

THE MASSASAUGA RATTLESNAKE
Sistrurus catenatus catenatus
IN WAINFLEET BOG

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Wainfleet Bog is a 1500 ha bog in the Niagara peninsula of southern Ontario near the town of Port Colborne. It has been affected in many ways by human activity including peat extraction, artificial drainage and conversion of peripheral areas into agriculture, roads and other uses. Only a minority of its historical area is now in anything like its original state and none of it can be described as pristine (Jonsson-Ninniss and Middleton, 1991). Nevertheless, Wainfleet bog is arguably the largest and most important natural area in Niagara, the most southerly bog of any size in Canada, and nationally significant as the home for an isolated population of the eastern massasauga rattlesnake, *Sistrurus catenatus catenatus*.

Sightings of rattlesnakes are reported frequently. Anecdotal information leads to the impression that they are relatively common in the bog, and in immediately adjacent areas, although I am unaware of any data that would allow a quantitative population estimate. It is also important to stress that many anecdotes, when checked, turn out to be misidentifications. Confirmed sightings by reliable observers (e.g. Frank Banfield, former curator of mammals at the National Museum of Natural Sciences) have been made in recent years on a gravel road at the west edge of the bog, on the Port Colborne-Wainfleet Town Line (an unopened road allowance) at the south-east edge of the bog, and adjacent to the peat roads in the central mined portion of the bog. There is reason for optimism for the future of the bog as a resource for biological conservation of the snake and other natural features:

The whole bog is designated as a Class 1 wetland. The least-disturbed portions are designated as an ANSI (Area of Natural or Scientific Interest;) (a Ministry of Natural Resources designation) and are already in public ownership.

Much of the rest of the bog is controlled by a single landowner, the larger (of two) is a peat mining company. All peat extraction by this company has now stopped and its infrastructure has been removed. The land is now commercially worthless to its owner, and it is at the top of the local priority list for acquisition by the Ministry of Natural Resources. There is an excellent chance that most of it can be brought into public ownership in the near future. This Species Recovery Group can help by adding its voice to the arguments for acquisition.

Access to the interior of the bog is relatively difficult, so casual vandalism and direct human interference are relatively light. A stand of thick bush, wet at many times and places, surrounds the bog. There is relatively easy access to the interior at only two or three points.

There is an active local Friends of Wainfleet Bog group that has been working for several years to develop local support and understanding for the natural values of the bog. The leader of the group, Pat Davies, has produced an audiovisual presentation on the bog of professional quality, which is now being transferred to video format so that it can be widely circulated.

The bog is recognized as important for other reasons as well. For example, it is associated with a prisoner-of-war camp during the Second World War, and the narrow-gauge railway (recently removed) used by the peat company to move the raw material to its processing plant is apparently of technological interest to fanciers of such things.

Full acquisition is an essential first step for the rattlesnake population and for many of the other natural features of the bog, for several reasons:

- The bog is surrounded by major drainage ditches which act as a single drainage system. There is much evidence (some of it anecdotal) that the character of the bog as an ecosystem is changing because of the artificially dry conditions created by this drainage system. Control of drainage is essential for the long-term conservation of the bog, but this is feasible only if the system is managed as a whole. The publicly-owned parts of the bog are now at the mercy of changes made elsewhere. Only when the whole bog and its drainage system are under public control will its future be secure.
- Alteration of the water table is not as simple as returning it to its former condition by blocking the artificial drainage channels. There have been biological changes, such as the invasion of birch into open parts of the

bog, that are not necessarily immediately reversible. Careful advance preparation and small-scale trials will be necessary. The mined portions of the bog, already heavily disturbed, are most suitable for such trials.

- The mined portions of the bog have the easiest access, and would be suitable for marked trails, educational displays and other visitor services. Such an arrangement would allow the least-disturbed parts of the bog to remain free from major disturbances, while still allowing public access. The alternative of restricting or banning public access entirely would risk alienation of public support.
- In the future, there are some possibilities for expansion of the snake population. For example, south to the Lake Erie shoreline by way of the Wainfleet Wetlands complex, and to the east and west by way of the abandoned Welland Feeder Canal, a linear marsh just north of the bog. However, in the short term, the bog itself is the only known habitat. At 1500 ha, it is so small that no part of it can be considered expendable.

In summary, major actions required to safeguard the rattlesnake in Wainfleet include the following:

- purchase of the remaining entire bog as soon as possible
- careful planning with small-scale trials in advance, of a plan to control and eventually restore the water table to its former condition
- encouragement of public education about the bog and its rattlesnakes, using existing mechanisms such as the Friends of the Wainfleet Bog and Ministry of Natural Resources local office
- contact of all local residents and relevant public officials and politicians to foster understanding and appreciation for the bog and its rattlesnakes
- nondestructive scientific study of the rattlesnake population, including as a priority, determination of its current demographic and genetic status

REFERENCE

Jonsson-Ninniss, S., and J. Middleton, 1991. Effect of peat extraction on the vegetation in Wainfleet Bog, Ontario. *Canadian-Field Naturalist* 105(4): 505-511.