



Baptiste Lake East Rapid Wetlands Assessment

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prepared for
Toronto Zoo
Adopt a Pond



prepared by
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1. Introduction

In 2009 the Baptiste Lake Association approved the Baptiste Lake Plan. The plan provided a number of recommendations that the Association could undertake to improve the social and environmental quality of life on the lake. With respect to the natural heritage features found on the lake, the Plan identified that the western half of the lake had already undergone a comprehensive assessment of the wetlands under the Ontario Wetland Evaluation System (OWES) with the result being that some wetlands in the north end of Hamilton Bay were determined to be provincially significant. These wetlands, and the species and habitats that depend on these wetlands are now protected from development and site alteration in accordance with the Provincial Policy Statement (2005).

The Baptiste Lake Plan further identified that the wetlands on the eastern half of the lake had not been evaluated, although many have been identified, mapped and zoned Environmental Protection by the local zoning bylaws. Therefore, one of the recommended actions identified in the Baptiste Lake Plan was to undertake a preliminary evaluation to determine the potential for these wetlands to become provincially significant should a comprehensive evaluation be undertaken.

The Toronto Zoo, under their Adopt a Pond program, contracted French Planning Services to complete a rapid wetland assessment. The objective of this preliminary assessment was to review the wetlands on the eastern half of Baptiste Lake to:

- identify the wetlands that may be determined to be provincially significant should a full comprehensive wetland evaluation be conducted using the Ontario Wetland Evaluation System;
- determine the extent and character of these wetlands as well as gain a better understanding about each wetland area (e.g., function, values and extent); and
- provide a preliminary opinion on how each wetland would be scored in a OWES evaluation process.

The results of this rapid assessment will help to identify priority wetland areas on the eastern portion of Baptiste Lake that could be determined to be provincially significant should a comprehensive wetland assessment be completed.

What is a wetland?

In Ontario a wetland is defined as land that is seasonally or permanently flooded by shallow water as well as land where the water table is close to the surface. In either case the presence of abundant water has caused the formation of hydric soils and the dominance of hydrophytic or water tolerant plants (OWES).

What is a Provincially Significant wetland (PSW)?

A PSW is a wetland that has been determined to be significant by the Ontario Ministry of Natural Resources using the Ontario Wetland Evaluation System (OWES).

The MNR maintains the Ontario Wetland Evaluation System (OWES) to provide a consistent method of assessing wetland functions and values. OWES enables the province to assess the relative value of wetlands for land use planning purposes. Wetlands that achieve a high score in the evaluation process are rated as provincially significant and are protected from development and site alteration by the Provincial Policy Statement (PPS) 2005. Policy 2.1.3 b) of the PPS states that:

Development and site alteration shall not be permitted in significant wetlands in Ecoregions 5E, 6E and 7E.

The province's wetland evaluation process involves evaluating a wide range of wetland functions and values that are grouped into 4 main components:

- Biological - measures productivity and habitat diversity;
- Social - measures some of the direct human uses of wetlands such as economic values, recreational activities and educational uses;
- Hydrological - measures water related values such as flood attenuation, groundwater recharge and discharge and water quality improvement, and others;
- Special features - measures wetland type rareness, habitat for species at risk and rare species, habitat quality for wildlife and fish and ecosystem age.

2. Methodology

The following methods and approaches were utilized to undertake a rapid wetland assessment to determine which wetland areas on east Baptiste Lake should receive priority for a comprehensive wetland evaluation in accordance with OWES due to their potential to be evaluated as provincially significant.

a. Background Research

In order to select areas to be assessed by this project the following was completed prior to conducting the field assessment:

- Review existing reports including the Baptiste Lake Plan, the Natural Heritage Inventory and the Ontario Wetland Evaluation Manual (Northern);
- Acquire wetland maps from MNR including PSW and any unevaluated wetlands; and,
- Review maps including aerial photographs, Google earth maps, landuse and municipal zoning.

b. Field Assessment

Barry Snider of Snider Ecological Services conducted a rapid wetland assessment of the priority areas identified from the background research and was assisted by Shannon Ritchie and Crystal Robertson from the Toronto Zoo Adopt a Pond program. Two days were spent in the field assessing the wetlands as described by the following:

