

MINESING SWAMP, ONTARIO

Information Sheet on Ramsar Wetlands

[4CA034]

Effective Date of Information: The information provided was prepared in March 1996 and was deemed valid at the time of designation to the List of Wetlands of International Importance on November 19, 1996.

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Date of RAMSAR designation: November 19, 1996

Geographical coordinates: Longitude 80°52' West Latitude, 44°23' North Longitude.

General location: Located in the Province of Ontario, 120 km north of Toronto, in the townships of Springwater and Clearview, County of Simcoe.

Area: Total designated, protected area is 6 000 hectares.

Wetland type: Minesing Swamp is categorized as an inland, riverine, perennial, emergent, floodplain wetland. It contains large areas of all wetland types found in Ontario, including swamp, fen, bog and marsh.

Elevation: 182 m above sea level.

Overview: Minesing Swamp is southern Ontario's largest and most diverse wetland. Encompassing an area of 6 000 ha, the swamp's unique hydrology provides for an interconnected network of swamps, fens, bogs and marshes.

Minesing Swamp provides habitat for a large variety of flora and fauna, many of which are rare, sensitive and/or near the limits of their geographical range. Over 206 species of birds inhabit the swamp, including 114 known breeders. Many of the bird species that occur in the swamp are provincially rare, e.g. the Prothonotary Warbler. One of Ontario's largest white-tailed deer wintering yards is also located in the Swamp. Over 400 species of plants have been identified, 11 of which are considered provincially rare. Of note are the localized "patches" of Prairie white-fringed (and other) orchids, and the largest pure stand of silver maple in the province. In addition to providing diverse habitat, Minesing Swamp is also important for recreation and tourism, being the focal point of birding and eco-tours in the region. Also, the severity of flooding in the lower Nottawasaga River (and the Town of Wasaga Beach) is moderated by the swamp's "reservoir-like" hydrology.

Physical features: Minesing Swamp is the result of glacial and post glacial processes that have

been occurring in the area over the past 20 millennia. These processes have resulted in the convergence of the drainage basins of Nottawasaga River, Mad River, Willow Creek and Coates Creek in the swamp.

Bedrock is limestone (belonging to the verulam formation) of middle ordovician origin. Soil cover ranges between 60-90 m in depth. Minesing Swamp is located in the Nottawasaga Basin of the Simcoe lowlands and includes part of two geomorphological units. The first is comprised of post-glacial shorelines of glacial lakes Payette, Nipissing and Algonquin (which form the southeastern border of the swamp). The second is an extensive glacio-lacustrine plain that forms most of the swamp's basin.

Eight soil types have been identified within the Minesing Swamp. Muck occupies most of the area, and glacial lake deposits of marl, varved clay and silt loam overlie till and outwash deposits. Recent deposits of peat and muck occur in several depressions, the largest and deepest of which forms the boreal forest/fen complexes of the southeastern portion of the swamp. Along the river levees and other areas where seasonal flooding is severe, organic deposits are shallow or non-existent and silt-clay soils of recent alluvial origin dominate.

Ecological Features: There are three major vegetation complexes in the Minesing Swamp that arise from differences in topography and landforms: (a) Glacial Lake Shoreline, (b) Boreal Wetland Complex and (c) Deciduous Bottomland Complex.

(a) The Glacial Lake Shoreline provide conditions for two major vegetation types. The first is the deciduous forest of the Nipissing Bluff, which is characterized by sugar maple (*Acer saccharum*) and other hardwoods such as beech (*Fagus grandifolia*), and white birch (*Betula papyrifera*). The second is the gently sloping Lake Payette Terrace. This hummocky area with scattered pools of water is colonized by a dense cedar/balsam fir forest.

(b) The Boreal Wetland Complex encompasses three distinct vegetation communities. The peat plain fen with string islands forms an extensive network of sedges and grasses, mixed with coniferous and low shrub islands. The peat plain-conifer complex surrounds the fens (and has colonized the string islands which are dominated by cedar and tamarack). This alternating hummock-hollow ground is vegetated by balsam fir, black spruce and white pine, with many shrubs. The peat plain-big marsh is defined by remnant tamarack/cedar islands, dead standing trees and alder thickets.

(c) The Deciduous Bottomland Complex is made up by three distinct vegetative communities. The River Levee is dominated by hackberry (*Celtis occidentalis*) and basswood (*Tilia americana*) forest, with scatterings of butternut (*Juglans cinera*), American elm (*Ulmus americana*) and bur oak (*Quercus macrocarpa*). The Bottomland that experiences heavy spring floods are dominated by dense silver maple stands. Bur oak stands also prevail in areas where flooding is more moderate. Marsh areas can be found in patches throughout the Bottomland Complex. These are dominated by cattail (*Typha latifolia*) and bur-reed (*Sparangium eurycarpum*).

Land tenure\Ownership: A mix of lands are owned by the Nottawasaga Valley Conservation Authority; the Government of Ontario; the County of Simcoe and various private holdings.

