within the Wallace Bay NWA will be documented and reported to the Wildlife Enforcement Division and, where evidence is sufficient, seek enforcement action thereby reducing or eliminating the occurrence of such activities in the NWA.

ECCC-WED officers monitor compliance with the *Canada Wildlife Act*, *Wildlife Area Regulations*, the *Migratory Bird Convention Act, 1994*, the *Species at Risk Act*, the *Fisheries Act*, and the provincial *Wildlife Act, 1989* on an ongoing basis and will initiate investigations when required. ECCC-WED officers will respond to violations and take appropriate enforcement actions. CWS Atlantic staff provides details from site inspections that may require investigation.

9 PLAN IMPLEMENTATION

The management plan will be implemented over a 10-year period. Annual work plans will be developed in accordance with priorities and budgets and the details of management plan implementation will be developed through Environment and Climate Change Canada's annual work planning process and will be implemented as human and financial resources allow. An adaptive management approach will be favoured for the implementation of the management plan. The implementation of the plan will be evaluated five years after its publication, on the basis of the actions identified in Table 8.

Table 8: Implementation Strategy Timeline

Activity	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Site inspections for health and safety (April–May)	x	x	x	x	x	x	x	x	x	x
Maintenance and monitoring of public use area (May–August)	x	x	x	x	x	x	x	x	x	x
Boundary maintenance and posting of regulatory signage (October–March)	x	x	x	x	x	x	x	x	x	x
Impoundment Monitoring	x	x	x	x	x	x	x	x	x	x
Aerial photography of freshwater wetlands (August–September)	x	x	x	x	x	x	x	x	x	x
Freshwater wetlands management meeting (February)	x	x	x	x	x	x	x	x	x	x
Botanical survey					x					
Mature Acadian Forest management	x	x	x	x	x	x	x	x	x	x
Acquisition of lands	x	x	x	x	x	x	x	x	x	x

9.1 MANAGEMENT AUTHORITIES AND MANDATES

The Canadian Wildlife Service of Environment and Climate Change Canada, Atlantic region, is responsible for site management of Wallace Bay NWA.

9.2 MANAGEMENT PLAN REVIEW

This Management Plan will be reviewed 5 years after its formal approval by Environment and Climate Change Canada, Canadian Wildlife Service and every 10 years thereafter.

Additions of new information may be appended to the document as required to aid in site management and decision-making.

10 COLLABORATORS

There are no formal arrangements pertaining to the management or administration of Wallace Bay NWA with the exception with an agreement with Ducks Unlimited Canada to maintain the controlled water level impoundments within the NWA.

There are six controlled water level impoundments as well as the natural marsh above the aboiteau, within the NWA, that are collaboratively managed by Ducks Unlimited Canada and ECCC-CWS (under a land use agreement). Ducks Unlimited Canada is responsible for the maintenance of the dykes and control structures within these impoundments (MacKinnon and Kennedy 2011). These structures are constructed and maintained at the sole risk, cost and expense of Ducks Unlimited Canada, who cannot construct or erect any structure without prior approval of the Minister. The agreement was signed on 4 April 1986 and continued for a period of 21 years (4 April 2007), and thereafter from year to year. If, at the end of the agreement, the dams are not in good condition, DUC is required to undertake the necessary maintenance work.

For a number of years, members of the Wallace Area Development Association (WADA) have expressed interest in sustainable public use activities within the Wallace Bay NWA. The development of the parking area and boat launch, off the Aboiteau Road, was done with the endorsement and support of the association.

A close working relationship is also maintained with the Wildlife Division of the Nova Scotia Department of Natural Resources, with frequent data and information sharing pertaining to Wallace Bay NWA.

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