- On July 9th, 2013 the lakeside edge of the wetlands (McGary Creek Wetland and Lavalley wetland) were identified by boat, with assistance from David Hawkes (a local property owner). The purpose of this assessment was to identify the lake side edge of these lacustrine wetlands. This was not done for the lakeside edge of Redmond Bay;
- On August 20, 2013 the cottage and forest access roads were travelled to identify and assess the land side of the east Baptiste Lake wetlands as well as additional interior wetlands. GPS waypoints and tracks were used and later transferred to Google earth to relate notes and photos to exact locations;
- The interior (landside) wetland boundaries were estimated based on our assessments of air photos, Google earth maps and visual inspection from road ways;
- During both days, attention was directed to making observations on Species At Risk (SAR) and potential SAR habitat (e.g., turtles, birds), as well as fish habitat and other species that would contribute to a higher score from a comprehensive wetland evaluation; and
- Potential threats and impacts to wetland areas were identified.

3. Findings from Background Research

Gerry Moraal, Minden MNR planner, was contacted to obtain background information on wetlands that had been previously evaluated. Gerry confirmed that there was only one evaluated wetland (Elephant Baptiste Wetland Complex) and that it was determined to be provincially significant. This wetland is located primarily in Elephant Lake and includes portions of the Hamilton Bay area at the west end of Baptiste Lake.

MNR also provided information on wetlands that were assessed through air photo interpretation and these wetlands are illustrated on Map 1 (page 15). Although aerial photography has improved in recent years, there are many situations where interpretation errors can occur. For example, the extent of wetland marshes located on lakes (lacustrine) are often underestimated and only include areas along the traditional shoreline edge. Lacustrine wetlands are known to extend out into the lake to a general depth of about 2 metres. As well, the size and extent of inland (palustrine) and riverine wetlands can also be misinterpreted. While the air photo interpretation is a good tool to identify the general location and extent of a wetland, on the ground assessment is needed to confirm this information.

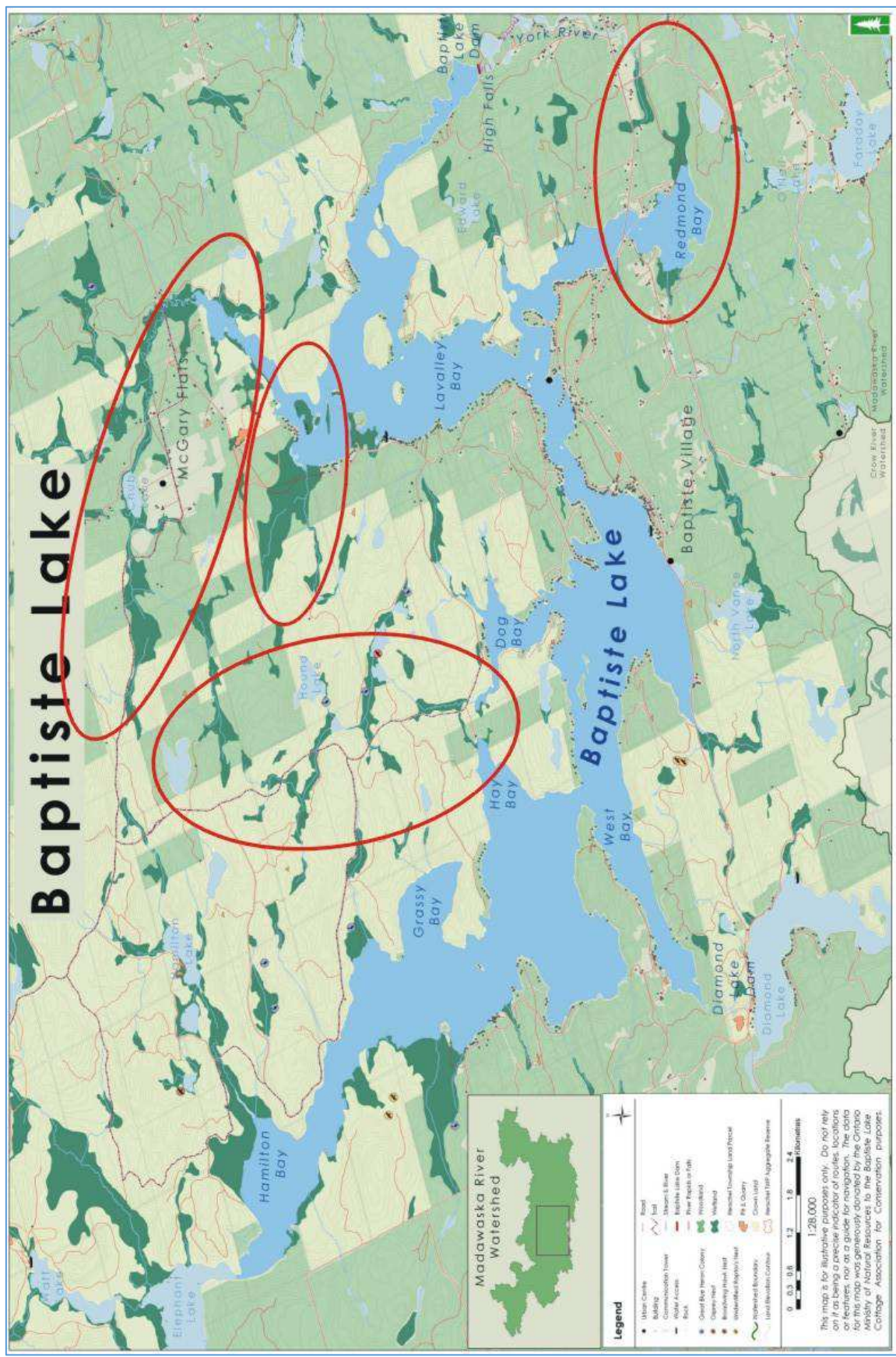
No information from the MNR was available on known species at risk on the lake and, unfortunately, the field assessment was conducted too late in the season to have a good opportunity of detecting any species at risk. Should the field assessment had been conducted earlier in the season, we would anticipate a better chance of detecting species at risk such as Snapping turtle (species of special concern), Blandings turtle (threatened species) and the least bittern (threatened). Anecdote information with conversations with lake residents has indicated the presence of Snapping turtle throughout the lake (source - FPSI). It is anticipated that a more detailed assessment and the appropriate times of the seasons would provide supporting data.

