



Scotch Bonnet Island and Mohawk Island National Wildlife Areas Management Plan



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Hélène Lévesque (Canadian Wildlife Service, Ontario) prepared the 1986 *Management Plan: Scotch Bonnet Island National Wildlife Area*. Janet Planck and Jeffrey Robinson (Canadian Wildlife Service, Ontario) prepared the 1985 *Management Plan: Mohawk Island National Wildlife Area*. Both of these plans provided valuable groundwork for this update.

Copies of this plan are available at the following addresses:

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Photos: © Environment and Climate Change Canada, Canadian Wildlife Service (Left – Herring Gulls at Scotch Bonnet Island National Wildlife Area, photo: Jeff Robinson; Centre – Caspian Terns at Mohawk Island National Wildlife Area, photo: Denby Sadler; Right – Herring Gulls and Double-crested Cormorants at Mohawk Island National Wildlife Area, Lake Erie)

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About Environment and Climate Change Canada 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 12 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 and other stakeholders.

A management plan specifies activities that are allowed and identifies other activities that 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 of facilities, enforcement of regulations, as well as the maintenance of signs and 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 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 website at www.ec.gc.ca/ap-pa or contact the Canadian Wildlife Service.

Scotch Bonnet Island National Wildlife Area

Scotch Bonnet Island National Wildlife Area (NWA) supports significant populations of colonial nesting waterbirds in Lake Ontario. Scotch Bonnet Island NWA is a small, 1-hectare island, located approximately 4.8 kilometres from the mainland in eastern Lake Ontario, off the west shore of Prince Edward County, Ontario. The island is composed of solid limestone outcroppings around the perimeter and barren ground in the interior. The island is named after one of three north-south trending rises of glacio-lacustrine clay and till, known as the Scotch Bonnet Ridge, in eastern Lake Ontario.

Scotch Bonnet Island NWA was established in 1979 to protect colonially nesting waterbirds and as a site for long-term research. Every spring the island comes alive with the arrival of large numbers of colonial waterbirds, primarily Herring Gulls and Double-crested Cormorants that breed on the island or that rest there throughout the summer. The island is also a stopover site for migratory birds, especially waterfowl and shorebirds, during spring and fall migration along the Atlantic flyway.

Its isolation, stable substrate and long history of use by nesting colonial waterbirds make Scotch Bonnet Island NWA an important site for conservation and long-term research. Scotch Bonnet Island NWA is one of several Herring Gull sites in the Great Lakes that are visited as part of a long-term study of persistent toxic chemicals, coordinated by Environment and Climate Change Canada's Canadian Wildlife Service.

Public access to the Scotch Bonnet Island NWA is prohibited to protect colonial waterbirds and other wildlife from disturbance. Permits issued under the *Canada Wildlife Act* are required to conduct research, surveys and monitoring at Scotch Bonnet Island NWA and must be obtained from the Canadian Wildlife Service of Environment and Climate Change Canada. The isolated location and jagged shoreline discourages visitation. The waters around the island are popular for recreational boating and fishing in the summer months, and the local area is used by waterfowl hunters in the fall.

A stone lighthouse on the western end of the island was built in 1856 to alert mariners to the presence of a nearby shoal. By the early 1970s, due to waves and weather, the ruins of the building and portions of the stone tower were all that remained. In the ensuing years, these structures have continued to deteriorate, and restoration is likely not feasible due to safety hazards and associated expenses. Parks Canada Agency will be completing a more

comprehensive review of the structure in the near future. Fisheries and Oceans Canada owns and operates a steel navigation tower and automatic light, constructed in 1959 on the island, to replace the original navigational light.

Scotch Bonnet Island NWA is one of 10 NWAs in Ontario. Its management is being addressed jointly in this management plan with Mohawk Island NWA, because the two areas hold similar importance for colonial waterbirds and share many management issues. This 2016 *Scotch Bonnet Island and Mohawk Island National Wildlife Areas Management Plan* is an update of the *Management Plan: Scotch Bonnet Island National Wildlife Area* (Lévesque, 1986) and the *Management Plan: Mohawk Island National Wildlife Area* (Planck and Robinson, 1985) and replaces all other versions.

Mohawk Island National Wildlife Area

Mohawk Island National Wildlife Area (NWA) is a small, 4-hectare sparsely vegetated limestone outcrop located in eastern Lake Erie, approximately 20 kilometres to the southwest of Port Colborne, Ontario, near the mouth of the Grand River. The island consists mainly of open limestone barrens, and is greatly affected by strong winds. The sparse vegetation is limited to thin soils found in small depressions and rock crevices.

Mohawk Island NWA was established in 1978 to protect colonially nesting waterbirds. It is an important nesting site for several species of waterbirds, primarily Herring Gulls, Ring-billed Gulls and Double-crested Cormorants. The island also provides a stopover site for many species of migratory birds, especially waterfowl and shorebirds. Populations of the colonial waterbirds at Mohawk Island NWA have been monitored since the 1970s, and are part of long-term study of persistent toxic chemicals, coordinated by Environment and Climate Change Canada's Canadian Wildlife Service. Mohawk Island NWA is a well-known local landmark, and the waters around the island are popular for recreational boating and fishing in the summer months.

There is limited public access to Mohawk Island NWA, which can only be reached by boat. Public access to Mohawk Island is prohibited between April 1 and August 31 to protect colonial nesting waterbirds and other wildlife from disturbance.

Permits issued under the *Canada Wildlife Act* are required to conduct research, surveys and monitoring at Mohawk Island NWA and must be obtained from the Canadian Wildlife Service of Environment and Climate Change Canada.

Public access to Mohawk Island NWA is only allowed between September 1 to March 31 (outside the breeding bird season). Authorized recreational uses at the island during this period include wildlife viewing, picnicking, recreational fishing from shore (no lead sinkers and spears) and swimming.

The only structure on Mohawk Island NWA is a stone lighthouse, located on the south side of the island. The lighthouse was built in the 1840s. It provided a navigational beacon to Lake Erie mariners until the 1960s, when the structure was gutted by fire. The light was removed and replaced by an offshore navigational buoy maintained and operated by Fisheries and Oceans Canada. Today, only the exterior walls of the light tower and house remain. Entry

to the stone lighthouse is not allowed due to safety hazards. The structure continues to be subject to vandalism, and the feasibility of maintaining what is left of it has not been determined.

Mohawk Island NWA is one of 10 NWAs in Ontario. Its management is being addressed jointly in this management plan with Scotch Bonnet Island NWA, because the two areas hold similar importance for colonial waterbirds and share many management issues. This 2016 *Scotch Bonnet Island and Mohawk Island National Wildlife Areas Management Plan* is an update of the *Management Plan: Scotch Bonnet Island National Wildlife Area* (Lévesque, 1986) and the *Management Plan: Mohawk Island National Wildlife Area* (Planck and Robinson 1985) and replaces all other versions.

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 AREAS

Both Scotch Bonnet Island and Mohawk Island are small, sparsely vegetated islands, with thin soils over solid limestone (Figure 1; Figure 3). These two Great Lakes islands provide important nesting habitat for large numbers and a significant diversity of colonial waterbirds. They are both located within major migratory flyways and provide stopover habitat for many waterfowl and shorebirds during spring and fall migration. Scotch Bonnet Island (1 ha) is located in Lake Ontario, off the western shore of Prince Edward County, Ontario (Figure 2). Mohawk Island (4 ha) is located in eastern Lake Erie, near the town of Dunnville in Haldimand County, Ontario (Figure 4).

The ruins of stone lighthouses built in the 19th century are also present on both islands, and although these are no longer active navigational beacons, they hold historical and cultural significance. The Scotch Bonnet lighthouse, for example, has been identified as one of the last remaining sentinels of the schooner era on Lake Ontario. The two islands were independently established as National Wildlife Areas (NWAs) in the late 1970s, when their lights were no longer necessary for Great Lakes navigation. The islands are managed by Environment and Climate Change Canada’s Canadian Wildlife Service. They are jointly addressed in this management plan because they have similar features and share common management issues.

At the international level, both areas are classified under the International Union for the Conservation of Nature and Natural Resources criteria for protected areas as Category 1A protected areas (Dudley, 2008). They are protected for the conservation of species and genetic diversity, and scientific monitoring and research, and not promoted as a tourism destination or for on-site public education.

Table 1: Scotch Bonnet Island and Mohawk Island National Wildlife Areas summary

| | Scotch Bonnet Island | Mohawk Island |
|-----------------------------------|--|--|
| Protected area designation | National Wildlife Area | National Wildlife Area |
| Province or territory | Ontario | Ontario |
| County | Prince Edward | Haldimand |
| Latitude and longitude | Latitude 43°54'00"N Longitude -77°32'25"W | Latitude 42°50'05"N Longitude -79°31'22"W |
| Size | 1 ha | 4 ha |

| | Scotch Bonnet Island | Mohawk Island |
|---|--|---|
| Protected area selection criteria (Protected Areas Manual) | <p>Criteria 1.a) – “The area supports a population of a species (...) or a group of species which is concentrated for (...) a portion of the year.” For these NWAs: Both islands are important nesting, roosting and loafing sites for large numbers of colonial waterbirds, and a staging area for waterfowl and shorebirds during migration.</p> <p>Criteria 3.a) – “The area is rare or unusual wildlife habitat, of a specific type in a biogeographic region.” For these NWAs: Each island is a significant geographic feature in the Great Lakes, and provides protection to birds from predators and disturbance.</p> | |
| Protected area classification system (Protected Areas Manual) | Species or critical habitat conservation | |
| International Union for Conservation of Nature and Natural Resources (IUCN) classification | <p>Category 1A, Strict Nature Reserve: “Strictly protected areas set aside to protect biodiversity (...) features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring” (Dudley, 2008).</p> | |
| Order in Council number | P.C. 1979-3017 | P.C. 1978-1439 |
| Directory Federal Real Property (DFRP) number | 29224 | 10447 |
| Gazetted | 1979 | 1978 |
| Additional designations | North American Bird Conservation Initiative (NABCI) Bird Conservation Area 13; within Mixedwood Plains Ecozone, Manitoulin – Lake Simcoe Ecoregion | North American Bird Conservation Initiative (NABCI) Bird Conservation Area 13; within Mixedwood Plains Ecozone, Lake Erie Lowland Ecoregion |
| Faunistic and floristic importance | <p>Important colonial waterbird nesting site for many species, including Herring Gull (<i>Larus argentatus</i>), Double-crested Cormorant (<i>Phalacrocorax auritus</i>), Black-crowned Night Heron (<i>Nycticorax nycticorax</i>), Great Black-backed Gull (<i>Larus marinus</i>), Caspian Tern (<i>Hydroprogne caspia</i>), and occasionally Common Tern (<i>Sterna hirundo</i>).</p> <p>Loafing, foraging and stopover site for migrating waterfowl and shorebirds during spring and fall migration.</p> | <p>Important colonial waterbird nesting site for many species, including Ring-billed Gull (<i>Larus delawarensis</i>), Herring Gull, Double-crested Cormorant, Caspian Tern, and occasionally Common Tern and Great Black-Backed Gull.</p> <p>Loafing, foraging and stopover site for migrating waterfowl and some shorebirds during spring and fall migration.</p> |
| Invasive species | None recorded | Zebra Mussel (<i>Dreissena polymorpha</i>) and Quagga Mussel (<i>Dreissena rostriformis bugensis</i>) shells, Purple Loosestrife (<i>Lythrum salicaria</i>), Mute Swan (<i>Cygnus olor</i>) |

| | Scotch Bonnet Island | Mohawk Island |
|------------------------------|---|---|
| Species at risk | None recorded | None recorded |
| Management agency | Environment and Climate Change Canada – Canadian Wildlife Service (Ontario) | |
| Public access and use | <p>Public access is prohibited year round, except by <i>Canada Wildlife Act</i> (CWA) permit, for research and to monitor and maintain infrastructure.</p> <p>Recreational use limited to offshore and nearshore areas.</p> <p>Boating and wildlife viewing in the nearshore are discouraged during the breeding season (between April and August) because activities may cause colonial nesting waterbirds to abandon nests.</p> | <p>Public access is prohibited between April 1 and August 31 except by CWA permit for research and to monitor and maintain infrastructure.</p> <p>Public access to NWA for day use allowed only between September 1 and March 31, from sunrise to sunset. Activities allowed at the island during this period include wildlife viewing, picnicking, recreational fishing from shore (no lead sinkers and spears), swimming, and boat landing (motorized and non-motorized boats). Overnight camping and open fires are prohibited at all times.</p> <p>Boating and wildlife viewing in the nearshore are discouraged during the breeding season (between April and August) because activities may cause colonial nesting waterbirds to abandon nests.</p> |
| Other | There are no docking or access facilities at either site. The shoreline is rocky; all authorized visitors should exercise caution. | |



Figure 1: Aerial photograph of Scotch Bonnet Island National Wildlife Area, Lake Ontario, Ontario, 1976

