

PORCUPINE LAKE WETLAND COMPLEX EVALUATION, 1992

BY: BARB RIORDAN

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Porcupine Lake Wetland Complex Evaluation

Introduction

The Porcupine Lake Wetland Complex was evaluated in August, 1992, under the auspices of the Mattagami Region Conservation Authority. Porcupine Lake is located within the boundaries of Porcupine and South Porcupine in Whitney and Tisdale townships in the District of Cochrane. There is a public access point on the north shore of Porcupine Lake. The Porcupine and South Porcupine Rivers can be accessed from the lake, from Highway 101 and from the Dome Extension road.

The Porcupine Lake Wetland is referred to as a complex because local disturbances such as roads, railway tracks and urban areas have divided the wetland into sections. These sections are hydrologically connected and ecologically similar and, therefore, can be combined into one unit. The complex is 325.8 ha. in size. Marshes and swamps occupy 60% and 40% of the wetland, respectively. The wetland boundaries are illustrated in Figure 1.

There are four principal components in the Northern Ontario Wetland Evaluation System. These include the Biological, Social, Hydrological and Special Features Components. The Biological Component measures attributes of productivity, biodiversity and ecosystem age. The importance to people for economical, recreational, educational and cultural reasons is measured in the Social Component. The Hydrological Component involves flow stabilization, water quality improvement and the link between hydrological characteristics and ecosystem function. The Special Features Component includes attributes of species rarity and wildlife habitat.

The Porcupine Lake Wetland Complex scored 165 out of a possible 250 points in the Biological Component. Productivity in the wetland is good (24/35 points). The wetland is composed of marshes and swamps which are defined as productive wetland types because they contain soils high in mineral content. Approximately 59% of the area consists of highly productive clay soils, 23% is moderately productive sand, and 18% is unproductive organic soils (Table 2). The wetland is occupied by lacustrine and riverine type sites which are productive by definition because they receive water which is high in oxygen saturation and mineral content. The high Total Dissolved Solids and pH readings found throughout the wetland (Figure 2 and Table 1) confirm that the water is high in nutrient content, however, some of the dissolved solids probably originate from mine tailings and a sewage treatment plant located adjacent to the wetland. The limiting factor for productivity in the Porcupine Lake Wetland is its location within a geographical region that receives only 2200-2400 Growing Degree-Days in a season.

The wetland has a good level of biodiversity (100/149 points) for

a number of reasons. There are 11 different marsh communities and 12 different swamp communities. This diversity in vegetation communities offers a variety of habitats for wildlife species. The habitat surrounding the wetland is also diverse which can mean that a variety of upland species has access to the wetland. As well, more wetland species which require certain types of upland habitats to complete their life cycles can occupy the complex. The Porcupine Lake Wetland is hydrologically connected to nearby wetlands which is attractive to wildlife because they can move from one area to another in relative safety. The total length of edge within the wetland is high. Many wildlife species depend upon more than one habitat type and prefer to live in edge areas. The wetland offers an abundance of open water which occurs in such a manner that small embayments and meandering shorelines are common. This configuration of open water is important to wildlife species because it offers areas for nesting, feeding and loafing.

The Porcupine Lake Wetland Complex scored 158 out of a possible 250 points in the Social Component. The wetland supports several economically valuable products including timber, commercial baitfish and furbearers such as beaver, fox, lynx, otter and marten. The wetland is somewhat important for fishing, hunting and nature appreciation. Ice fishing occurs in Porcupine Lake, however, the lake is closed to walleye for the period of 1989 to 1995 so fishermen are limited to northern pike and yellow perch. Waterfowl are hunted in the marshes of the Porcupine and South Porcupine Rivers. Hiking trails around Porcupine Lake provide opportunities for nature appreciation and school groups use the area for educational purposes.

Since the wetland is in close proximity to urban areas, it can be easily identified and visited by many people. Approximately 73% of the complex is in private ownership (mostly mining companies and residents) which may restrict access to some areas. Disturbances such as roads, hydrolines, mine tailings and urban development have lowered the aesthetic values of the wetland. The wetland has no significant aboriginal or cultural values.