The Baptiste Lake Natural Heritage Inventory (FPSI, 2007) identified:

...several smaller patches of wetlands distributed throughout Baptiste Lake's shorelines, including a large wetland in Lavalley Bay and several smaller ones in McGary Creek and Redmond Bay (MNR wetland digital data, 2006 and Boat Survey, 2006). These wetlands and others adjacent to the lake's shorelines have not yet been evaluated for provincial significance, but are regarded as locally significant natural heritage features because of their contribution to water quality and biodiversity."

From the background research, including a review of the aerial photos, four wetland areas were selected to do a rapid assessment of function, features and attributes, including: McGary Creek, Lavalley Bay, Redmond Bay and the interior wetlands that flow into Dog Bay (see Map 1 on the following page for general location).

Map 1 - Location of Wetlands



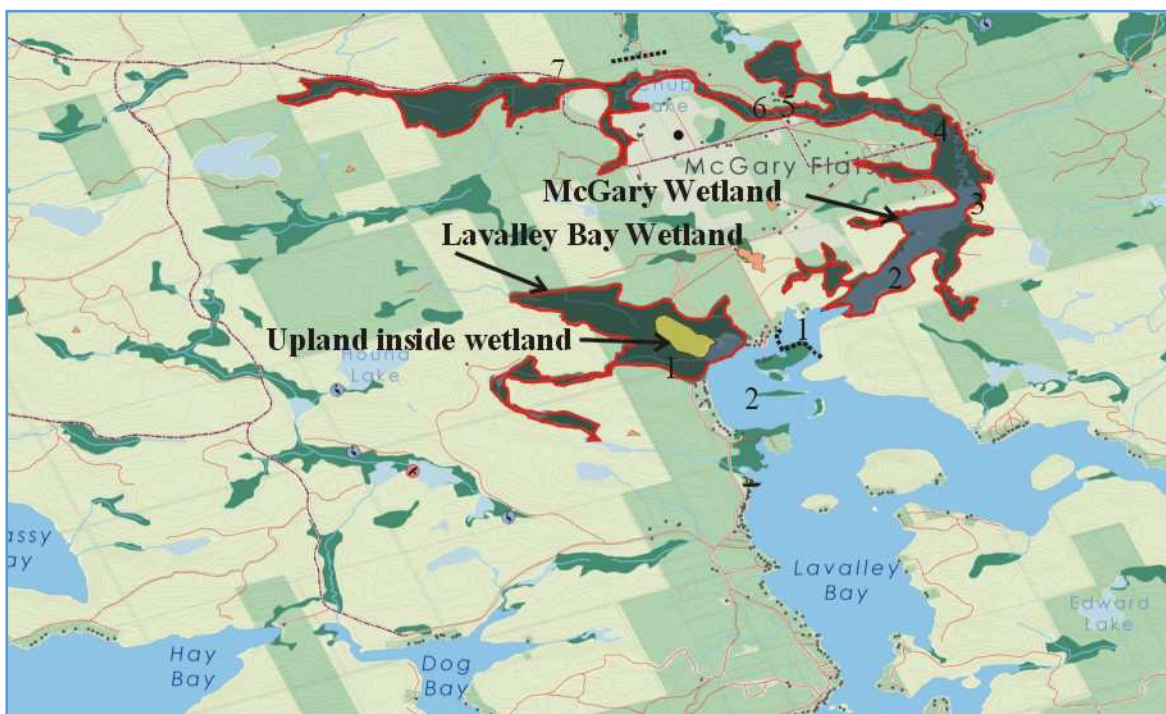
4. Results from Field Assessments

The following are our findings from the field assessments from each of the four wetland areas:

a. McGary Creek Wetland

This is the most interesting wetland with a large amount of biodiversity, accessibility and a large productive pickerel weed community and should be considered a single wetland unit. The extent of the wetland is shown on Map 2. The green shaded areas indicate the presence of a wetland according to current the MNR database, the dark blue shade indicates wetland areas that could be included from our assessment, and the red line outlines the entire wetland area. The numbers 1-7 refer to the photos provided in Appendix 1.

Map 2 - McGary Creek Wetland and Lavalley Wetland



At the mouth of McGary Creek, which is the lakeside boundary of the wetland, there is an open water area that is illustrated by the dotted line on Map 2 as an area that could be included in the wetland area (Photo 1, page 13). This area consists of a vegetation community of submerged aquatics dominated by pondweeds (*Potamogeton* spp) and common bladderwort. This area may be included in the total wetland area and be assessed based on its submergent vegetative community and contribution to fish habitat to a depth of 2 m, but requires further interpretation. The near shore component of this area has emergent and floating vegetation forms.

Map 2 illustrates the proposed area of McGary Creek Wetland outlined in red. The area immediately upstream from the open water habitat described above, contains a rich community dominated by pickerel weed (Photo 2, page 13). This is a large area that likely contains good waterfowl habitat particularly for fall migrating ducks. The size of this pickerel weed habitat makes it a very distinguishing feature on the lake. It would be interesting to know if this area is hunted by waterfowl hunters, which would increase the level of significance.

