

BRUCE LAKE MARSHES

UTM Ref. 17TPA047027

Medora Township, Muskoka Lakes
Status: Recommend Heritage Area

Area: 174 ha

Site Characteristics

This site follows a watercourse from a large inland lake (Bruce Lake) draining west toward the Joseph River (Lake Joseph) over a broad expanse of peat-filled lowland between bedrock ridges. Beaver have impeded the flow along this course, creating a series of beaver ponds, marsh, swamp and poor fen wetlands within the enclosing upland.

The geology of the area is characterized by roughly parallel, gneissic bedrock ridges, covered by a thin mantle of sandy glacial till deposits. The soils are generally shallow, with numerous exposures of barren bedrock supporting dry Red Oak-White Pine-White Ash treed barrens and dry-mesic White Oak-Red Oak open woodlands. In places where the soils are deeper, late successional Eastern Hemlock-Sugar Maple-Red Oak mixed forests are present.

The beaver pond closest to Bruce Lake is maintained by a large beaver dam with a culvert installed to prevent flooding up into Bruce Lake. It supports a classic beaver pond association with floating-leaved aquatics, emergent shoreline vegetation, shrub-rich Sweet Gale marsh and Speckled Alder thicket swamp. South of this pond is an extensive Black Ash-Red Maple broadleaf swamp forest, which is seasonally flooded.

The stream flows through a narrow opening between deciduous Sugar Maple-Ironwood and mixed upland forests into a second pond complex. The mud banks of two beaver dams in the narrows support two provincially rare plant species, Carey's Knotweed and Halberd-leaved Tearthumb. A large open flooded area supports an extensive Cattail marsh, plus Speckled Alder thicket swamp and beaver pond. North of this impoundment is an area of Tamarack-Black Spruce-Leatherleaf-Sphagnum conifer swamp forest and low shrub poor fen.

Downstream, below another dam, the slow-moving stream flows between the slopes of a small valley dominated by rock barrens. It then fans out into a beaver wet meadow and herb-rich marshy area before joining the Joseph River.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	392 native ; 57 introduced 1 A.C.P.F. with a score of 6 (Insignificant)
Birds	46 observed during breeding season
Mammals	8
Herpetofauna	12
Butterflies	14

Significant Natural Values and Selection Criteria Met

1. **Hydrology** - (A3) The sequence of beaver impoundments and wetlands along this small stream contribute to the regional hydrological system through the storage and retention of surface and ground water. In addition, these wetlands likely contribute to enhancement of water quality by filtering out nutrients and other pollutants coming downstream from Bruce Lake.
2. **Diversity** - (B2) The total number of native plant species related to the size of the area is higher than expected for Muskoka as shown in Figure 1. This high diversity is a reflection of the diverse assemblage of plant community types, many of them wetlands, within the area.
3. **Rare Species** - (B4) The Bruce Lake Marsh area provides habitat for the following rare species:

Wildlife

Rana palustris Pickerel Frog [RR]
Coccyzus americanus Yellow-billed Cuckoo [RR]

Vascular Plants

Cardamine concatenata Cut-leaved Toothwort [RR]
Carex backii Sedge [RR]
Carex brevior Shorter Sedge [RR]
Carex novae-angliae New England Sedge [PR]
Carex pallescens Pale Sedge [RR]
Gnaphalium sylvaticum Wood Cudweed [RR]
Heracleum lanatum Cow Parsnip [RR]
Polygonum arifolium Halberd-leaved Tearthumb [PR RR]
Polygonum careyi Carey's Knotweed [PR]

In addition, one amphibian, four species of birds and twenty-one species of vascular plants were recorded as regionally uncommon.

4. **Biogeographic Significance** - (B7) The population of provincially and regionally rare Halberd-leaved Tearthumb is at a northern limit of its provincial distribution (Pryer, 1987).

Two eastern species are represented by several populations within the study area. The provincially rare New England Sedge is present in mesic mixed woodlands. The regionally rare Wood Cudweed is confined in its Ontario distribution to the Algonquin uplands of northeastern Muskoka, southeastern Parry Sound, northern Haliburton and Algonquin Provincial Park.

A minor Atlantic Coastal Plain element was represented by the provincially rare Carey's Knotweed.

Ownership and Disturbance

The area is privately owned with both permanent and seasonal residences situated along the north edge of the area. Muskoka Road 7 crosses the northeast perimeter of the area at the outlet of Bruce Lake. Active maintenance of the beaver dam at the south end of the easternmost pond is carried out through placement of a culvert by members of the Muskoka Field Naturalists. A snowmobile trail traverses north to south through the central portion of the area. Woodland rock barren communities, in the vicinity of the Joseph River at the west end of the area, exhibit considerable evidence of past disturbance. A prevalence of non-native herbaceous species, including Orchard Grass, suggests the area was once farmed. There was 12.7% introduced plant species recorded from the study area.

Several abandoned borrow pits are located along the northern perimeter of the study area, bordering the gravel secondary road. These mesic to wet (seasonally inundated) sand pits support a variety of herbaceous and graminoid species including Northern Yellow-eyed Grass (*Xyris montana*), Rose Pogonia and Sheep Laurel.

Natural disturbance and alteration of the wetland ecology by beaver has depleted the supply of their major food source, Trembling Aspen. The future implications may be loss of the beaver for a period of time, with natural succession altering the vegetation community types and potentially resulting in loss of suitable habitat for rare species.

Sensitivity

The sensitivity of this site is related to the hydrological functioning of the wetland ecology, which is strongly influenced by the activities of beaver throughout this wetland complex. Suitable policies related to wetland protection should be followed. Management of the beaver impoundments within this area should recognize the important role of periodic abandonment and renewal of beaver ponds in natural succession, particularly in maintaining suitable conditions for some species of rare plants.

Major Sources of Information

Brunton, 1991b; Kor, & Miller, 1987; Pryer, 1987; Reid, et al., 1991.