Conservation Measures Taken: Minesing Swamp has been deemed an "Area of Natural and Scientific Interest" by the Ontario Ministry of Natural Resources. It is regarded in Ontario as a "Class 1, Provincially Significant Wetland". As such, it is protected from disturbances, particularly development.

Most of the Swamp (approximately 3 500 hectares) are owned and managed by the Nottawasaga Valley Conservation Authority and the Ontario Ministry of Natural Resources. A long-term management plan for the area was completed in 1995 (*Minesing Swamp Management Plan*).

The management plan outlines authorized uses of the swamp and long-term management strategies for the swamp's many sensitive areas. Implementation of management strategies detailed in the management plan are underway. Some of the conservation efforts already undertaken include:

- excavation of silt traps on Willow Creek to prevent high sediment load from "filling in" the Minesing Swamp;
- installation of signs banning operation of wheeled motorized vehicles in Minesing Swamp;
- securement of many hectares in the swamp through purchase from private landowners;
- regulation of hunting and logging activities and controlled access to government-owned lands;
- the Nottawasaga Valley Conservation Authority sponsors a public awareness campaign featuring press releases and annual canoe tours down the Nottawasaga River that increases awareness of the importance of Minesing Swamp in relation to the wildlife and hydrology of the surrounding area.

Conservation Measures Proposed But Not Yet Implemented: In 1996 and in coming years, implementation of management strategies outlined in the *Minesing Swamp Management Plan* will continue. In 1996, barriers will be erected along major routes to prevent the operation of wheeled motor vehicles within the Minesing Swamp. An outpost and wildlife viewing tower will also be erected as part of the

Nottawasaga Valley Conservation Authority's public awareness campaign. The structures will be used by participants on no-impact interpretive eco-tours through the swamp. Tours will promote an understanding of the swamp's intrinsic value.

Current Land Use/Principal Human Activities:

(a) **Site:** The Swamp is principally retired agricultural land, or land that has never been cleared for agriculture or settlement. Principal human activities are recreational, including hiking, canoeing, bird watching, hunting, fishing and snowmobiling.

(b) **Surroundings/Catchment:** Agriculture and rural residential properties.

Disturbances/Threats, Including Changes in Land Use and Major Development Projects:

(a) Site: (i) Misuse of recreational opportunities, including poaching and the operation of wheeled, motorized vehicles in sensitive plant and animal habitats. (ii) Sediment from the Willow Creek (due largely to erosion of unstabilized slopes in upstream developed areas) threatens to dramatically alter hydrology. (iii) Invasion by exotic species such as purple loosestrife, Norway maple and ruffe. (iv) Possible sale of or changes in the use of privately owned land parcels within Minesing Swamp.

(b) Surroundings/Catchments: Urban encroachment, changing land uses. Most notable, is a proposed subdivision development in the Willow Creek Basin, less than one km upstream of the Minesing Swamp.

Hydrological and Physical Values: Minesing Swamp is extremely important from the perspective of moderating flooding in the lower Nottawasaga River. When water levels in the Nottawasaga River, Mad River, Willow Creek and Coates Creek are high, they spill over natural levees in the swamp, flooding up to 7 000 ha of land. Water is stored in this large "reservoir" and slowly released to the Nottawasaga River at the north end of the Swamp — hence moderating the severity of flooding in the Town of Wasaga Beach, and augmenting base flow over the summer months. Presumably, the swamp is also an important recharge area for groundwater (a comprehensive hydrological study of the Minesing Swamp is currently being undertaken by the University of Waterloo).

Social and Cultural Values: As a major route for fur traders, trappers and the military in the 1700s and 1800s, Minesing Swamp had considerable historical value. In fact, Willow Creek Depot — located on the "Nine Mile Portage" just south of Minesing Swamp — was a stopover point on the major trading route between Georgian Bay and York (now Toronto). During the War of 1812, the area was used to house troops and served as a major transportation route between Georgian Bay and York.

Noteworthy Fauna: Some 206 species of birds have been documented in the Minesing Swamp, of which 114 are known breeders and the remaining 77 are migrants. Many rare songbirds can be found, including Carolinian species like the Blue-winged, Prothonotary, Cerulean and Golden-winged Warblers, and the Blue-gray Gnatcatcher. Northern species that nest in the swamp include the Sharp-shinned Hawk, Golden and Ruby-crowned Kinglet, Myrtle Warbler and Magnolia Warbler. Particularly in the spring, Minesing Swamp is an important staging area for thousands of migratory waterfowl (18 species are represented) including: Pintail, Mallard, Wigeon, Blue-winged Teal, Ringbill and Black Duck. Ontario's second largest Great Blue Heronry (approximately 200 nests) is also located in the Minesing Swamp, close to the confluence of the Mad and Nottawasaga Rivers.

At least 23 species of mammals have been sighted in the swamp. Population estimates suggest 250 to 400 white-tailed deer, 200 beaver, 700 raccoons, 300 mink and 15 000 Muskrats. Sightings of transient black bear and moose are also reported periodically. Some 30 species of fish have been recorded in the watercourses of Minesing Swamp, most of these belonging to the minnow family

(Cyprinidae). The Mad River and Nottawasaga River are the sole migratory routes for Georgian Bay rainbow trout and Pacific salmon seeking spawning beds in the upper Nottawasaga River Basin. The swamp is also an important spawning habitat for northern pike and walleye.