In the area below the first North Baptiste Road bridge a portion of the shore line is lined with areas that could be fen habitat dominated by sweet gale. We found the rose pogonia orchid growing here (Photo 3, page 14).

The area along McGary Creek immediately above the first bridge of the North Baptiste Road that crosses the wetland can be characterized as a riverine wetland with two wetland types: a tall shrub swamp dominated by speckled alder on the edges (Photo 4, page 14); and a marsh habitat immediately on both sides of McGary Creek.

At the next road crossing (Herschel Forest Trail) the wetland has narrowed (Photo 5, page 15). There is a large quantity of rock rubble (Photo 6, page 15) located on the downstream side of the culvert. The size, amount and location of the rubble suggests that these rocks were placed here and may now constitute a walleye spawning bed. Walleye typically spawn in fast moving water over rock rubble and it is possible that walleye from Baptiste Lake could come here in the spring to find well oxygenated water over clean rocks to spawn. If this is a walleye spawning bed it could add fish habitat value to any future wetland evaluation.

Chubb Lake is on McGary Creek and although most of this lake is not likely to be a wetland, there is a shoreline band of wetland area that occurs along the north side of the lake and maybe considered to be a contiguous connection between the upstream and downstream portions of the wetland.

The wetland areas upstream from Chubb Lake are characterized as having a marsh component dominated by woolgrass (Photo 7, page 16), a commonly occurring sedge. A palustrine (inland) wetland appears to extend further away from the stream comprised of a tall shrub component of mainly speckled alder.

b. Lavalley Bay Wetland Area

This wetland is located in the north west corner of Lavalley Bay adjacent to the McGary Creek Wetland (see Map 2). This wetland, as currently mapped, is mainly inland consisting of mainly a tall shrub swamp. Photos 1 and 2 (page 16, 17) illustrates the typical tall shrub habitat as seen from the cottage road. There is an interesting upland island that is shown on Map 2 (illustrated as "inside upland wetland") that can be seen by driving down North Baptiste Lake Road. There is a small area of lacustrine wetland mapped that is appended to the larger palustrine swamp habitat (indicated by blue shade).