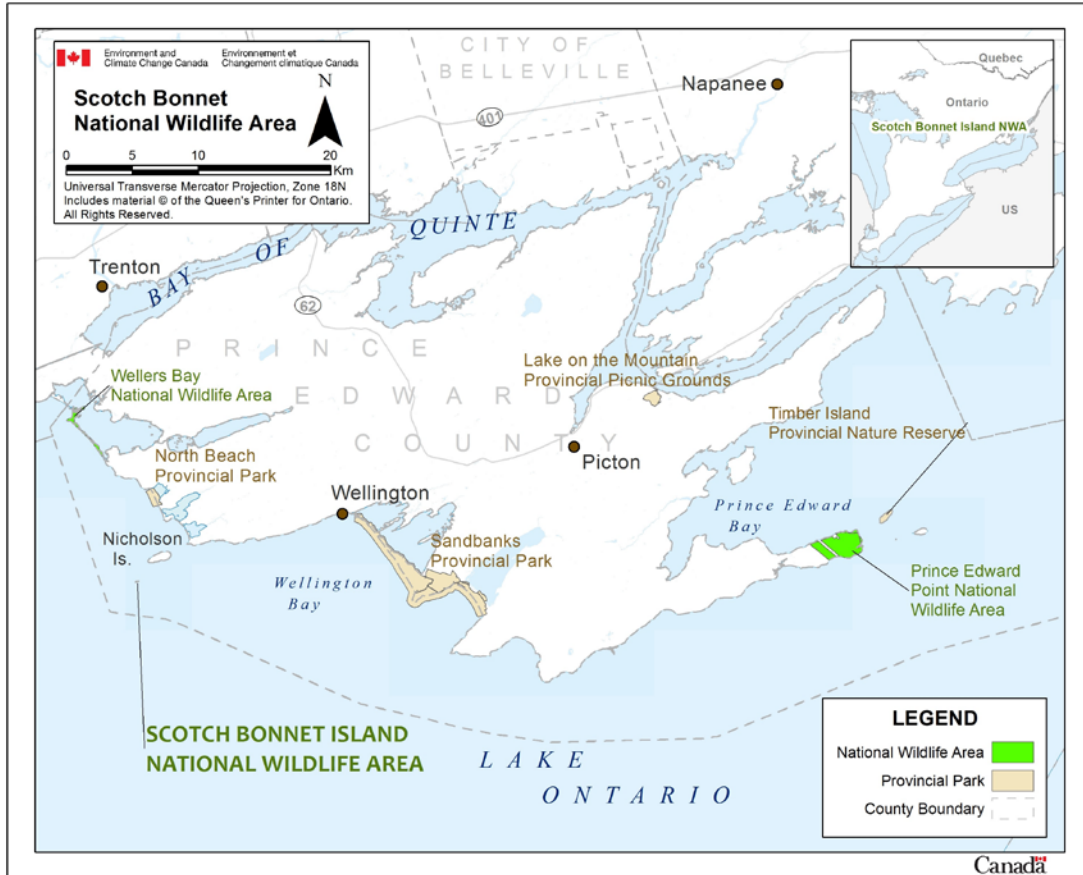


Figure 2: Location of Scotch Bonnet Island National Wildlife Area, Lake Ontario
 Map source: Environment and Climate Change Canada, Canadian Wildlife Service, Ontario, 2016

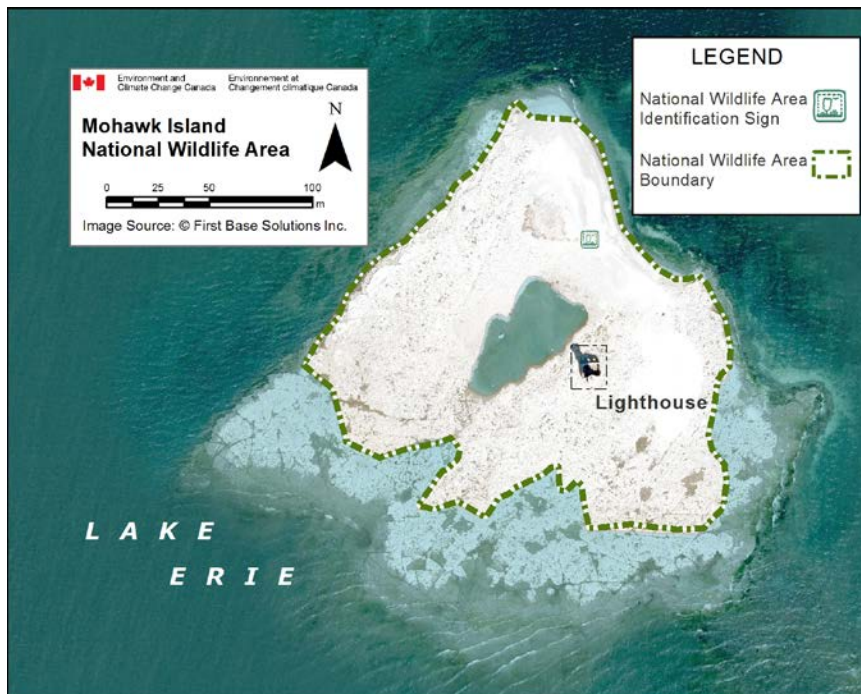


Figure 3: Aerial photograph of Mohawk Island National Wildlife Area, Lake Erie, Ontario, 2006

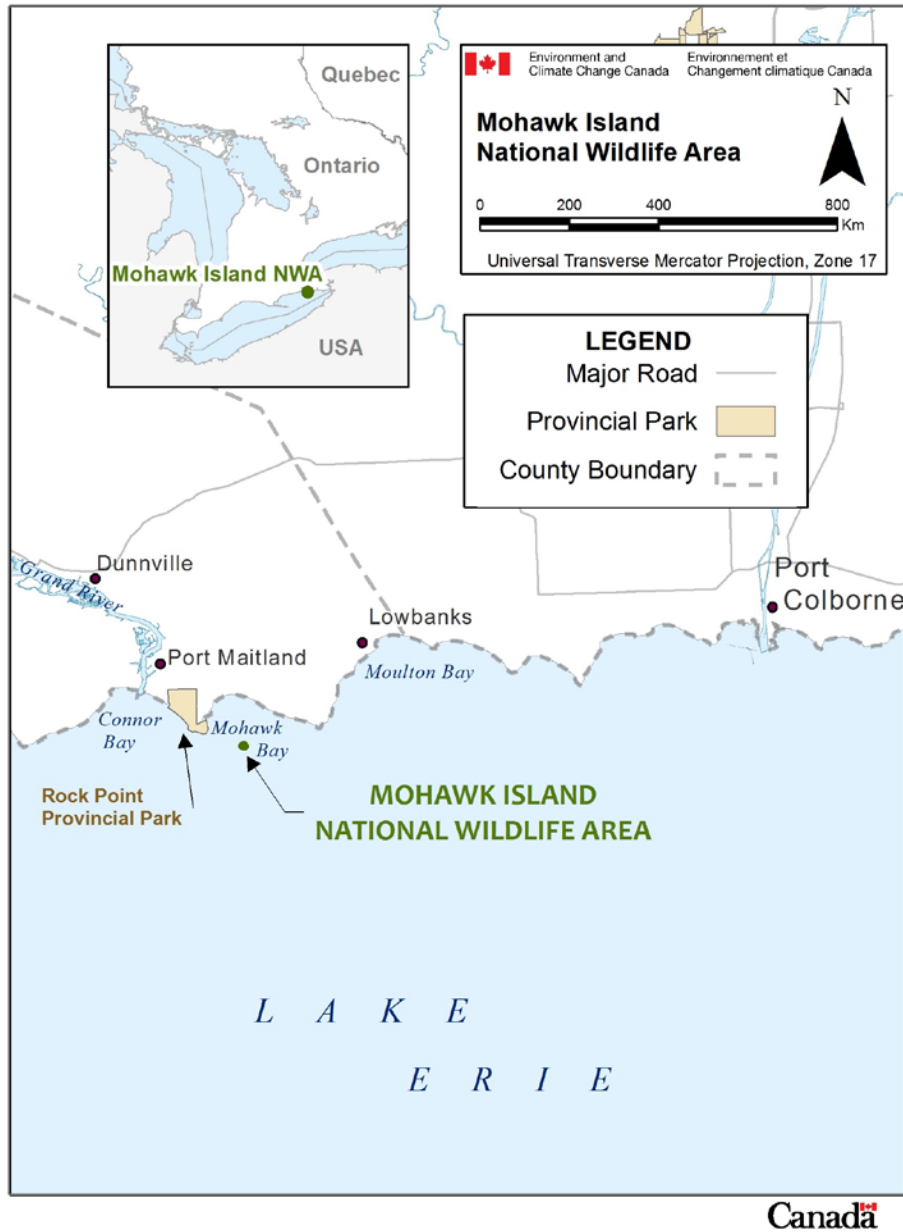


Figure 4: Location of Mohawk Island National Wildlife Area, Lake Erie

Map source: Environment and Climate Change Canada, Canadian Wildlife Service, Ontario, 2016

1.1 REGIONAL CONTEXT

Scotch Bonnet Island NWA is found within Lake Ontario, located approximately 20 km due south of the town of Trenton, in Prince Edward County. The mainland portion of the county is effectively a large (700 km²) peninsula, with over 800 km of shoreline largely surrounded by Lake Ontario and the Bay of Quinte (Figure 2). The island is named after one of three north-south trending rises of glacio-lacustrine clay and till, known as the Scotch Bonnet Ridge, in eastern Lake Ontario.

Scotch Bonnet Island and surrounding region are located within the Mixedwood Plains Ecozone and the Manitoulin-Lake Simcoe Ecoregion (Ecological Stratification Work Group, 1995). The climate within this ecozone is strongly influenced by the large open waters of the Great Lakes, commonly referred to as the “lake effect,” in which the lakes have a moderating effect on air temperatures. Precipitation is uniformly distributed throughout the seasons, although there can be great variation in day-to-day weather.

The predominant land use in Prince Edward County is agriculture, and it is also a popular tourist destination for recreational fishing and boating. There is also commercial fishing (trap net and gill net) in the surrounding waters. Prince Edward County contains many natural areas, including provincial parks (Presqu’île, North Beach, Sandbanks, Lake on the Mountain and Timber Island) and wildlife management areas (Point Petre Provincial Wildlife Management Area), and federal protected areas (Wellers Bay NWA and Prince Edward Point NWA) (Figure 2). The Prince Edward County South Shore Important Bird Area is located southeast of the Scotch Bonnet Island NWA. The entire region is important during migration: over 300 species of birds, primarily songbirds and raptors, move through Prince Edward County along the Atlantic Flyway during the spring and fall.

To the west, Mohawk Island NWA is located in the eastern basin of Lake Erie, approximately 20 km southwest of Port Colborne, near the mouth of the Grand River (Figure 4). Limestone outcroppings have created reefs and small islands in these relatively deep waters for Lake Erie, and Mohawk Island is the largest of the islands in the area. The above-water area of Mohawk Island fluctuates with the levels of Lake Erie. For example, in 1995 the land area of Mohawk Island was approximately 16 325 m². In 2006, when water levels were lower (than 1995), the exposed land area was approximately 26 325 m² (Figure 5).

Like Scotch Bonnet Island, the area's climate is moderated by the Great Lakes, with the lake acting as a heat reservoir. In spring, air is cooled as surface waters remain near freezing. During fall and winter, the water warms the air, and fog occurs frequently. Lake Erie water levels also fluctuate over a range of about 4 m, with annual fluctuations generally ranging from 1 to 2 m (Fisheries and Oceans Canada, 2010). During severe storms, which occur most often in November, this can create waves 2 to 5 m high, sometimes higher than Mohawk Island itself.

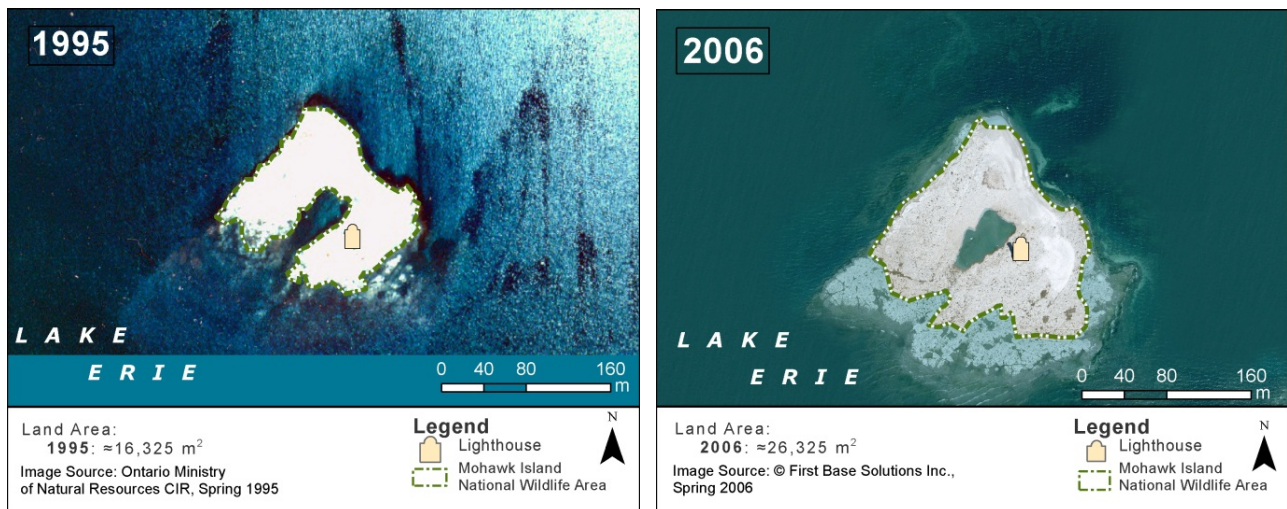


Figure 5: Mohawk Island National Wildlife Area Lake Erie above-water land area, 1995 (left) and 2006 (right)

To the north of Mohawk Island, the predominant land use on the mainland in Haldimand County is agriculture. There is also an active commercial fishery in this part of the Great Lakes. In the surrounding areas, there are a few natural areas remaining, such as Rock Point and James N. Allan Provincial Parks, Dunnville Marshes, and Byng Island Conservation Area along the Grand River. The northern shoreline of Lake Erie—including Mohawk Bay, Rockhouse Point, Port Colborne and Port Maitland (at the mouth of the Grand River)—is known for large numbers of migrating birds during spring and fall. The Rock Point Banding Station, located in Rock Point Provincial Park, is a Canadian Migration Monitoring Network station operated by the Haldimand Bird Observatory. Terns, gulls and cormorants are often observed feeding along the Lake Erie shoreline. Many species of waterfowl and shorebirds pass through and use the islands and surrounding region as a stopover site when crossing Lake Erie along the Mississippi and Atlantic Flyways during spring and fall migration.