The Porcupine Lake Wetland Complex received 184 out of a possible 250 points in the Hydrological Component. The catchment basin is illustrated in Figure 3. The wetland is not important for attenuating flood waters (35/100 points). For a wetland to receive a maximum score in flood attenuation, it must represent at least 50% of the detention areas in the upstream watershed, 10% of the total catchment basin area, and be composed of surface forms which resist surface flow. The Porcupine Lake Wetland Complex represents only 20% of the detention area in the upstream watershed and only 5% of the total catchment basin. This means it offers a small storage area for flood waters. The surface forms of the wetland consists mainly of flooded areas and major flow tracks which offer little resistance to surface flow.

The wetland is not an important ground water recharge area. It is dominated by clay soils (Table 3) which are impermeable in nature and inhibit ground water recharge. As well, lacustrine and riverine type sites are not conducive to recharging ground water.

The ability of a wetland to provide downstream water quality improvement depends primarily on its location in the watershed. To be important the wetland must be located between upstream and downstream environments. This is characteristic of riverine sites and since 80% of the wetland is riverine it provides downstream water quality improvement. The wetland is dominated by trees, shrubs and herbaceous plants which offer short term removal of nutrients and other compounds, thereby improving water quality. There are several disturbances upstream and adjacent to the wetland such as point source land uses which have the potential of producing effluents that may be toxic for various aquatic and wildlife species (mines, a tailing treatment pond and a tailing spill, see Figure 3). Other disturbances include linear upslope uses which add chemicals and sediments to the water (major hydro corridor, roads, railways). This increases the value of the wetland for downstream water quality improvement.

The wetland is important for erosion control as it is dominated by trees and shrubs which provide protection from erosive forces through their strong root systems.

A wetland which has strong ground water discharge from its catchment basin and high hydrological activity at the wetland's margin will experience strong interaction with ground water. The stronger the wetland interacts with ground water the richer will be the ecological diversity. The soil characteristics of the Porcupine Lake Wetland catchment basin and the hydrological features of the wetland indicate that the interaction between ground water and the wetland is only moderate.

The Porcupine Lake Wetland Complex scored 250/250 points in the Special Features Component. Marshes and swamps have a rarity value in Site Region 3E. The wetland, therefore, received points for being composed of these wetland types.

The wetland is regionally significant as a waterfowl staging area. American coot and greater scaup, which are provincially significant species, use the wetland as a migratory stopover area. The Canada goose and double-crested cormorant are regionally significant species which also use the area as a migratory stopover. Canada geese and 5 double-crested cormorants were seen on Porcupine Lake in September 1992. The sora, another regionally significant species, may feed in the wetland's marshes. A sora was seen in the South Porcupine River in August, 1992.

The complex provides suitable habitat for waterfowl breeding and moulting. Broods of mallards and blue-winged teals were numerous.

Suitable breeding habitat for black duck, a species of special status, is also available.

The Porcupine River downstream of Porcupine Lake appears to be a colonial waterbird feeding area. Three double-crested cormorants, two adults and one immature, were seen on numerous occasions during this evaluation. Several sightings of great blue herons perched in dead trees were a daily occurrence.

Northern harriers (marsh hawks) and belted kingfishers were frequently seen perched in dead trees. Other bird species present in the wetland during this evaluation include 2 American bitterns, 2 common mergansers and one ruddy duck.

Winter cover for wildlife is available in the swamps which consist of a mixture of conifers and deciduous trees and shrubs. The wetland offers good habitat for walleye, northern pike, yellow perch, white suckers and forage fish.