There are a number of other smaller wetland units in the larger Lavalley Bay area and it is possible that the entire Lavalley Bay area including the McGary wetland could be considered one wetland complex consisting of several wetland units.

c. Redmond Bay Wetland

Redmond Bay is located south of the South Baptiste Road causeway. The bay is generally shallow and the near shore areas are comprised of tree stumps resulting from the elevated water levels caused by the damming of Baptiste Lake. The extent of the potential wetland area is illustrated on Map 3 (following page) and outlined in red.

On the east side of Redmond Bay, a portion of the mapped wetland appears to drain east into the York River and therefore it may be connected or contiguous to the wetland that drains into the east side of Redmonds Bay (Map 2). Further analysis of this would need to be examined more carefully through a further wetland assessment.

Map 3 - Redmond Bay Wetland



Photo 1 (page 17) illustrates Redmond Bay in the background and a lacustrine marsh in the foreground. There is a dense marsh at the east side of the bay that can be viewed from an old railway bed that can be walked. The potential of a walking trail through a wetland provides opportunities for nature observation and this would provide additional value in the social component of any wetland evaluation. The marsh along the south side of the rail trail is dominated by a community with the somewhat unusual dominant vegetation components of robust emergent cattails combined with the low shrub leatherleaf (Photo 2, page 18).

d. Interior Wetland Complex north of Dog Bay

There are a large number of small interior wetlands north of Dog Bay (Map 4). This location is an area of elevated hardwood forest with a large number of small beaver ponds on small permanent and intermittent (seasonal) streams. On August 20, 2013 we investigated a number of these areas and identified a nest in one of the beaver ponds, thought to be a great blue heron nest. An active loon nest was seen in the wetland in Dog Bay. This wetland complex is almost entirely surrounded by Crown land.

A small wetland area occurs at the west end of Dog Bay on Baptiste Lake which is characterized as a rich submergent component of *potamogetons*, bladderworts, Canada waterweed, coontail and others. As well, there is a variable floating component of water shield and yellow water lily. An obvious browse line on cedar trees (Photo 1, page 18) created by wintering deer eating portions of the understory. A winter deer yard in areas of a treed swamp would raise the wetland evaluation score.

A portion of a Google earth air photo is shown in photo 2 (page 19) and the beaver ponds are clearly defined. The interior beaver ponds have been mapped as wetlands by the MNR and our assessment on August 20, 2013 indicated that they are wetland units.

Map 4 - Interior Wetland Complex (north of Dog Bay)

Some of the beaver ponds are intact and flooded with a submergent vegetation component combined with a floating vegetation component (Photo 3, page 19) and usually with dead trees providing an important vegetation form. A large portion of the beaver ponds investigated were abandoned (Photo 4, page 20) with dams broken. This can be the result of a natural process and regenerates a wetland allowing decay of organic material releasing nutrients that will create a more productive pond when the pond is re-established. This process is imitated by Ducks Unlimited management of many of their created marshes.



5. Conclusion

A rapid wetland assessment was applied to four wetland areas on Baptiste Lake to determine the likelihood of their being scored to be provincially significant if they were evaluated under the Ontario Wetland Evaluation System (OWES).

During the two day rapid assessment attention was given to threats to the subject wetlands. One threat is invasive species. Eurasian milfoil was tentatively identified as it was in the Baptiste Lake report. Eurasian milfoil can dominate the submergent vegetation in many open water marshes and this was not the case where it was seen in low quantities. Eurasian milfoil has probably been in the lake for many decades and has achieved a balanced level. None of the other serious invasives were seen such as purple loosestrife, European frogbit and zebra mussels. This indicates that if present they are at low levels. The invasion of emerald ash borer has not apparently reached the area but this species will have a large effect on black ash that is prevalent in the treed swamp areas of the Baptiste wetlands. New shoreline development is occurring in some areas and in other locations there is an obvious lack of shoreline protection and this is a threat to some of the smaller wetland areas. No aquatic vegetation control was noticed and there was no recent evidence of dredging of wetlands.