1.2 HISTORICAL BACKGROUND

1.2.1 History of Scotch Bonnet Island

Scotch Bonnet Island has been a navigational landmark in eastern Lake Ontario since 1856, when the Department of Transport established a navigation aid station on the island. A circular limestone lighthouse 16.5 m high and a lightkeeper’s house were erected on the island to signal the reef to travelling ships, and a foghorn was operated manually. The lightkeeper’s house was vacated in 1924, but the lighthouse continued to operate almost continuously until 1959, when a steel navigation tower with an automatic light replaced the old lighthouse . By the

mid-1970s, the old limestone lighthouse had deteriorated, and the Department of Transport declared the island to be excess Crown lands.

The Department of Transport transferred ownership of Scotch Bonnet Island to the Canadian Wildlife Service on March 8, 1979 (P.C. 1979-686), and on November 8, 1979, it was named the Scotch Bonnet Island National Wildlife Area. The primary purpose of establishing the Scotch Bonnet Island NWA was to protect nesting habitat for colonial waterbirds, and to conduct research.

In the conditions of the 1979 land transfer, Transport Canada retained ownership of the steel navigation tower and certain rights to access the steel tower for maintenance, and Parks Canada Agency retained rights to access the stone lighthouse for heritage conservation purposes. The steel navigation tower is currently maintained and operated by Fisheries and Oceans Canada. Today, only partial walls of the stone light tower and house remain and entry to the structure is prohibited (Figure 6).



Figure 6: Lighthouse and steel navigation tower, Scotch Bonnet Island National Wildlife Area, 2012

Photo: Jeff Robinson © Environment and Climate Change Canada, Canadian Wildlife Service

1.2.2 History of Mohawk Island

The Mohawk Island lighthouse represents an important chapter in Lake Erie's navigational and shipping history. The stone tower, then known as the Gull Island light, and the adjoining stone lightkeeper's house were built between 1846 and 1848. The light served as a navigational aid to ships entering the southern entrance of the original Welland Canal at Port Maitland, and to warn of the hazardous shoal off the southeast shore of Mohawk Island. The circular stone tower once stood over 18 m high and held an octagonal iron lantern, surmounted by a cupola. Oil lamps with reflectors produced a beam with a range of about 16 km (Planck and Robinson, 1985).

In 1911, the Ontario Department of Lands, Forests and Mines recommended that ownership of Mohawk Island (then known as Gull Island) be transferred to the federal Department of Marine and Fisheries (now Transport Canada) in order to maintain the lighthouse. The light was automated in 1933 using a battery-powered light. When the entrance to the Welland Canal was moved to Port Colborne in 1934, the Mohawk Island light became less important to mariners. Deterioration of the structure continued, and it was gutted by fire in 1969. In 1969 the stone lighthouse was decommissioned and a navigation buoy was placed off the southeast shore of the island to mark the hazardous shoal.

Canadian Wildlife Service biologists examined the island in the early 1970s and proposed that it be designated as an NWA to protect colonial waterbirds. In 1976, the Department of Transport (Transport Canada) transferred control of the island to the Canadian Wildlife Service, now a division of Environment and Climate Change Canada. In 1978, Mohawk Island was formally recognized as an NWA under the *Wildlife Area Regulations* of the *Canada Wildlife Act*. A 1977 demolition order was issued by the Department of Transport on the basis that the lighthouse constituted a public hazard, but significant local support delayed the demolition until it was stopped. Today, only the exterior walls of the tower and house remain and entry to the structure is prohibited (Figure 7).



Figure 7: Lighthouse, Mohawk Island National Wildlife Area, 2012

Photo: Denby Sadler © Environment and Climate Change Canada, Canadian Wildlife Service

The long-term significance of both islands for colonial waterbirds is well documented. Records of nesting birds at Scotch Bonnet Island date back to the 1930s. Records of nesting birds at Mohawk Island date to the 1890s, as noted in Thomas McIlwraith's *Birds of Ontario* (1984). In this same book, McIlwraith also refers to Mohawk Island as "Gull Island".

Mohawk Island continued to attract birders through the 1930s and 1940s, when significant numbers of gulls and terns were reported (Mitchell, 1946; Gamble, 1948).

This 2013 *Scotch Bonnet Island and Mohawk Island National Wildlife Areas Management Plan* is an update of the *Management Plan: Scotch Bonnet Island National Wildlife Area* (Lévesque 1986) and the *Management Plan: Mohawk Island National Wildlife Area* (Planck and Robinson, 1985) and replaces all other versions.

1.3 LAND OWNERSHIP

Both Scotch Bonnet Island NWA and Mohawk Island NWA are owned by the Government of Canada and are administered by Environment and Climate Change Canada's Canadian Wildlife Service. Property transfer documents only refer to the term "island," so it is inferred that Environment and Climate Change Canada owns to the water's edge of both NWAs. Parks Canada Agency and Fisheries and Oceans Canada (formerly Transport Canada) maintain access rights to Scotch Bonnet Island NWA, as a condition of the 1979 land transfer.

The Great Lakes are bi-national and are managed jointly by Canada and the United States. Other federal or provincial agencies (Fisheries and Oceans Canada, Ontario Ministry of Natural Resources and Forestry, and Ontario Ministry of the Environment) may be responsible for issuing permits, depending on the type of activity.

1.4 FACILITIES AND INFRASTRUCTURE

Both islands are accessible only by boat. There are no roads, trails or docking facilities at either NWA. Signage is posted to indicate access restrictions, i.e., no access at Scotch Bonnet Island NWA, limited access (September 1 to March 31) at Mohawk Island NWA. Signs can be difficult to install in the bedrock and require frequent maintenance due to damage from the elements.

The lighthouses no longer function, and navigational aids mark the islands and shoals for mariners. A steel navigation tower holding an automatic light is located on the west end of Scotch Bonnet Island (Figure 8a, b). At Mohawk Island NWA, there is a navigational buoy in Lake Erie, to the southeast of the island. Both navigation aids are currently owned and operated by Fisheries and Oceans Canada.

Both islands contain the ruins of 19th-century stone lighthouses and associated structures. The Scotch Bonnet Island lighthouse has been showing signs of deterioration for several decades (Figure 8b). In the mid-1980s, Parks Canada Agency staff visited the island to document the architectural heritage of the stone lighthouse. The lighthouse continues to deteriorate, and the ruins pose a safety hazard. Public access to the NWA and entry to the ruins are prohibited. In the centre portion of Scotch Bonnet Island, a solid concrete breakwall filled with soil brought in from nearby Nicholson Island surrounds the old stone lighthouse and newer steel navigation tower. The breakwall was originally constructed to protect the lighthouse from storms and waves, and it continues to provide protection to the steel navigation tower. However, sections of the breakwall have eroded and have been subject to vandalism such as graffiti (Figure 8a, 8b).

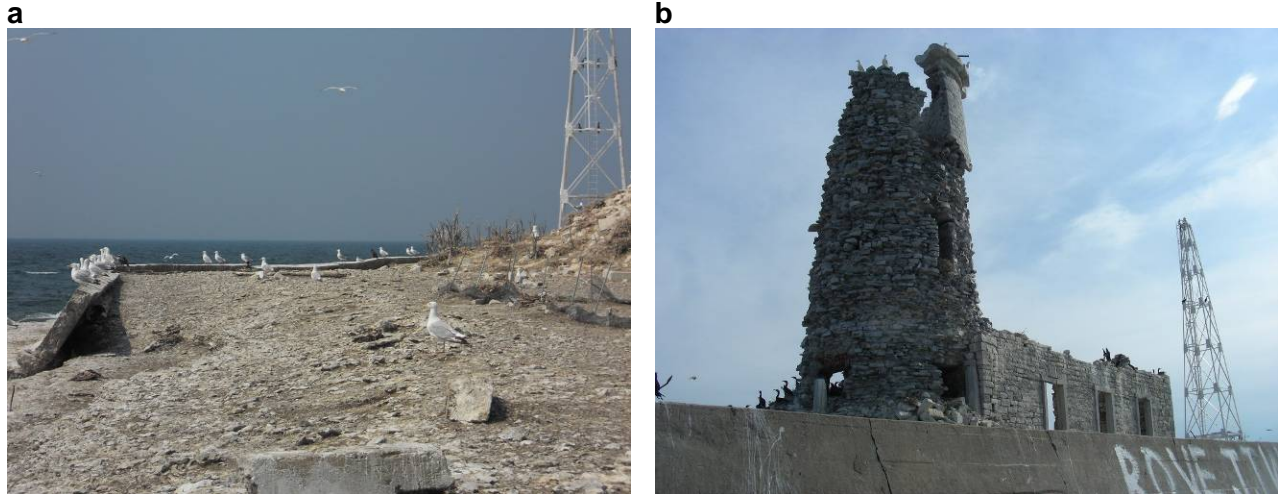


Figure 8: a) Concrete breakwall deterioration along south shore of Scotch Bonnet Island National Wildlife Area, 2010; b) Scotch Bonnet Island National Wildlife Area lighthouse and concrete breakwall graffiti, 2008

Photos: a) Tyler Hoar © Environment and Climate Change Canada, Canadian Wildlife Service; b) Dave Moore © Environment and Climate Change Canada, Canadian Wildlife Service

The Mohawk Island lighthouse, located on the south side of the island, became unoccupied much earlier, and was vandalized as early as 1938. The lighthouse has been damaged over the years by weather and vandalism, and the exterior walls of the tower and house are all that remain of the original structure (Figure 7). Public access and entry to the lighthouse ruins are prohibited. The structure still serves as an informal navigation landmark for fishing and pleasure boats.

Table 2: Facilities and infrastructure in Scotch Bonnet Island and Mohawk Island National Wildlife Areas (NWAs)

| Type of asset | Approximate size | Responsibility |
|---------------------------------|-----------------------|---|
| Scotch Bonnet Island NWA | | |
| NWA signs | 1.2 m X 1.2 m | Environment and Climate Change Canada – Canadian Wildlife Service |
| Steel navigation tower | 19.2 m | Fisheries and Oceans Canada |
| Concrete breakwall | 82 m long X 22 m wide | Environment and Climate Change Canada – Canadian Wildlife Service/Fisheries and Oceans Canada |
| Stone lighthouse | 16.5 m high | Environment and Climate Change Canada – Canadian Wildlife Service/Parks Canada Agency |
| Mohawk Island NWA | | |
| NWA signs | 1.2 m X 1.2 m | Environment and Climate Change Canada – Canadian Wildlife Service |

| Type of asset | Approximate size | Responsibility |
|----------------------|--|---|
| Stone lighthouse | Building footprint = 100 m ² , tower 18 m high | Environment and Climate Change Canada – Canadian Wildlife Service |

2 ECOLOGICAL RESOURCES

2.1 TERRESTRIAL AND AQUATIC HABITATS

Scotch Bonnet Island is approximately 60% exposed limestone bedrock outcropping around the perimeter, and 40% barren ground in the interior. There is a shallow underwater limestone shelf visible around the island (Figure 9a). Historically, vegetation was limited to the higher area contained by the concrete breakwall. It was composed of an herbaceous cover including mustard species, Common Nightshade (*Solanum dulcamara*), grasses and a few low shrubs such as dogwoods (*Cornus* spp.) In recent years, much of the vegetation on the island has died, largely due to increased cormorant use and the resulting highly acidic excrement. Scotch Bonnet Island is now virtually devoid of any living vegetation (Figure 9b).

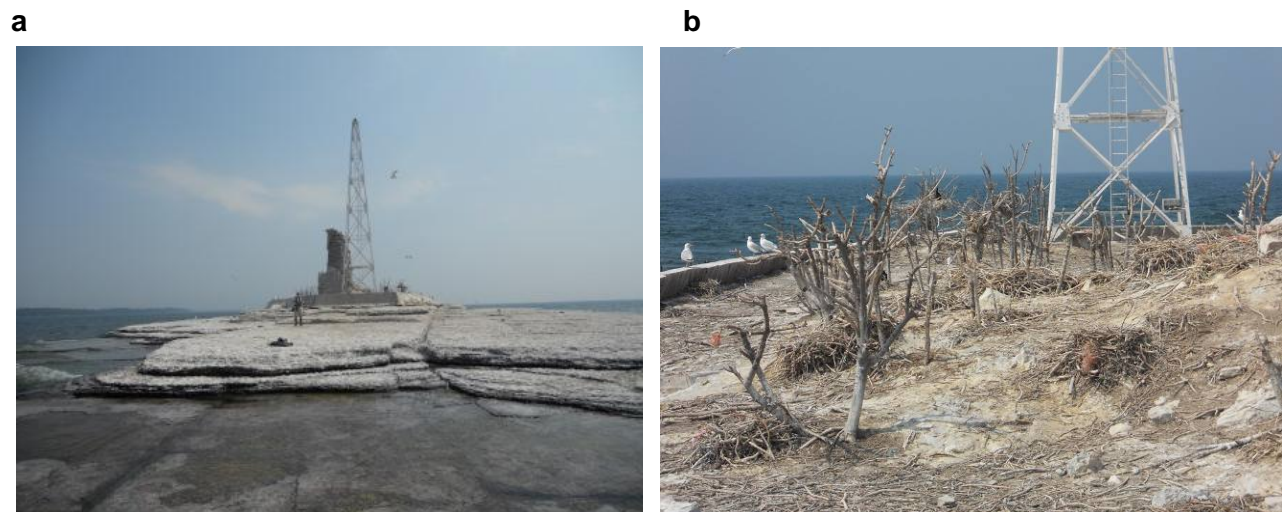


Figure 9: a) Limestone shelf at western end of Scotch Bonnet Island National Wildlife Area (NWA); b) Dead shrubs at Scotch Bonnet Island NWA, 2010

Photo: Tyler Hoar © Environment and Climate Change Canada, Canadian Wildlife Service

Mohawk Island is also effectively a low, flat, exposed limestone shoal, with approximately three-quarters of the island barely exceeding average lake levels. The surface consists mainly of bare limestone, but a thin layer of soil is found on some higher areas and in crevices. A sand and gravel beach and mound has been deposited over a southern and eastern portion of the rock shoal (Figure 10). A beach ridge, composed of Zebra Mussel (*Dreissena polymorpha*) and Quagga Mussel (*Dreissena rostriformis bugensis*) shells, has accumulated on the southeast side of the island.