Table 1 Total Dissolved Solids and pH Readings for the Porcupine Lake Wetland Complex

Location	T.D.S. (ppm)	pH
1	527	8.05
2	580	8.18
3	590	8.00
4	594	7.77
5	542	8.08
6	644	7.48
7	1390	7.90
8	738	7.81

TABLE 2 SOILS OF THE PORCUPINE LAKE WETLAND COMPLEX							
Soil Symbol	Soil Name	Soil Material	Fractional Area	Mineral		Organic	
				Clay/Loam	Sand	Mesic/Humic	Fibric
Sh	Shetland	calcareous lacustrine clay to silty clay	0.59				
He	Hearst	calcareous lacustrine clay to silty clay					
Ry	Ryland	calcareous lacustrine clay to silty clay					
Ka	Keenoa	very fine sand outwash	0.23				
N	Newfeld	very fine sand					
Py	Pyne	acidic medium sand					
Sas	Sasaginaga	fibric over mesic organic material	0.05				
Sn	Sunstrum	mesic organic material (40-160cm) over mineral soil					
Gf	Gaffney Lake	fibric organic material >160cm thick	0.13				

Source of information: Map of Soils of Ontario

Table 3 Soils of the Porcupine Lake Wetland Catchment Basin			
Soil Symbol	Soil Name	Soil Material	
Sh	Shetland	calcareous lacustrine clay to silty clay	Dominant
He	Hearst	calcareous lacustrine clay to silty clay	
Ry	Ryland	calcareous lacustrine clay to silty clay	
Ka	Keenoa	very fine sand outwash	Subdominant
N	Newfeld	very fine sand	
Py	Pyne	acidic medium sand	
Jn	Jeannie	acidic medium to coarse sandy gravel	
Hn	Hanna	acidic medium to coarse sandy till	
Fr	Frederick	acidic medium sand outwash	
R	Rock		

Source of Information: Map of Soils of Ontario

APPENDIX I: WETLAND DATA RECORD

WETLAND DATA RECORD

- i) WETLAND NAME AND OR NUMBER: Porcupine Lake Wetland
- ii) MNR ADMINISTRATIVE REGION: Northeastern DISTRICT: Timmins
MANAGEMENT AREA: Porcupine
- iii) CONSERVATION AUTHORITY JURISDICTION: Mattagami Region
(If not within a designated CA, check here: _____)
- iv) COUNTY OR REGIONAL MUNICIPALITY: Cochrane District
- v) TOWNSHIP: Whitney, Tisdale
- vi) LOTS & CONCESSIONS: Whitney - Con. 4, Lots 8, 9, 10; Con. 3, Lots 9, 10, 11, 12.
(attach separate sheet if necessary) Con. 2, Lots 11, 12; Con. 5, Lot 8; Tisdale - Con.
Lots 2, 3; Con.2, Lots 1, 2, 5; Con. 3, Lots 2, 3, 4, 5
(If lots and concessions unsurveyed, check here _____)
- vii) MAP AND AIR PHOTO REFERENCES
 - a) Latitude 48° 29' Longitude: 81° 11'
 - b) U.T.M. grid ref.: Zone: 17 Block: MD
Grid: E 806 N 700
 - c) National Topographic Series:
map name Timmins
map number(s) 42A SW edition 3rd ed.
Scale 1 : 100 000
 - d) Air photos: Date photo taken: 07/07/91 Scale: 1 : 20 000
Flight & plate numbers: 4816: 168, 169, 170
4817: 121, 122, 123, 124, 200, 204
4818: 239
(attach separate sheet if necessary)
 - e) Ontario Base Map numbers & scale 1 : 20 000
20 17 4800 53700 ; 20 17 4800 53600
attach separate sheets if necessary

viii) WETLAND SIZE AND BOUNDARIES

a) Single contiguous wetland area: _____ hectares

b) Wetland complex comprised of 5 individual wetlands:

Wetland Unit Number (for reference)	Size of each wetland unit	
Wetland Unit No. 1	<u>171.7</u> ha	(marsh: 99.5 ha; swamp: 72.2 ha)
Wetland Unit No. 2	<u>25.8</u> ha	(marsh: 7.5 ha; swamp: 18.3 ha)
Wetland Unit No. 3	<u>89.4</u> ha	(marsh: 7.8 ha; swamp: 81.6 ha)
Wetland Unit No. 4	<u>17.0</u> ha	(marsh: 8.1 ha; swamp: 8.9 ha)
Wetland Unit No. 5	<u>21.9</u> ha	(marsh: 7.9 ha; swamp: 14.0 ha)
Wetland Unit No. 6	_____ ha	
Wetland Unit No. 7	_____ ha	
Wetland Unit No. 8	_____ ha	
Wetland Unit No. 9	_____ ha	
Wetland Unit No. 10	_____ ha	
TOTAL WETLAND SIZE	<u>325.8</u> ha	