Minesing Swamp also hosts a large population of amphibians and reptiles. Of note are the rare wood, Blanding's and spotted turtles.

Noteworthy Flora: Minesing Swamp is most noteworthy for its diversity of habitat that hosts a large number of native plant species (400 species documented). The Swamp holds the most extensive silver maple bottomland forests in southern Ontario, while the hackberry levee forests that occur along the riparian zone of the Nottawasaga River contain many species of Carolinian origin, that are near the northerly limit of their range. Some of these species include hackberry, black maple, blue beech and prickly ash.

Significant orchid populations exist in the Minesing Swamp. Several large patches of the rare Queen's lady slipper (*Cypripedium reginae*) and several hundred Prairie white-fringed orchids (*Platanthera leucophaea*) can be found in the swamp. There are 11 provincially rare plant species in the Swamp, including: three sedges (*Carex* spp.), ram's head lady slipper (*Cypripedium Aerientinum*), spike rush (*Eleocharis rostellata*), love grass (*Eragrostis hypnoides*), Prairie white-fringed orchid (*Platanthera leucophaea*), water leaf (*Hydrophyllum canadense*), Oswego tea (*Monarda didyma*), ginseng (*Panax quinquefolius*) and valerian (*Valeriana uliginosa*).

Current Scientific Research and Facilities: At present there are no research facilities in the Minesing Swamp. However, funding for an outpost in the swamp is being secured at present, and construction of a main outpost building may begin in the fall of 1996. Georgian College (located in Barrie) carries out environmental studies within Minesing Swamp. The University of Waterloo is presently involved in a hydrogeological study of the wetland.

Current Conservation Education: The Nottawasaga Valley Conservation Authority hosts annual interpretive canoe/hiking tours through the swamp during the spring freshet. Management plans for the swamp have been circulated to local schools in order that students can learn about the ecological communities that exist in Minesing Swamp, and the steps that are being taken to preserve it. Curriculum at the nearby (within 10 km) John L. Jose Environmental Learning Centre teaches 10 000 younger children per year the value and management of wetlands.

In 1996, the educational program regarding the swamp will be expanded. The research post will also be used as a base camp for more frequent ecotour groups. Under the direction of the *Minesing Swamp Master Plan*, signs will also be posted on major access points to the swamp. Signs will inform users of the sensitive plant and animal communities of the swamp, and what recreational activities are permitted on lands owned by the Nottawasaga Valley Conservation Authority.

Several feature film documentaries have been produced showing the diversity of flora and fauna in the Minesing Swamp. These have been shown on public television across Canada. Similarly, articles on the swamp have appeared in many magazines, newspapers and scientific journals nation

wide.

Current Recreation and Tourism: Minesing Swamp represents the largest tract of essentially pristine lands in Simcoe County. As such, the wetland is important for outdoor activities such as canoeing and hiking. Due to its diversity of plant and animal communities, the swamp attracts many people each year from around the world, who are interested in viewing wildlife. Birding and plant identification are two of the more popular activities. Fishing for migratory salmonids, and other species (including walleye, sturgeon, carp, etc.) is another important recreational use of the swamp.

In winter, agreements with local snowmobile clubs have been made such that trails extend into many of the less sensitive areas of the swamp.

Management Authority: The Nottawasaga Valley Conservation Authority (NVCA) (representing local municipalities) and the Ontario Ministry of Natural Resources (representing the province of Ontario) are the main management authorities for the Minesing Swamp and own more than 60 % of the swamp's land area. As well, the NVCA manages land within the Ramsar site areas owned by the County of Simcoe. These organizations which own more than 70% of the swamp's land area, jointly produced the recently printed *Minesing Swamp Management Plan*. All landowners within the swamp were consulted with, and supportive of, this management plan.

Jurisdiction: Provincial — Province of Ontario/Nottawasaga Valley Conservation Authority/County of Simcoe; Class 1 Provincially Significant Wetland under Ontario's "Provincial Policy Statement" (1996).

Bibliographical References:

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Hanna. 1982. *A detailed life science inventory check-sheet for Minesing Swamp*. Ontario Ministry of Natural Resources, Parks and Recreation Section, Central Region. Richmond Hill, Ontario.

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Nottawasaga Valley Conservation Authority. 1995. *Minesing Swamp Management Plan*.

Reasons for Inclusion: The Minesing Swamp supports a diverse assemblage of plant and animal communities, including rare and sensitive species. It represents one of the largest and most diverse undisturbed wetland tracts in Canada, and hence provides important habitat requirements,

hydrological functions and recreational opportunities. Due to its size and diversity, the Minesing Swamp ranks with other Ramsar sites around the World.

31. Maps of Minesing Swamp:

Several maps are enclosed with this information sheet including:

1. Minesing Swamp in regional context.
2. Land ownership in Minesing Swamp.
3. Significant biological communities and sensitive areas in Minesing Swamp.
4. Location of Minesing Swamp within the province.