Vegetation on Mohawk Island is also very sparse, and the diversity is quite low. Currently, there are only small patches of mixed herbaceous growth and grasses found in rock

crevices and depressions (Figure 11). The species present include Old-field Cinquefoil (*Potentilla simplex*), Lady's Thumb (*Polygonum persicaria*), Common Dandelion (*Taraxacum officinale*), dock (*Rumex* sp.), Purple Loosestrife (*Lythrum salicaria*) and goldenrod (*Solidago* spp.). Mosses and lichens are present on the rocks. Sedges and rushes are among the common emergent aquatic species growing from a few underwater crevices.



Figure 10: Sand and gravel beach and mound at Mohawk Island National Wildlife Area, 2015
Jeff Robinson © Environment and Climate change Canada, Canadian Wildlife Service



Figure 11: Exposed limestone and sparse vegetation at Mohawk Island National Wildlife Area, 2006
© Environment and Climate Change Canada, Canadian Wildlife Service

Like Scotch Bonnet Island, Mohawk Island also once had more vegetation, with grassy flats, low shrubs and several trees. By 1956, much of the vegetation had been destroyed, probably as a result of gull activity and wave scour (Beardslee and Mitchell, 1965). Willows (*Salix* spp.) and Eastern Cottonwood (*Populus deltoides*) saplings observed on the island in the 1980s are no longer present.

Because these barren limestone islands now lack the buffering effect of vegetation and are exposed to frequent storm events, the potential for natural regeneration at both sites is very low, and new vegetation is unlikely to persist.

2.2 WILDLIFE

2.2.1 Birds

Birds at Scotch Bonnet Island NWA

As stated, both islands are important nesting, loafing and roosting sites for colonial waterbirds. They provide a safe place for adults to breed and raise their young and a safe area for loafing and roosting by non-breeding birds. Both islands are safe refuges from predators and an easy access point for foraging in nearby waters. The two islands contain a similar assemblage of species, with key differences. These are outlined below.

The primary nesting species of colonial waterbirds found on Scotch Bonnet Island NWA are Double-crested Cormorants (*Phalacrocorax auritus*) and Herring Gulls (*Larus argentatus*). In addition to these two species, Black-crowned Night Herons (*Nycticorax nycticorax*) and Great Black-backed Gulls (*Larus marinus*) also have nested on Scotch Bonnet Island but do not do so at present. Nesting data for colonial waterbirds on Scotch Bonnet Island NWA can be found in Appendix 1.

The Double-crested Cormorant was the first colonial waterbird documented nesting on Scotch Bonnet Island; in 1938, 6 pairs were noted nesting (Appendix 1). Over the next 17 years, this number ranged up to 200 nests (Appendix 1). From 1952 to 1992, the number of nesting pairs declined dramatically and ranged from 0 to 29. During the late 1950s to the early 1970s, the species was almost wiped out across the Great Lakes due to the effects of toxic chemicals and human persecution (Price and Weseloh, 1986; Weseloh *et al.*, 1995, 2002). In 1993, cormorants showed a dramatic comeback and growth spurt on Scotch Bonnet Island, when 260 nests were counted there. Since then, numbers have fluctuated, peaking at 985 nests in 2006; there were 759 nests in 2010 (Appendix 1, Weseloh *et al.*, 2002, 2003, unpublished data). In 2010, the cormorant colony on Scotch Bonnet Island was the 11th largest on Lake Ontario, and

contained 2.4% of cormorant nests within both U.S. and Canadian waters of Lake Ontario (Weseloh *et al.*, 2010, unpublished data). The cormorants have always nested in the raised centre portion of the island and on the ruins of the stone lighthouse and keeper's house. Non-breeding birds also use the site for roosting, and large numbers can be found there in the autumn.

Herring Gulls were first recorded nesting on Scotch Bonnet Island in 1950, when 550 nests were noted (Appendix 1). This is the largest number of Herring Gull nests that has ever been recorded on the island, by more than a factor of two, and may have been an overestimate. Since then the numbers have fluctuated up to a peak of 246 nests in 1995 and have averaged 133 nests per year (N=25 years). Numbers have not exceeded 200 pairs since 1998; there were 128 nests in 2010 (Appendix 1). During the last complete census of nesting colonial waterbirds in the Canadian waters of Lake Ontario (2008), Scotch Bonnet Island ranked as the third largest of 24 Herring Gull nesting sites, behind Gull Island and Pigeon Island. It held 11.5% of the total nests on Lake Ontario in 2008. Herring Gulls nest throughout the island on both the raised central portion and on the exposed limestone. Immature Herring Gulls use the island as an overnight roosting area throughout the summer. In the early 1970s, Herring Gull eggs from Scotch Bonnet Island were monitored annually for contaminant concentrations (Gilbertson, 1974, 1975; Gilbertson and Hale, 1974a, 1974b; Gilbertson *et al.*, 1976). The island is not part of the annual Great Lakes Herring Gull Monitoring Program (Mineau *et al.*, 1984; Pekarik and Weseloh, 1998; Hebert *et al.*, 1999), but it is a site used for the monitoring of Herring Gulls as part the colonial waterbird monitoring program (Fox *et al.*, 2007a, 2007b).

Two other species of colonial waterbirds are known to have nested on Scotch Bonnet Island in the recent past, but only for short periods of time. Great Black-backed Gulls were noted nesting on 5 occasions between 1986 and 2001, with a maximum of 5 nesting pairs in 1999 and 2001 (Appendix 1). It is uncertain when this species ceased to nest on Scotch Bonnet Island. The island is not visited every year; even when it is, nesting Great Black-backed Gulls can be hard to confirm as they often flush from their nest, and the island, at the first sign of an approaching boat. In 2004, and every year since then, there have been re-occurring outbreaks of Type E botulism in Lake Ontario. This species has proven to be very sensitive to this disease and has died off at all nesting colonies on Lake Ontario, i.e., Little Galloo, Pigeon and Snake Islands as well as Scotch Bonnet Island. Their numbers have declined from over 40 nesting pairs to 0, and botulism has been found in all dead birds that have been necropsied (Campbell

et al., 2009; Shutt *et al.*, 2010). When Great Black-backed Gulls nested on Scotch Bonnet Island, they nested on the east end of the raised central portion of the island.

The other species of colonial waterbird that is known to have nested on Scotch Bonnet Island is the Black-crowned Night Heron. It was recorded nesting on the island in 3 years between 1990 and 1994, in numbers ranging from 27 to 17 pairs (nests) (Appendix 1). The herons nested in the small trees/bushes immediately west of the lighthouse and keeper's house. When the herons started nesting there, there were no cormorants nesting on the island (Appendix 1). By 1994, when there were nearly 600 pairs of cormorants nesting there, some of which had started nesting in the same small trees as the herons, the number of heron nests declined by more than 35%. Black-crowned Night Herons were not observed nesting again on Scotch Bonnet Island after 1994 and, presumably, were driven away by the cormorants, who eventually took over all heron nests in the small trees.

The role of Scotch Bonnet Island, at least with respect to cormorants, has switched from being the primary colony nucleus in the 1940s to being an alternative nesting habitat for the growing population; other nearby islands have greater populations now (Price and Weseloh, 1986; Weseloh *et al.*, 1995, 2002, 2003).

Other bird species reported nesting on the island include Canada Goose (*Branta canadensis*) (1984, one nest) and Rock Doves (*Columba livia*). Non-breeding Common Terns (*Sterna hirundo*) and Caspian Terns (*Hydroprogne caspia*) are observed regularly in the waters around the island. Ring-billed Gulls (*Larus delawarensis*) are seen often near Scotch Bonnet Island but have never been reported breeding there.

In spring and fall, the island is a stopover site for migratory birds, especially waterfowl and shorebirds. Several species of ducks, e.g., scoter species and Common Merganser (*Mergus merganser*), use the surrounding nearshore water during migration and winter, with only a few dabbling ducks using the island itself. During migration, it is not uncommon to see thousands of scaup species and Long-tailed Ducks (*Clangula hyemalis*) using the waters around Scotch Bonnet Island NWA and the embayments along the Prince Edward County shoreline. Consequently, this area is considered to be an important area in eastern Ontario for staging waterfowl (Dennis *et al.*, 1984; OEHJV, 2007) (Appendix 3).

Birds at Mohawk Island NWA

At Mohawk Island NWA, the primary nesting species are Herring Gulls, Ring-billed Gulls, Double-crested Cormorants and Caspian Terns. The Herring Gull and Double-crested Cormorant colonies are the largest colonies in eastern Lake Erie, and the Caspian Tern colony is the only one in Lake Erie (Hebert *et al.*, 2008; Weseloh, 2010a). Common Terns have nested intermittently and Great Black-backed Gulls have nested on fewer than five occasions (Peck and James, 1994; Moore *et al.*, 2007, 2008; Weseloh and Moore, 2009). Colonial waterbird nest data for Mohawk Island NWA can be found in Appendix 2.

Herring Gulls were first recorded nesting on the island in 1943 (Appendix 2). Their numbers built up slowly, and by 1966, 200 nests were recorded. Since then, nest numbers have fluctuated mostly between 200 and 250 nests. Their peak of 259 nests was reached in 1980 (Appendix 2). The 253 nests recorded on Mohawk Island in 2007 represent 10.1% of the Herring Gull nests on Lake Erie (Weseloh *et al.*, 2010, unpublished data).

Ring-billed Gulls were first recorded nesting on Mohawk Island in 1943, when 26 nests were recorded (Appendix 2). Their population grew much more quickly than the Herring Gull population; 300 nests were reported in 1950, and the population increased until it peaked at 6300 nests in 1964 (Beardslee and Mitchell, 1965; Ludwig, 1974; Haymes, 1977). Since then, the population has fluctuated in the range of 1500–2400 nests annually (Appendix 2, Morris, 2010; Weseloh, 2010b). The 2201 Ring-billed Gull nests recorded on Mohawk Island in 2010 accounted for 6.1% of the nests in Lake Erie (Weseloh *et al.*, 2010, unpublished data).

Double-crested Cormorants are a more recent arrival on Mohawk Island. In 1983, they established a colony with 16 nests (Clark *et al.*, 1983). Census data show that the nesting population has increased steadily, reaching a peak of 1586 nests in 2008 (Appendix 2). In 2009, there were approximately 800 pairs (de Solla, 2009, unpublished data). The overall dramatic increase in the Double-crested Cormorant population on Mohawk Island is consistent with population increases throughout the Great Lakes (Weseloh *et al.*, 1995, 2002, 2003, 2009; Hebert *et al.*, 2008). By 2009, Mohawk Island contained 9% of the cormorant nests recorded in all of Lake Erie (Weseloh *et al.*, 2010, unpublished data).

Caspian Terns have nested on Mohawk Island annually since 1996, when 40 nests were discovered by Dr. Laird Shutt and his crew in an area of Zebra Mussel and Quagga Mussel shell deposition, on the southeast shore of the island (Weseloh, 2010a). Their nest numbers have

fluctuated but grown steadily, and Mohawk Island now represents a regionally important nesting area for Caspian Terns; the 300 nests recorded in 2007 represented all the nests in Lake Erie and 10.3% of the nests in the Great Lakes (Weseloh *et al.*, 2010, unpublished data). Caspian Tern nests are found exclusively in the area where Zebra and Quagga Mussel shells have been deposited (Weseloh, 2010a) (Figure 12,13).



Figure 12: Caspian Tern adults and chicks on Zebra and Quagga Mussel shells at Mohawk Island National Wildlife Area, July 2012

Photo: Denby Sadler © Environment and Climate Change Canada, Canadian Wildlife Service

Common Terns were formerly the predominant species nesting on Mohawk Island, with an estimated high of 1400–1800 pairs in 1946 (Beardslee and Mitchell, 1965). By 1960, tern numbers had dropped and gull numbers had increased, coinciding with a decrease in vegetation on the island. The Common Tern population on the island has fluctuated since that time, but no Common Terns have been observed nesting on the island since 2004 (Morris, 2010; Appendix 2).

The first Great Black-backed Gull nest record on Lake Erie was recorded on Mohawk Island NWA in 1991 (Peck and James, 1994). Since 1991, Great Black-backed Gulls nest very intermittently on the island, with single nests reported in 1993 and 1996 (Moore *et al.*, 2007, 2008).

Although the numbers of colonial waterbird species present vary annually, each bird species usually nests in the same approximate location on Mohawk Island (Weseloh and Moore, 2009). General nesting areas for each species have been mapped and are shown in Figure 13. Nesting colonial waterbirds on Mohawk Island are particularly vulnerable to wave action. For example, in early June 2010, virtually all the Caspian Tern nests on Mohawk Island were destroyed when a large standing wave (seiche) caused the water level in eastern Lake Erie to rise by almost one metre, washing over the island (King and de Solla, 2010).



Figure 13: Mohawk Island National Wildlife Area colonial bird use 2000–2009
Map source: Environment and Climate Change Canada, Canadian Wildlife Service, Ontario, 2016

A number of bird species use Mohawk Island NWA as a loafing or stopover site, or pass through as migrants. This includes many gulls and terns, various waterfowl species, and a few shorebirds (Appendix 3).

At least 20 species of waterfowl have been recorded on the NWA or in the nearshore waters of the island (i.e. within 1.5 km of the shoreline) since 1970 (CWS, unpublished data; Dennis and Chandler, 1974; Dennis *et al.*, 1984) (Appendix 3). Waterfowl such as Mallard Ducks (*Anas platyrhynchos*), Canada Geese (*Branta canadensis*), Common Goldeneyes (*Bucephala clangula*), scaup (*Aythya* spp.) and shorebirds such as sandpipers (*Calidris* spp.)

use the Mohawk Island area when crossing Lake Erie during migration. Since the 1980s, the use of the area by Mallards, American Black Ducks and Canada Geese has increased, while the numbers of diving and sea ducks have declined slightly. For example, the number of Mallards and American Black Ducks using the area increased two-fold while Canada Geese increased thirteen-fold between the surveys in 1970–1980 and 1990–2000, respectively. Mohawk Island NWA and its nearshore waters are considered to be of secondary importance for migrating waterfowl, especially in comparison with areas further west on Lake Erie, such as Long Point (Dennis *et al.*, 1984; OEHJV, 2007).