A further comprehensive evaluation would provide a better understanding of the features and functions of the wetland and would determine whether the wetland is of sufficient importance to score as a Provincially Significant Wetland (PSW). Any evaluation would be reviewed and approved by staff of the MNR District office located in Bancroft.

The three wetland areas that appear to have the potential to be identified as a PSW, in order of priority, are: McGary Creek wetland, Lavalley Bay wetland (if evaluated as a wetland complex with McGary Creek) and finally Redmond Bay wetland. The interior wetland complex north of Dog Bay is not considered a priority, because many of the individual wetland units are on crown lands and also these interior wetland areas are unlikely to face significant threats.

a. McGary Creek Wetland

The McGary Creek Wetland should be recognized as the most valuable wetland in the eastern end of Baptiste Lake and should receive top priority for further wetland assessment. It contains three wetland site types, lacustrine (lake), riverine (river) and palustrine (inland), with marsh, swamp and probably fen wetland types. It is a large wetland, and size is one of the most important attributes in the OWES system. The wetland would likely score high in size, flood attenuation, groundwater recharge, productivity and biodiversity. As well, should the wetland include any Species at Risk habitat, this would also increase its likelihood of being provincially significant.

b. Lavalley Bay Wetland

The Lavalley Bay wetland, on its own, (as illustrated on Map 2) may not have enough area, features or functions to be identified as a PSW. However, if it were to be considered a complex together with the McGary Bay wetland, it would have a very high chance of being evaluated as provincially significant due to its size and potential habitat for species at risk. The determination of whether or not the Lavalley Bay and McGary Creek wetlands could be considered a complex, will require further investigation, in consideration of the following:

“Wetland complexes are commonly related in a functional way, that is as a group they tend to have similar or complementary biological, social and/or hydrological functions. Much of the wildlife in the area of the complex is variously dependent upon the presence of the entire complex of wetlands, with each wetland unit contributing to the whole....The grouping of wetland areas should only be done by experienced evaluators”(OWES).

c. Redmond Bay Wetland

The Redmond Bay wetland would score low on the hydrological component but could score well for social values. As well, the marshes are probably important fish habitat.

Redmond Bay contains a lot of lacustrine wetland area. The lake side edge was not viewed from the lake level and was difficult to interpret from air photos. For a better review, these wetlands would need to be viewed from a canoe.

Redmond Bay would likely not be a priority because of the lower chance for this wetland to score high enough to be a provincially significant wetland.

d. Interior Wetland Complex

The Interior Wetland Complex has a variety of habitats and values and there is a good chance that it would be a PSW if it were evaluated as a complex. However many of the interior wetlands are on Crown lands and not likely to encounter development threats and therefore may not be considered a priority for evaluation.

Appendix 1

Photos

McGary Creek Wetland

Lavalley Bay Wetland

Redmond Bay Wetland

Interior Wetland Complex



McGary Creek Wetland - Photo 1

Open water habitat with submergent vegetation.
Emergent community can be seen along shoreline



McGary Creek Wetland - Photo 2

Rich marsh habitat of pickerel weed



McGary Creek Wetland Photo 3

The Rose pogonia (orchid) was found in fen like wetland habitat



McGary Creek Wetland Photo 4

Riverine wetland site type on McGary Creek north from bridge on North Baptiste Road.



McGary Creek Wetland - Photo 5

Riverine wetland with tall shrub habitat on either side of McGary Creek



McGary Creek Wetland - Photo 6

Potential walleye spawning bed located just below culvert



McGary Creek Wetland - Photo 7

Palustrine (inland) wetland dominated by woolgrass (sedge family)
with small areas with floating water lilies



Lavalley Bay Wetland - Photo 1

Inland portion of wetland showing tall shrub component



Lavalley Bay Wetland - Photo 2

Palustrine wetland swamp with dead conifer component



Redmond Bay Wetland - Photo 1

Lacustrine wetland in the background (Photo taken from South Baptiste Lake Road causeway)



Redmond Bay Wetland - Photo 2

A rich marsh dominated by cattail and leatherleaf a low shrub



Interior Wetlands north of Dog Bay Photo 1

Dog Bay scattered floating water shield with rich submergent aquatics. Note winter browse line on cedar from deer



Interior Wetland Complex - Photo 2.

Google air photo showing clearly defined wetlands consisting of beaver ponds.



Interior Wetland Complex Photo 3

Beaver flooded pond with a variety of wetland community components



Interior Wetland Complex - Photo 4

Abandoned beaver pond provides important wetland habitat.