Some rare sightings that have been recorded over the years include two Glaucous Gull (*Larus hyperboreus*) specimens from dead or injured birds found on the island in 1975 and 1976 that are in the Buffalo Museum of Science. A Brown Pelican (*Pelecanus occidentalis*) was recorded on the island in 1991 by Ralph Morris's Brock University students (Moore, personal communication, 2009). A variety of herons, egrets and shorebirds have been seen along Rock Point, the mainland shore closest to the island, and some of these species may also be present at or near Mohawk Island NWA.

2.2.2 Other Wildlife

No other wildlife species have been recorded on Scotch Bonnet Island NWA. On Mohawk Island NWA, the only vertebrate species observed is the Eastern Garter Snake (*Thamnophis sirtalis sirtalis*), which lives among the foundations of the lighthouse. The sparse terrestrial vegetation on these islands offers little cover or food for vertebrate residents.

2.3 SPECIES AT RISK

No species at risk have been recorded on Scotch Bonnet Island NWA or on Mohawk Island NWA.

3 MANAGEMENT CHALLENGES AND THREATS

3.1 LAKEWIDE THREATS TO COLONIAL WATERBIRDS AND THEIR HABITAT

There are many challenges and threats that have significant impacts on colonial waterbirds throughout the southern Great Lakes. Colonial waterbirds are fish-eating species and are dependent on the aquatic resources of the Great Lakes. Recent key threats to the health of the Great Lakes that have affected colonial waterbird nesting areas include botulism, diseases, management activities (primarily on the U.S. side of the Great Lakes but occasionally on the Canadian side), non-native invasive aquatic (fish) species, extreme weather and human disturbance from recreational activities. More traditional threats include non-point source pollution, toxics and incompatible development.

3.2 UNAUTHORIZED ACCESS AND TOURISM

The waters surrounding both of these islands are a popular destination for sailing and power boating in the summer months. Since these protected areas were established, population growth in nearby urban centres and increased recreation and tourism have resulted in an increase in visitors to the NWAs. Noise and wave action from boats, as well as the presence of humans, are known to cause nesting colonial waterbirds to flush off their nest, or in some cases abandon nests, eggs and young, leaving nests vulnerable to predation (Carney and Sydeman, 1999; Cuthbert and Wires, 1999). Prolonged visits to the islands, or boating close to the shore during the breeding season, may also disturb nesting, roosting and loafing birds (Carney and Sydeman, 1999).

Although entry to Scotch Bonnet Island NWA is prohibited and access to Mohawk Island NWA is seasonally prohibited, there has been evidence at both sites of public access and disturbance to birds during the nesting period (Moore, personal communication, 2012). Destruction of Double-crested Cormorant nests, garbage dumping, open fires, vandalism and damage to signs have also been reported, causing disturbance to nesting birds and additional pressures on staff resources.

Local tourism promotional materials reflect a general lack of understanding about the *Canada Wildlife Act*, *Wildlife Area Regulations*, and prohibited access and activities. For example, visits to Scotch Bonnet Island NWA and opportunities to view colonial nesting birds are among listed attractions in local promotional material. Public visitors are believed to be from

both Canada and nearby U.S. states, making it difficult to deliver safety and compliance messaging to various audiences.

3.3 PHYSICAL SETTING

The physical setting of these islands presents management challenges. The exposed bedrock and jagged shoreline make authorized access difficult. Visits to the islands for site inspections and research and surveying are often hindered by strong winds and inclement weather. Because there is no full-time staff on site, compliance promotion, prevention of prohibited activities and enforcement of regulations can be difficult.

3.4 HEALTH AND SAFETY

Maintaining safe access for authorized visitors, and securing the required resources and expertise to meet federal standards for built structures, has been an ongoing challenge. It is further exacerbated by the remoteness of both sites.

The deteriorating Victorian-era stone lighthouses also pose health and safety risks. In 2009, staff reported that large portions of the lighthouse at Scotch Bonnet Island NWA were eroded. The remaining structure and stone rubble pile are extremely hazardous and pose an immediate threat to authorized visitors to the island. It is no longer feasible to preserve or restore this structure in its entirety. In 2010, Canadian Wildlife Service biologists reported that portions of the Mohawk Island lighthouse had eroded and formerly blocked windows and entry points are no longer blocked, posing a potential safety hazard to any visitors who attempt to enter the structure. The feasibility of preserving this structure is not known. Entry to the stone lighthouse structures at both Scotch Bonnet Island NWA and Mohawk Island NWA is prohibited.

The Canadian Wildlife Service will work with its partners and the public to develop options to improve safety for authorized visitors to these islands, while considering the heritage values associated with these lighthouses.

3.5 INCREASED DEVELOPMENT

In recent years, there has been significant human population growth and associated development along the shore of the lower Great Lakes. As the population continues to expand, it is expected that development pressures on islands and the mainland, and use of the nearshore and recreational boating, will also increase. Development activities along the Great Lakes shoreline north of these protected areas could have adverse effects on the habitats and wildlife of the NWAs. For example, additional recreational facilities could lead to increased boat

traffic, and the potential for construction of wind turbines could impact migrating and possibly foraging birds.

Increased shipping also raises the risks of oil or chemical spills that could cause the contamination of water.

3.6 PREDICTED CLIMATE CHANGE SCENARIOS

Current models predict that climate change will lead to warmer air temperatures, lower lake levels and warmer water temperatures due to a decrease in winter ice cover and subsequent increased evaporation. Although the impacts of climate change on colonial waterbirds are unknown, it is expected that there will be shifts in the range, distribution and breeding behaviour of the various species that frequent these NWAs.

Table 3: Management approaches for Scotch Bonnet Island and Mohawk Island National Wildlife Areas

| Management challenges and threats | Goals and objectives | Management approaches¹ (action including level of priority)² |
|---|---|---|
| <ul style="list-style-type: none"> • Lakewide threats to colonial waterbird populations in the Great Lakes • Remote location and physical setting | <p>Goal 1: Conserve and manage wildlife and habitat</p> <p>1.1 Sub-goal: Maintain habitat for colonial nesting waterbirds and a variety of migratory bird species.</p> <p>Objectives:</p> <p>a) Natural processes and natural succession are allowed to occur with minimal intervention, subject to monitoring, survey or research results (section 5.1).</p> <p>b) Habitat will only be managed (e.g. invasive species removal) to maintain existing habitat</p> | <p>Monitoring, survey and research</p> <ul style="list-style-type: none"> • Conduct decadal Great Lakes Colonial Waterbird and lower decadal Great Lakes Migrant Waterfowl surveys. (3) • Continue surveillance of toxic substances and reproductive success in colonial waterbird populations. (2) • Conduct site visits to survey ecological integrity, assess management actions and public activities, and identify potential threats to habitat and wildlife. (1) • Survey the current extent and habitat conditions of the colonial waterbirds' nesting, roosting and loafing areas. (1) • Survey changes in habitat over time. (2) • Survey seasonal habitat use (including nearshore waters and built structures) |

¹ The management approaches identified here apply at both Scotch Bonnet Island NWA and Mohawk Island NWA, unless otherwise specified.

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

| Management challenges and threats | Goals and objectives | Management approaches¹ (action including level of priority)² |
|--|---|--|
| | <p>quantity and quality for colonial nesting waterbirds and/or seasonal migrants, as deemed necessary by monitoring, survey or research results.</p> | <p>by waterbirds, waterfowl, shorebirds and landbirds. (2)</p> <p>Wildlife management</p> <ul style="list-style-type: none"> • As required, depending upon results of monitoring, survey and research. • Unless demonstrated otherwise, natural processes will be allowed to continue. <p>Habitat management</p> <ul style="list-style-type: none"> • As required, depending upon results of monitoring, survey and research. • Unless demonstrated otherwise, natural processes will be allowed to continue. <p>Management of invasive and non-native plants</p> <ul style="list-style-type: none"> • As required, depending upon results of monitoring, survey and research. |
| <ul style="list-style-type: none"> • Unauthorized access during nesting • Boating in nearshore disturbing waterfowl and migratory birds • Remote location and physical setting • Lack of understanding and awareness about prohibited activities and the protection afforded wildlife on NWAs • Health and safety risks | <p>Goal 2: Control prohibited activities</p> <p>2.1 Sub-goal: Prevent occurrence of prohibited activities and promote compliance with the <i>Canada Wildlife Act</i> and <i>Migratory Birds Convention Act, 1994</i>, and encourage timely reporting of hazardous conditions and occurrences.</p> <p>Objectives:</p> <p>a) Authorized visitors understand the prohibitions of the <i>Wildlife Area Regulations</i>.</p> | <p>Survey</p> <ul style="list-style-type: none"> • Undertake site visits to inspect and maintain signs, survey shoreline and island for hazards, and document changes to the site or infractions. (1) • Review the status of existing collaborative arrangements and permits, revise and renew as appropriate. (2) <p>Risk assessment and mitigation</p> <ul style="list-style-type: none"> • Replace/install signs to include prohibited uses and contact information to report incidents or hazardous conditions. (1) • Document and report the number and nature of incidents where evidence exists of illegal activities within the NWA to Environment and Climate Change Canada's Wildlife Enforcement Directorate, and take remedial action where appropriate. (1) <p>Public information and outreach</p> <ul style="list-style-type: none"> • Provide information on prohibited uses, management actions, safe practices and reporting procedures to authorized visitors (e.g. other federal departments, research permit holders), the public and stakeholders. (1) |

| Management challenges and threats | Goals and objectives | Management approaches ¹ (action including level of priority) ² |
|---|--|--|
| | | <ul style="list-style-type: none"> Communicate with local tourism operators and the Ontario Ministry of Tourism regarding the protected status of these areas and possible cumulative environmental impacts of unauthorized visitors on nesting and migratory birds. (1) |
| <ul style="list-style-type: none"> Remote location and physical setting: rocky shoreline makes access difficult, often impeded by weather Health and safety risks | <p>Goal 3: Promote health and safety</p> <p>3.1 Sub-goal: Reduce and mitigate health and safety risks and hazards associated with authorized visits.</p> <p>Objectives:</p> <ol style="list-style-type: none"> Risks have been assessed and measures implemented to ensure the safety of authorized visitors, including measures to deal with landing and mooring locations and risks associated with existing built structures (e.g. concrete breakwall at Scotch Bonnet Island NWA, stone lighthouse ruins). In accordance with the <i>Heritage Lighthouse Protection Act</i>, lighthouse structures are allowed to decay by natural processes, with active intervention undertaken for health and safety reasons only. <p>3.2 Sub-goal: Communicate health and safety risks to authorized visitors.</p> <p>Objectives:</p> <ol style="list-style-type: none"> Target audiences and collaborators are aware of health and safety risks to authorized visitors (e.g. through signage, notices and outreach materials). The status of existing collaborative arrangements | <p>Risk assessment and mitigation</p> <ul style="list-style-type: none"> Meet with Fisheries and Ocean Canada and Parks Canada Agency, as owners and custodians of built structures, to assess the health and safety risks related to existing built structures (e.g. steel navigation tower, concrete breakwall, stone lighthouse ruins) and develop and implement plans to address immediate health and safety risks to authorized visitors. (1) Renew collaborative arrangements with other federal departments (e.g. Fisheries and Oceans Canada) and implement guidelines for access in order to avoid and reduce disturbance to colonial nesting birds. (1) <p>Public information and outreach</p> <ul style="list-style-type: none"> Communicate safe practices for authorized visitors, including the general public (i.e. for Mohawk Island NWA). (1) |

| Management challenges and threats | Goals and objectives | Management approaches¹ (action including level of priority)² |
|--|---|---|
| | and permits has been reviewed and renewed as appropriate. | |

4 GOALS AND OBJECTIVES

4.1 VISION

The long-term vision for both Scotch Bonnet Island NWA and Mohawk Island NWA is conservation: to maintain and enhance habitat for native wildlife and plants, with priority being given to colonial nesting waterbirds.

4.2 GOALS AND OBJECTIVES

The primary management goal for these two NWAs is to ensure that the colonial nesting waterbirds are protected from outside disturbances, in order to promote the long-term persistence of these colonies. To ensure that this goal is attained, more specific goals and objectives have been identified. However, these NWAs are small, remote sites where active management is not required. Management activities are limited to immediate needs and planned visits. Hence, the goals and objectives listed below reflect a “hands-off” management approach. The monitoring and survey approaches below in section 5.1 provide additional information on how the overall goals are addressed.

Goal 1: Conserve and manage wildlife and habitat.

1.1 Sub-goal: Maintain populations of and habitat for colonial nesting waterbirds and a variety of migratory bird species.

- a) Objective: Natural processes and natural succession are allowed to occur with minimal intervention, subject to monitoring, survey or research results (section 5.1).
- b) Objective: Habitat will only be managed (e.g. invasive species removal) to maintain existing habitat quantity and quality for colonial nesting waterbirds and/or seasonal migrants, as determined to be necessary by monitoring, survey or research results.

Goal 2: Control prohibited activities.

2.1 Sub-goal: Prevent occurrence of prohibited activities and promote compliance with the *Canada Wildlife Act* and *Migratory Birds Convention Act, 1994*, and encourage timely reporting of hazardous conditions and occurrences.

- a) Objective: Authorized visitors understand the prohibitions of the *Wildlife Area Regulations*.

Goal 3: Promote health and safety.

3.1 Sub-goal: Reduce and mitigate health and safety risks and hazards associated with authorized visits.

- a) Objective: Risks have been assessed and measures implemented to ensure the safety of authorized visitors, including measures to deal with landing and mooring locations and risks associated with existing built structures (e.g. concrete breakwall at Scotch Bonnet Island NWA, stone lighthouse ruins).
- b) Objective: In accordance with the *Heritage Lighthouse Protection Act*, lighthouse structures are allowed to decay by natural processes, with active intervention undertaken for health and safety reasons only.

3.2 Sub-goal: Communicate health and safety risks to authorized visitors.

- a) Objective: Target audiences and collaborators are aware of health and safety risks to authorized visitors (e.g. through signage, notices and outreach materials).
- b) Objective: The status of existing collaborative arrangements and permits has been reviewed and renewed as appropriate.

4.3 EVALUATION

Site visits to Scotch Bonnet Island NWA and Mohawk Island NWA will be performed within the limits imposed by financial and human resources. Ideally, Environment and Climate Change Canada will strive for the completion of an annual site visit by a staff member in coordination with Ontario's protected areas team and other departmental sections and branches. The management plan will be reviewed in 5 years, and every 10 years thereafter. Evaluation will comprise a review of monitoring, survey and research data obtained from the projects outlined below. These data and the review will be used to inform future management as well as to evaluate federal contributions towards accomplishing the Environment and Climate Change Canada mandates for which the protected area was established. Significant additions of new information may be appended to the management plan as required, to aid in site management and decision making.

5 MANAGEMENT APPROACHES

This section describes a range of possible approaches that could be used in the management of Scotch Bonnet Island NWA and Mohawk Island NWA. However, management actions will be determined during the annual work planning process, and will be implemented as human and financial resources allow.

The overall management philosophy for these islands will be to protect and preserve the nesting habitat of colonial waterbirds through a “hands off” approach.

5.1 MONITORING

Monitoring and survey projects at each of these protected areas will continue to occur, within the limits of financial and human resources as noted above.

Monitoring of colonial nesting waterbird and migrant bird use within these NWAs and their nearshore waters occurs as part of decadal surveys in order to contribute to the knowledge of birds and their habitat, and to respond to any emerging issues (Figure 14). Ad hoc surveys may also be conducted as appropriate.

Current monitoring and survey projects at or encompassing the Scotch Bonnet Island NWA and the Mohawk Island NWA include the following:

- a project on surveillance of toxic substances in wildlife through monitoring of colonial waterbird residue levels and reproductive success, lake waters, and food sources;
- the assessment of avian mortality during the post-breeding season;
- decadal surveys of colonial waterbirds in the Great Lakes;
- decadal surveys of migrant waterfowl in the lower Great Lakes;
- cooperative research with the United States Department of Agriculture – Wildlife Services to monitor populations of Double-crested Cormorants in the Great Lakes.

Other general site surveying activities include the following:

- ongoing reporting of site conditions, public use and occurrences of prohibited activities;
- effects of human disturbance on nesting colonial waterbirds;
- reporting of vandalism or damage to facilities;

- waste removal;
- installation or replacement of NWA regulatory signage.

Periodic formal site assessments of these islands will also be performed by federal agencies (e.g. Fisheries and Ocean Canada, Parks Canada Agency) as needed. Occasional visits by Environment and Climate Change Canada's Wildlife Enforcement Directorate staff, particularly during colonial waterbird nesting periods, will occur, and enforcement actions will be taken when required.



Figure 14: Chip Weseloh (Canadian Wildlife Service) completing Caspian Tern nest count on ridge of Zebra and Quagga Mussel shells, Mohawk Island National Wildlife Area, 2007
Photo: © Environment and Climate Change Canada, Canadian Wildlife Service

5.2 RESEARCH

Colonial waterbirds at these NWAs have been extensively studied by the Canadian Wildlife Service—Ontario Region and Environment and Climate Change Canada's Wildlife and Landscape Science Directorate.

The research data will be shared and may be incorporated into larger studies investigating the health of the various species over their ranges (e.g. Bird Conservation Region planning, Lake Ontario and/or Lake Erie Lakewide Management Plans, Great Lakes toxics monitoring, State of the Lakes Ecosystem Conference reporting).

Applied scientific activities will be considered for permitting under the *Wildlife Area Regulations* only when the results from the research have the potential for:

- surveillance of toxic substances and reproductive success in colonial waterbird populations;
- investigation of other threats to bird populations;
- determining historical and/or cultural significance of structures on the islands, where supported by responsible federal authorities; or
- other significant conservation benefits, as determined by Environment and Climate Change Canada.

Permits are required to conduct research, survey and monitoring projects at Scotch Bonnet Island NWA and Mohawk Island NWA. All research requests must be made in writing to the Canadian Wildlife Service, Ontario Region. To request a *Canada Wildlife Act* (CWA) permit to conduct research, or to obtain information, please contact the Canadian Wildlife Service as follows:

Environment and Climate Change Canada, Canadian Wildlife Service
Ontario Region
867 Lakeshore Road
Burlington ON L7R 4A6
Tel.: 905-336-4464
Fax: 905-336-4587
Email: wildlife.ontario@ec.gc.ca

The Canadian Wildlife Service may impose conditions on the permit or require changes to the research design to standardize techniques, mitigate impacts, or meet protocols and animal care guidelines. Conditions may require that specific measures or restrictions be followed in order for the study to proceed. Issuance of a CWA permit may be denied if the Canadian Wildlife Service determines that the conditions as described in Appendix 4 are not met.

5.3 RISK ASSESSMENT AND MITIGATION

The Canadian Wildlife Service will post signs and public notices to communicate any potential health and safety risks associated with visits to the Scotch Bonnet Island NWA and Mohawk Island NWA. The Canadian Wildlife Service will work with Fisheries and Oceans Canada and the Parks Canada Agency and other federal partners to assess current conditions,

complete monitoring and survey work, and make plans to mitigate threats to authorized and unauthorized visitors.

5.4 PUBLIC INFORMATION AND OUTREACH

Public involvement and outreach activities are designed to enhance public understanding and appreciation of the important conservation role of these NWAs for colonial waterbirds, and to encourage public cooperation in wildlife conservation. Measures will be taken to reduce and mitigate the potential negative effects of human disturbance (e.g., recreational boating, researchers, wildlife viewing) on nesting waterbirds at Mohawk Island NWA and Scotch Bonnet Island NWA. Visitors and recreation activities in the nearshore will be discouraged during the breeding season (between April and August).

On-site awareness programs are not planned at either of these NWAs, due to access restrictions. Signage at these protected areas will be reviewed and updated periodically to ensure that it provides clear direction to visitors on permitted and prohibited activities.

Public notices will be posted at boating facilities, marinas and boat launches. All signs, public information and notices will include contact information to report incidents of prohibited activities observed by visitors. More general information on NWAs, including Scotch Bonnet Island NWA and Mohawk Island NWA, is posted on the Protected Areas website³.

5.5 HABITAT MANAGEMENT

There has been no active habitat or vegetation management on either island. Rather, natural processes have been allowed to occur unimpeded, with the primary focus of ensuring that human activities do not interfere with bird nesting or disturb habitat.

5.6 WILDLIFE MANAGEMENT

There has been no active wildlife management at either of these NWAs in the past. Natural processes have been allowed to occur unimpeded. Protection and preservation of nesting habitat for colonial nesting waterbirds will be mainly achieved through limitation of human disturbance. As per the CWA, all wildlife species are protected within these areas.

³ Available at www.ec.gc.ca/pa-ap.

Colonial nesting waterbirds will continue to be monitored as part of broader survey efforts, and threats will be assessed. Active management actions at Scotch Bonnet Island NWA and/or Mohawk Island NWA may be undertaken if the need arises. However, certain threats to the birds (e.g. changes in food resources, weather events, increased incidence of botulism, toxics, disease, and bird mortality) are considered to be beyond the influence of localized management approaches.

5.7 MANAGEMENT OF ALIEN AND INVASIVE SPECIES

Actions to control invasive species have not been undertaken at either island. To date, no invasive plant species have been reported at Scotch Bonnet Island NWA. Purple Loosestrife is the only invasive plant observed at Mohawk Island NWA, and it is not considered to be causing any problems for wildlife at the site. Mute Swans, Quagga Mussels and Zebra Mussels have also been observed at Mohawk Island NWA; Caspian Terns nest exclusively on the shells of these exotic mussels.

The need for invasive species management will be assessed upon completing site visit survey work. Activities to control invasive or non-native species will be considered only if the species are determined to be causing significant problems for wildlife using these areas.

5.8 CULTURAL HERITAGE CONSERVATION

Each of these islands and their surrounding waters has local and regional cultural heritage significance as part of a Great Lakes shipping and navigation route. Many shipwrecks occurred around Scotch Bonnet Island and Mohawk Island, and cultural and historical artefacts occasionally drift ashore. Artefacts found in these NWAs fall under the jurisdiction of Environment and Climate Change Canada. Appropriate measures will be taken to protect these objects, through direct involvement of government or non-government agencies.

Public safety is of the utmost priority in managing existing heritage structures. In accordance with the *Heritage Lighthouse Protection Act*, lighthouse structures will be allowed to decay by natural processes, with active intervention undertaken for health and safety reasons only.

6 AUTHORIZATIONS AND PROHIBITIONS

To protect and conserve wildlife and their habitats, human activities are minimized and controlled in NWAs through the implementation of the *Canada Wildlife Act* and *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 NWAs that are otherwise considered prohibited. The regulations also provide the authority for the Minister to prohibit entry into NWAs.

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

6.1 PROHIBITION OF ENTRY

Under the *Wildlife Area Regulations*, the Minister may 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 and when entry may disturb wildlife and wildlife habitat.

Public entry to Scotch Bonnet Island NWA is prohibited except by *Canada Wildlife Act* permit. The notices of prohibited entry are posted on NWA signs on the north and east sides of the island, at public boat launches, and in various public information and outreach materials. Entry to the stone lighthouse ruins is prohibited at all times.

Public access and activities at Mohawk Island NWA are restricted by the *Wildlife Area Regulations*. Entry to Mohawk Island NWA is not permitted from April 1 to August 31, except by a permit issued by the Canadian Wildlife Service under the *Canada Wildlife Act*. Signs are posted on the island. On Mohawk Island NWA, overnight camping, open fires, hunting and use of vehicles are prohibited at all times. Entry to the stone lighthouse structures is prohibited at all times.

6.2 AUTHORIZED ACTIVITIES

Scotch Bonnet Island NWA

Public access to Scotch Bonnet Island NWA is prohibited year round, except by *Canada Wildlife Act* permit for research, survey and monitoring purposes. Boats are prohibited from landing on Scotch Bonnet Island at all times.

The only authorized activities open to the public include:

- recreational boating in the nearshore area; and
- wildlife viewing from offshore.

Mohawk Island NWA

Public access to Mohawk Island NWA is permitted from September 1 through March 31, for day use only, from sunrise to sunset. Signs are posted on the island clearly indicating the permitted dates of access. Authorized low-impact recreational uses at the island include:

- wildlife viewing;
- picnicking;
- recreational fishing from shore (no lead sinkers and spears);
- swimming; and
- boat landing (motorized and non-motorized boats).

However, use of the island by large numbers of birds, and the presence of bird feces, reduces the attractiveness of Mohawk Island NWA for many recreational uses. Visitors should be aware that they use the area and surrounding waters at their own risk.

Hunting is not permitted on or from Mohawk Island NWA.

If regular site visits to Mohawk Island NWA demonstrate that negative impacts are occurring as a result of public access, mitigation procedures oriented toward compliance and prevention will be promoted; if serious problems arise, further restrictive measures may be employed.

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 to the following address:

Environment and Climate Change Canada, Canadian Wildlife Service
Ontario Region
867 Lakeshore Road
Burlington ON L7R 4A6
Tel.: 905-336-4464
Fax: 905-336-4587
Email: wildlife.ontario@ec.gc.ca

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 Birds Convention Act, 1994* (December 2011) (Environment Canada, 2011). This Environment and Climate Change Canada policy document is available on the Protected Areas website at www.ec.gc.ca/ap-pa.

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 under the *Health of Animals Act* and *Plant Protection Act* that are intended to protect the health of animals and plants.

- Activities related to routine maintenance of NWAs, implementation of management plans and enforcement activities conducted by an officer or employee of Environment and Climate Change Canada.

Exceptions to the prohibited activities include, but are not limited to, activities outlined in Table 4.

Table 4: Exceptions to prohibited activities

| Exception to prohibited activity | Scotch Bonnet Island NWA | Mohawk Island NWA |
|--|--------------------------|-------------------|
| Public access to NWA between September 1 and March 31 (outside of breeding season), from sunrise to sunset, for limited recreational use | | x |
| Research, survey and monitoring of wildlife or habitat | | |
| Access to the stone lighthouse by Parks Canada Agency | | |
| Monitoring, operation and maintenance of navigation aids by Fisheries and Oceans Canada | | |

These activities are administered through posted notices, permits and formal collaborative arrangements. Visits to Scotch Bonnet Island NWA are coordinated through Environment and Climate Change Canada, Canadian Wildlife Service (Ontario Region) to avoid accidental interference of projects, duplication of effort or excessive disturbance to colonial and migratory birds.

All requests to the Canadian Wildlife Service for *Canada Wildlife Act* permits must be made in writing at least seven weeks prior to the commencement of proposed activities. *Canada Wildlife Act* permit requests will be denied if, in the opinion of the management authority, the proposed activity is not in the best interest of the protected area. Refer to Appendix 4 for conditions of research requests at National Wildlife Areas.

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 Scotch Bonnet Island NWA or Mohawk Island NWA.

Note: Provincial and federal permits and “seasons” apply for hunting and fishing adjacent to the NWAs.

Contact the federal or provincial permitting office for more information.

Federal:

Environment and Climate Change Canada, Canadian Wildlife Service
Ontario Region
867 Lakeshore Road
Burlington ON L7R 4A6
Tel.: 905-336-4464
Fax: 905-336-4587
Email: wildlife.ontario@ec.gc.ca

Provincial:

Ontario Ministry of Natural Resources and Forestry
300 Water Street
Peterborough ON K9J 8M5
Tel.: 1-800-667-1940

General prohibitions applicable to all NWAs apply to both Scotch Bonnet Island NWA and Mohawk Island NWA, unless notices to the contrary have appeared in local newspapers or have been posted at the site, or by authorized permit. Prohibitions can be found in the *Canada Wildlife Act*⁴ and *Wildlife Area Regulations*⁵.

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 prohibiting entry.

⁴ Available at <http://laws.justice.gc.ca/en/W-9/>.

⁵ Available at <http://laws.justice.gc.ca/en/showtdm/cr/C.R.C.-c.1609>.

7 HEALTH AND SAFETY

Activities along the Great Lakes shoreline and offshore islands pose several health and safety risks. Visitors to these islands often contend with high wind, weather, deep water, rocky shorelines and shoals. In general, visitors to the area must seek and heed specialized knowledge to safely operate in these environments, and obtain the required specialized training and certification.

All reasonable efforts will be made to protect the health and safety of the public. Furthermore, 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, authorized 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; proper precautions must be taken by visitors, recognizing that Environment and Climate Change Canada neither regularly patrols nor offers services for visitor safety in NWAs.

Management activities directed at improving health and safety, and at reducing the risk of a hazardous occurrence, may include the following:

- installation and/or replacement of signs identifying safety precautions, and authorized and prohibited uses;
 - posting of public notices at local boat launches and tourist operations;
 - communication with local tourism bodies, neighbouring landowners and stakeholders;
 - removal of building debris where appropriate;
 - regular site visits will be conducted to monitor facilities and infrastructure.
- Periodic formal assessments of facilities, infrastructure and site conditions may be performed by federal agencies.

In case of emergency at either NWA, call 911 immediately.

In the event of an environmental emergency or occurrence, please call the 24-hour telephone number below:

Ontario Spills Action Centre
Ontario Ministry of the Environment
Tel.: 416-325-3000 or 1-800-268-6060

Any emergency should be reported immediately to the appropriate responding authorities. Reports should include the date, time and nature of the incident, contact names and information of the reporting party, and other relevant details. Multiple authorities should be advised, if the situation warrants, as soon as possible. Refer to the list of contacts for Scotch Bonnet Island NWA (Appendix 5) and Mohawk Island NWA (Appendix 6).

Non-emergency issues related to security or health and safety issues for Scotch Bonnet Island NWA and Mohawk Island NWA should be reported to:

Environment and Climate Change Canada - Canadian Wildlife Service
Ontario Region
4905 Dufferin Street
Toronto ON M3H 5T4
Telephone: 1-800-668-6767
Email: enviroinfo@ec.gc.ca

8 ENFORCEMENT

To promote compliance with the *Canada Wildlife Act* and *Wildlife Area Regulations*, the Canadian Wildlife Service posts signs along the NWA boundaries and at main access points, that identify activities authorized within each NWA, and any conditions imposed on those activities.

Environment and Climate Change Canada's Wildlife Enforcement Directorate is responsible for enforcement of federal and provincial wildlife laws. Directorate officers perform on-site inspections and investigations, and patrol the NWA to promote compliance and prevent prohibited uses within the NWA. When necessary, charges will be laid.

The management of NWAs is based on three Acts and the regulations thereunder:

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

Officers monitor compliance with the Acts and regulations on an ongoing basis and will initiate investigations when required. Officials with Canadian Wildlife Service Ontario's Protected Areas and Stewardship Unit provide Enforcement Branch officials with details from site inspections that may require enforcement action.

9 PLAN IMPLEMENTATION

The management plan will be implemented over a 10-year period. 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.

The major action component of this plan consists of surveying, monitoring and review. Site inspections to both islands, combined with bird census data, will provide information to identify additional necessary management actions (e.g. signage, outreach), and to identify potential threats to wildlife and birds as well as the overall health of the colonial nesting bird colonies.

Table 5: Management plan implementation strategy 2015–2024 for Scotch Bonnet Island and Mohawk Island National Wildlife Areas

| Activity | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|------|------|------|------|------|------|------|------|------|------|
| Site inspection: Maintain signs (replace/install) and public notices | | | | | | | | | | |
| Document and report number and nature of incidents of illegal activities | | | | | | | | | | |
| Review permits and collaborative arrangements, revise and renew as appropriate | x | x | x | x | x | x | x | x | x | x |
| Develop and implement plan to address health and safety risks | | | | | | | | | | |
| Great Lakes decadal survey of breeding colonial waterbirds ¹ | | x | x | | | | | | | |
| Lower Great Lakes decadal survey of staging waterfowl ¹ | | | | x | | | | | | |

¹ Because decadal surveys are generally carried out over a three-year time period, it is difficult to indicate the year in which these sites would be surveyed. Different segments of shoreline are done each year. Scotch Bonnet Island would likely be done in a different year than Mohawk Island due to the different geographic locations.

9.1 MANAGEMENT AUTHORITIES AND MANDATES

Environment and Climate Change Canada, Canadian Wildlife Service, Ontario, is responsible for site management of Scotch Bonnet Island NWA and Mohawk Island NWA.

9.2 MANAGEMENT PLAN REVIEW

This management plan will be reviewed and updated 5 years after formal approval by Environment and Climate Change Canada, and every 10 years thereafter. Significant new information may be appended to the document as required, to aid in site management and decision making.

10 COLLABORATORS

In order to meet goals for on-site survey and monitoring, address legislative or policy requirements, and contribute to landscape conservation to ensure ongoing protection for nationally important spaces, Canadian Wildlife Service–Ontario works with other departmental branches; other federal agencies; provincial, municipal and regional governments; Aboriginal peoples; non-governmental organizations; and individuals.

Collaborative arrangements are in place at each of these NWAs. The Canadian Wildlife Service has a formal collaborative arrangement with Fisheries and Oceans Canada to maintain navigational structures on Scotch Bonnet Island and adjacent to Mohawk Island. A formal agreement within the transfer agreement also permits Parks Canada Agency to access the lighthouse at Scotch Bonnet Island NWA.

Staff at the following institutions have undertaken avian and ecological research at one or both islands: the Ontario Ministry of Natural Resources and Forestry, York University, McMaster University, Brock University, United States Fish and Wildlife Service, New York State Department of Environmental Conservation, Pennsylvania State University, University of Vermont, United States Department of Agriculture's Animal and Plant Health Inspection Service.

Informal arrangements have also been established with Environment and Climate Change Canada Wildlife and Landscape Science Directorate – Science and Technology Branch, the Ontario Ministry of Natural Resources and Forestry, and the United States Department of Agriculture – Wildlife Services, to monitor and share data on colonial waterbirds.

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APPENDIX 1: COLONIAL WATERBIRD NESTS AT SCOTCH BONNET ISLAND NATIONAL WILDLIFE AREA, LAKE ONTARIO 1938–2010

| Date | Double-crested Cormorant | Herring Gull | Black-crowned Night Heron | Great Black-backed Gull | Source/Notes |
|----------------|--------------------------|--------------|---------------------------|-------------------------|--|
| 1938 | 6 | * | | | G. McKeating, unpubl. data; Baillie 1947 |
| August 1939 | 40 | | | | G. McKeating, unpubl. data; Baillie 1947 |
| 18 July 1945 | 100 | | | | G. McKeating, unpubl. data (DCCOs nesting, but not counted; 200 adults present) |
| 12 August 1946 | 134 | | | | G. McKeating, unpubl. data (134 DCCO nests); Baillie 1947 (total DCCOs estimated at 200 breeding pairs, although only 134 nests counted) |
| 23 June 1950 | 154 | 500–600 | | | Francis 1950 |
| 1955 | | nesting | | | Anonymous 1955 |
| 1972 | 5 | 145 | | | CWS, unpubl. data |
| 1973 | 2 | 188 | | | CWS, unpubl. data |
| 1974 | | 109 | | | I. Price, pers. comm. |
| 1975 | | 101 | | | CWS, unpubl. data |
| 29 April 1976 | 0 | 85 | 0 | 0 | Blokpoel 1977. (14 April – 10 May 1976; max. HERG nests = 85 on 29 April 1976; no nesting RBGUs, CATEs or COTEs); H. Blokpoel, unpubl. data |
| 25 May 1977 | 0 | 227 | | | G. Fox and C. Cooper, unpubl. data (7 visits, 16 April – 25 May 1977, no DCCOs observed); Hebert <i>et al.</i> 2008 |
| 24 May 1978 | 10 | 0 | | | G. Fox and C. Cooper, unpubl. data (6 visits, 02 May – 21 June 1978; max. count = 10 nests on 24 May 1978); C. Weseloh, unpubl. data |
| 18 June 1979 | 0 | | | | G. Fox and C. Cooper, unpubl. data (7 visits, 18 April – 18 June 1979; DCCOs observed on 4 visits, but did not nest); C. Weseloh, unpubl. data |
| 1980 | 6 | 116 | 0 | | CWS, unpubl. data (2 DCCO nests on 18 June 1980) |

| Date | Double-crested Cormorant | Herring Gull | Black-crowned Night Heron | Great Black-backed Gull | Source/Notes |
|---------------|--------------------------|--------------|---------------------------|-------------------------|--|
| 1981 | 12 | 151 | | | CWS, unpubl. data (2 DCCO nests on 18 June 1980) |
| 1982 | 0 | 138 | | | C. Weseloh, unpubl. data |
| 1983 | 4 | 75 | | | C. Weseloh, unpubl. data |
| 1984 | 29 | | | | |
| 1985 | 0 | | | | CWS, unpubl. data |
| 1986 | 0 | 168 | | 1 | CWS, unpubl. data |
| 1987 | 0 | | | | CWS, unpubl. data |
| 1990 | 2 | 204 | 27 | 1 | Blokpoel and Tessier 1996; Hebert <i>et al.</i> 2008 |
| 1991 | 0 | | | | CWS, unpubl. data |
| 1992 | 0 | | 23 | | CWS, unpubl. data |
| 1993 | 260 | | | | CWS, unpubl. data |
| 1994 | 586 | 124 | 17 | | C. Weseloh, unpubl. data |
| 16 May 1995 | 59 | 246 | | | C. Hebert, unpubl. data |
| 14 May 1996 | 352 | 245 | | | L. Shutt, unpubl. data |
| 1997 | 303 | | | | CWS, unpubl. data |
| 06 May 1998 | 520 | 206 | | 2 to 4 | L. Shutt, unpubl. data |
| 1999 | 373 | 253 | 0 | 5 | Hebert <i>et al.</i> 2008 |
| 2000 | 635 | | 0 | | C. Pekarik and T. Havelka, unpubl. data |
| 27 April 2001 | 385 | 174 | | 5 | C. Weseloh, unpubl. data |
| 25 June 2002 | 835 | | | | C. Weseloh, unpubl. data |
| 22 April 2003 | 442 | 131 | | | C. Hebert, unpubl. data |
| 13 May 2004 | 940 | 137 | | | L. Shutt, unpubl. data |
| 5 May 2005 | 637 | 163 | | | C. Weseloh, unpubl. data |
| 04 May 2006 | 985 | 119 | | | L. Shutt, unpubl. data |
| 17 May 2007 | 722 | 125 | | | C. Weseloh, unpubl. data |
| 2008 | 901 | 113 | 0 | 0 | CWS, unpubl. data |
| 15 May 2009 | 896 | 81 | | | C. Hebert, unpubl. data (low because of storm loss) |
| 03 May 2010 | 759 | 128 | | | C. Hebert, unpubl. data |

* Blank fields indicate not known and/or not reported.

APPENDIX 2: COLONIAL WATERBIRD NESTS AT MOHAWK ISLAND NATIONAL WILDLIFE AREA, LAKE ERIE 1933–2009

| Date | Herring Gull | Ring-billed Gull | Common Tern | Caspian Tern | Double-crested Cormorant | Great Black-backed Gull | Source |
|-------------|--------------|------------------|-------------|--------------|--------------------------|-------------------------|--|
| 1933 | * | | 500 | | | | Beardslee and Mitchell 1965 |
| 4 July 1933 | | | 500 | | | | Beardslee and Mitchell 1965 |
| 1938–1941 | | | (1000)** | | | | Palmer 1964 |
| 1943 | 1 | 26 | | | | | Beardslee and Mitchell 1965; Haymes 1977 |
| 1944 | 2 | | | | | | Beardslee and Mitchell 1965 |
| 1945 | 4 | 50 | | | | | Beardslee and Mitchell 1965 |
| 1946 | 13 | 45–50 | 1400–1800 | | | | Beardslee and Mitchell 1965 |
| 1947 | 6 | 125 | 1100 | | | | Beardslee and Mitchell 1965 |
| 1948 | | | 1100 | | | | Beardslee and Mitchell 1965 |
| 1949 | 8 | 175 | 800 | | | | Beardslee and Mitchell 1965 |
| 1950 | 9 | 300 | | | | | Beardslee and Mitchell 1965 |
| 1950 | | | (1600) | | | | Palmer 1964 |
| 1952 | (20) | (1000) | (500) | | | | Palmer 1964 |
| 1954 | 35 | (1200) | | | | | Beardslee and Mitchell 1965 |
| 1954 | | | (360) | | | | Palmer 1964 |
| 1960 | 35 | 2000 | 130 | | | | Beardslee and Mitchell 1965; Haymes 1977 |
| 1963 | | (6300) | | | | | Ludwig 1974 |
| 1964 | | 6300 | | | | | Ludwig 1974 |
| 1966 | (200) | (2500) | (300) | | | | Ontario Nest Record Scheme |
| 1972 | 80 | (1000) | | | | | S.M. Teeple, pers. comm. |
| 20 May 1972 | 160 | | | | | | A.R. Clark, pers. comm. |
| 4 June 1974 | 184 | | | | | | A.R. Clark, pers. comm. |

| Date | Herring Gull | Ring-billed Gull | Common Tern | Caspian Tern | Double-crested Cormorant | Great Black-backed Gull | Source |
|---------------|--------------|------------------|-------------|--------------|--------------------------|-------------------------|--|
| 27 April 1975 | 215 | 301 | 0 | | | | A.R. Clark (pers. comm.) |
| 18 May 1975 | 245 | | | | | | A.R. Clark, pers. comm. |
| 1976 | (170) | | 0 | | | | G.T. Haymes, pers. comm.; Blokpoel and McKeating 1978 |
| 28 May 1976 | 185 | | | | | | A.R. Clark, pers. comm. |
| 1976–1977 | 35 | 2000 | 0 | | | | G.T. Haymes, pers. comm.; Blokpoel and McKeating 1978 |
| 1976–1977 | 227 pairs | 520 pairs | | | | | Blokpoel and Tessier 1996 |
| 1 May 1977 | 227 | | | | | | Blokpoel and McKeating 1978 |
| 12 May 1977 | 202 | 520 | 0 | | | | Blokpoel and McKeating 1978 |
| 1980 | 259 | | | | | | G. Tessier and P. Fetterolf, unpubl. data |
| 21 May 1980 | 259 | 729 | 0 | | | | P. Madore, pers. comm. |
| 1983 | 200–259 | 1500–2400 | | | | 16 | Clark <i>et al.</i> 1983 |
| 1987 | | | 1311 | | | | R. Morris, pers. comm. |
| 1991 | | | | | | 1 | Peck and James 1994 |
| 1993 | | | | | | 1 | D. Moore and L. Benner; Moore <i>et al.</i> 2007, 2008 |
| 1994 | | | | | | 132 | C. Pekarik, unpubl. data |
| 1996 | | | | 40 | 220 | | D.V. Weseloh, in press; C. Pekarik, unpubl. data |
| 1996 | | | | | | 1 | D.V. Weseloh and D. Ryckman |
| 2002 | | | 203 | | | | D.V. Weseloh, unpubl. data |
| 2003 | | | | 226 | | | D.V. Weseloh, in press |
| 2004 | | | 86 | | | | C. Pekarik, unpubl. data |
| 2006 | | | | 319 | | | D.V. Weseloh, in press |
| 2007 | 253 | 2201 | | 300 | 1563 | | CWS, unpubl. data; Weseloh, in press; D. Moore, unpubl. data |

| Date | Herring Gull | Ring-billed Gull | Common Tern | Caspian Tern | Double-crested Cormorant | Great Black-backed Gull | Source |
|-------------|---------------------|-------------------------|--------------------|---------------------|---------------------------------|--------------------------------|------------------------|
| 2008 | | | | | 1586 | | D. Moore, unpubl. data |
| 2009 | | | | 351 | (800) | | D. Moore, unpubl. data |

* Blank fields indicate not known and/or not reported.

** Records in parentheses indicate an estimate.

Table adapted from Blokpoel and McKeating 1978; Planck and Robinson 1985.

APPENDIX 3: WATERFOWL AND WATERBIRD SPECIES USING SCOTCH BONNET ISLAND NATIONAL WILDLIFE AREA AND MOHAWK ISLAND NATIONAL WILDLIFE AREA AND THE SURROUNDING NEARSHORE WATERS (<1.5 KM) DURING THE YEAR

A. Waterfowl and waterbird species using Scotch Bonnet Island NWA and nearshore waters

| Common Name | Latin Name | Season | Maximum Count During One Survey (1971-2001)* |
|--------------------------|-------------------------------------|----------------------|--|
| American Black Duck | <i>Anas rubripes</i> | Spring, Fall, Winter | 200 |
| Bald Eagle | <i>Haliaeetus leucocephalus</i> | Fall, Winter | 1 |
| Black Scoter | <i>Melanitta nigra</i> | Spring, Fall, Winter | 324 |
| Bonaparte's Gull | <i>Chroicocephalus philadelphia</i> | Spring, Fall | 286 |
| Bufflehead | <i>Bucephala albeola</i> | Spring, Fall, Winter | 878 |
| Canada Goose | <i>Branta canadensis</i> | ALL | 611 |
| Common Goldeneye | <i>Bucephala clangula</i> | Spring, Fall, Winter | 1072 |
| Common Merganser | <i>Mergus merganser</i> | Spring, Fall, Winter | 200 |
| Common Loon | <i>Gavia immer</i> | Spring, Fall, Winter | 9 |
| Double-crested Cormorant | <i>Phalacrocorax auritus</i> | Summer, Spring, Fall | 651 |
| Great Black-backed Gull | <i>Larus marinus</i> | ALL | 17 |
| Greater Scaup | <i>Aythya marila</i> | Spring, Fall, Winter | 10 |
| Mallard | <i>Anas platyrhynchos</i> | ALL | 101 |
| Long-tailed Duck | <i>Clangula hyemalis</i> | Spring, Fall, Winter | 6500 |
| Red-breasted Merganser | <i>Mergus serrator</i> | Spring, Fall | 650 |
| White-winged Scoter | <i>Melanitta fusca</i> | Spring, Fall, Winter | 410 |
| Unknown Scaup | <i>Aythya spp.</i> | Spring, Fall, Winter | 10670 |

*From CWS Great Lakes Migrant Waterfowl Survey

B. Waterfowl and waterbird species using Mohawk Island NWA and nearshore waters

| Common Name | Latin Name | Season | Maximum Count During One Survey (1971-2001)* |
|--------------------------|------------------------------|----------------------|--|
| American Black Duck | <i>Anas rubripes</i> | ALL | 350 |
| Green-winged Teal | <i>Anas crecca</i> | Fall | 25 |
| American Wigeon | <i>Anas americana</i> | Fall | 5 |
| Bufflehead | <i>Bucephala albeola</i> | Spring, Fall, Winter | 327 |
| Blue-winged Teal | <i>Anas discors</i> | Fall | 40 |
| Canada Goose | <i>Branta canadensis</i> | Spring, Fall, Winter | 400 |
| Canvasback | <i>Aythya valisineria</i> | Fall | 100 |
| Common Goldeneye | <i>Bucephala clangula</i> | Spring, Fall, Winter | 1,317 |
| Common Merganser | <i>Mergus merganser</i> | Spring, Fall, Winter | 1,892 |
| Double-crested Cormorant | <i>Phalacrocorax auritus</i> | Spring, Fall | 600 |
| Gadwall | <i>Anas strepera</i> | Spring | 52 |
| Greater Scaup | <i>Aythya marila</i> | Spring, Fall, Winter | 28,946 |
| Hooded Merganser | <i>Lophodytes cucullatus</i> | Spring, Fall | 2 |
| Mallard | <i>Anas platyrhynchos</i> | ALL | 660 |
| Mute Swan | <i>Cygnus olor</i> | Fall | 1 |
| Northern Pintail | <i>Anas acuta</i> | Fall | 10 |
| Long-tailed Duck | <i>Clangula hyemalis</i> | Spring, Fall, Winter | 705 |
| Red-breasted Merganser | <i>Mergus serrator</i> | Spring, Fall | 56 |
| Ring-necked Duck | <i>Aythya collaris</i> | Spring, Fall | 2 |
| Ruddy Duck | <i>Oxyura jamaicensis</i> | Spring | 4 |
| Unidentified Scoter | <i>Melanitta spp.</i> | Spring, Fall | 980 |

* From CWS Great Lakes Migrant Waterfowl Survey

APPENDIX 4: CANADIAN WILDLIFE SERVICE (ONTARIO) CONDITIONS OF RESEARCH REQUESTS AT NATIONAL WILDLIFE AREAS

Permission under the *Wildlife Area Regulations* of the *Canada Wildlife Act* to undertake research at National Wildlife Areas may be given subject to the following conditions:

1. All requests for research must be accompanied by a written proposal outlining the objectives; project duration; collection of data and specimens and measurements if any, number of participants, funding sources, location where work is to be undertaken, benefits to the National Wildlife Area (NWA), potential detractors and proposed mitigation measures. All proposals may be subject to a review by the Animal Care Committee of either Environment and Climate Change Canada or the submitting institution.
2. No research shall be undertaken without a permit issued under the *Canada Wildlife Act's Wildlife Area Regulations*, and the research must be consistent with the NWA management plan for the site and other relevant legislation (e.g., *Species at Risk Act* or *Migratory Birds Convention Act, 1994*).
3. All researchers must conform to regulations in effect regarding the NWA.
4. All researchers are responsible for obtaining all permits (e.g., *Species at Risk Act, Fisheries Act*), approvals and permissions (e.g., land managers, landowners), prior to commencement of the research project.
5. Copies of raw data (field books and maps), preliminary reports of the research activities and a copy of the final manuscript must be provided to Environment and Climate Change Canada, Canadian Wildlife Service (ECCC-CWS) Ontario at the end of each field season.
6. Priority will be given to researchers whose work has direct management implications for the NWA and species at risk.
7. Applications to undertake a minor research study must be submitted to the ECCC-CWS Ontario office, in writing, prior to commencement of the project.
Minor proposals without problems or issues require at least seven weeks for review, processing and issuance of a permit. Major proposals (that may require expert review, are multi-year, etc.) require a longer review period (minimum six months).

8. A statement must be provided to ECCC-CWS Ontario on why the research project cannot be undertaken elsewhere.
9. Any proposed work is subject to the *Canada Labour Code*, Part II (subject to the strictest safety certification, training, operational experience and mandatory use of appropriate safety equipment).

Note: The Minister may add terms and conditions governing the activity in order to protect and minimize the effects of the authorized activity on wildlife and their habitats.

All projects and activities in the NWAs are subject to environmental screening and, if necessary, to further steps in the Environmental Assessment and Review Process (Environment and Climate Change Canada).

APPENDIX 5: CONTACTS FOR SCOTCH BONNET ISLAND NATIONAL WILDLIFE AREA

| Contacts for SCOTCH BONNET ISLAND NATIONAL WILDLIFE AREA, Lake Ontario, Ontario Administered by Environment and Climate Change Canada – Canadian Wildlife Service (Ontario) | |
|---|--|
| Latitude 43°54'00" N / Longitude 77°32'25" W | |
| Emergency Contacts | |
| In case of emergency, dial 911. General inquiries should be directed to local telephone numbers, not 911. <p style="text-align: center;">NOTE: THERE IS NO CIVIC ADDRESS FOR SCOTCH BONNET ISLAND NWA</p> The closest mainland contact point (and boat landing) is Wellington, Ontario. | |
| Any life-threatening emergency | 911 |
| Police-fire-ambulance | 911 |
| Ontario Provincial Police | 1-888-310-1122 |
| Canadian Coast Guard Incident Reporting - to report air and marine emergencies | 1-800-267-7270 613-965-3870 |
| Marine radio channel: distress, safety, calling, monitored for emergencies | VHF 16 and 65 are ONLY for emergency and calling – all regions |
| Coast Guard Joint Rescue Team Coordination Centre (general inquiry – Trenton) | 613-965-3870 |
| Royal Canadian Mounted Police (RCMP), Ontario Division | 519-640-7267 |
| To report environmental emergencies or a spill to air, land or water, call the Ontario Spills Action Centre, 24/7. | 1-800-268-6060 or 416-325-3000 |
| Poison Control Centres (emergencies) | 1-800-268-9017 |
| Nearest hospital: Trenton Memorial | 613-392-2540 |
| Environment and Climate Change Canada – Ontario | |
| Canadian Wildlife Service (Ontario) Region Office | 1-800-668-6767 |
| Canadian Wildlife Service (Ontario) Permit Office | 905-336-4464 |
| Wildlife Enforcement Directorate (Ontario) | 905-336-6410 |
| General Contacts | |
| Ontario Ministry of Natural Resources and Forestry (Conservation Officer) | 1-877-847-7667 |
| Ontario Ministry of Natural Resources and Forestry (General Inquiry) | 1-800-667-1940 |
| Ontario Ministry of Natural Resources and Forestry area office, Kingston | 613-531-5700 |
| Town of Picton, Prince Edward County | 613-476-3880 |
| Environment and Climate Change Canada Great Lakes marine forecast | VHF 21B & 83B |

APPENDIX 6: CONTACTS FOR MOHAWK ISLAND NATIONAL WILDLIFE AREA

| Contacts for MOHAWK ISLAND NATIONAL WILDLIFE AREA, Lake Erie, Ontario Administered by Environment and Climate Change Canada – Canadian Wildlife Service (Ontario) | |
|---|--|
| Latitude 42°50'05"N (42.834°) / Longitude 79°31'22"W (-79.523°) | |
| Emergency Contacts | |
| <p>* In case of emergency dial 911. General inquiries should be directed to local telephone numbers, not 911.</p> <p style="text-align: center;">NOTE: THERE IS NO CIVIC ADDRESS FOR MOHAWK ISLAND NWA</p> <p>The closest mainland contact point (and boat landing) is Port Maitland, Ontario.</p> | |
| Any life-threatening emergency | 911 |
| Police-fire-ambulance | 911 |
| Ontario Provincial Police | 1-888-310-1122 |
| Canadian Coast Guard Incident Reporting - to report air and marine emergencies | 1-800-267-7270 613-965-3870 |
| Marine radio channel: distress, safety, calling, monitored for emergencies | VHF 16 and 65 are ONLY for emergency and calling – all regions |
| Coast Guard Joint Rescue Team Coordination Centre (general inquiry – Trenton) | 613-965-3870 |
| Royal Canadian Mounted Police (RCMP), Ontario Division | 519-640-7267 |
| To report a spill to air, land or water, call the Ontario Spills Action Centre, 24/7. | 1-800-268-6060 |
| Poison Control Centres (emergencies) | 1-800-268-9017 |
| Nearest Hospital: Dunnville Memorial | 905-774-7431 |
| Environment and Climate Change Canada – Ontario | |
| Canadian Wildlife Service (Ontario) Region Office | 1-800-668-6767 |
| Canadian Wildlife Service (Ontario) Permit Office | 905-336-4464 |
| Wildlife Enforcement Directorate (Ontario) | 905-336-6410 |
| General Contacts | |
| Ontario Ministry of Natural Resources and Forestry (Conservation Officer) | 1-877-847-7667 |
| Ontario Ministry of Natural Resources and Forestry (General Inquiry) | 1-800-667-1940 |
| Ontario Ministry of Natural Resources and Forestry area office, Aylmer | 519-773-9241 |
| Town of Dunnville, Haldimand County | 905-318-3272 |
| Environment and Climate Change Canada Great Lakes marine forecast | VHF 21B & 83B |