Attach rationale for including wetland units.

c) Rationale for wetlands bordering on deep water lakes and rivers (see p. 15)

n/a

d) Brief documentation of reasons for including any areas less than 0.5 ha in size:

n/a

attach separate sheets if necessary.

e) Rationale for any distances greater than .75 km (p. 19)

n/a

attach separate sheets if necessary

1.0 BIOLOGICAL COMPONENT

1.1 PRODUCTIVITY

1.1.1 GROWING DEGREE-DAYS/SOILS

<u>GROWING DEGREE DAYS</u>		<u>SOILS</u>	
(check one)		Estimated % of Area	
_____	<1600	59	clay/loam
_____	1600-2000	_____	silt/marl
x	2000-2400	_____	limestone
_____	2400-2800	23	sand
_____	2800-3000	5	humic/mesic
_____	>3000	13	fibric
		_____	granite
		_____	fibric

SCORING:

Growing Degree Days	Clay/Loam	Silt/Marl	Limestone	Sand	Humic/Mesic	Fibric	Granite
<1600	7	6	5	4	4	2	2
1600-2000	9	7	6	4	4	3	2
2000-2400	10 5.9	9	8	6 1.38	5 0.25	3 0.39	3
2400-2800	12	11	9	7	6	4	3
2800-3000	14	13	10	8	7	4	4
>3000	16	15	12	9	8	5	4

Steps required for evaluation: (maximum score 16 points)

1. Select GDD line in evaluation table applicable to your wetland;
2. Determine % of area of the wetland for each soil type;
3. Multiply fractional area of each soil type by score;
3. Sum individual soil type scores (round to nearest whole number).

In wetland complexes the evaluator should aim at determining the percentage of area occupied by the categories for the complex as a whole.

FINAL SCORE (GROWING DEGREE-DAYS/SOILS) 8

1.1.2 WETLAND TYPE

	Fractional Area	Scoring
bog	_____	x 5 = _____
fen	_____	x 8 = _____
swamp	<u>0.599</u>	x 11 = <u>6.6</u>
marsh	<u>0.401</u>	x 14 = <u>5.6</u>

WETLAND TYPE SCORE (Maximum 14 points) 12.2

1.1.4 SITE TYPE

	Fractional Area	Score
isolated	_____	x 1 = _____
palustrine (permanent or intermittent flow)	_____	x 2 = _____
riverine	<u>0.805</u>	x 4 = <u>3.2</u>
riverine (at rivermouth)	_____	x 5 = _____
lacustrine (at rivermouth)	<u>0.035</u>	x 5 = <u>0.2</u>
lacustrine (on enclosed bay, with barrier beach)	_____	x 3 = _____
lacustrine (exposed to lake)	<u>0.160</u>	x 2 = <u>0.3</u>

SITE TYPE SCORE (Maximum 5) 3.7

1.2 BIODIVERSITY

1.2.1 NUMBER OF WETLAND CLASSES

(Check one)	Score (Choose one only)	
_____ one	9	points
<u> X </u> two	13	
_____ three	20	
_____ four	30	

NUMBER OF WETLAND TYPES SCORE (Maximum 30) 13

1.2.2 VEGETATION COMMUNITIES

Attach a separate sheet listing community (map) codes, vegetation forms and dominant species. Communities should be grouped by number of forms. For example, 2 form communities might appear as follows:

2 forms

Code Forms Dominant Species

M6 re ff Typha latifolia; Lemna minor, Wolffia
 S1 ts gc Alnus rugosa, Salix discolor; Impatiens capensis, Thelypteris palustris

Note that the dominant species for each form are separated by a semicolon. The dominant species within a form are separated by commas.

Scoring:

# of communities with 1-3 forms	# of communities with 4-5 forms	# of communities with 6 or more forms
1 = 1.5 points	1 = 2 points	1 = 3 points
2 = 2.5	2 = 3.5	x 2 = 5
3 = 3.5	3 = 5	3 = 7
4 = 4.5	4 = 6.5	4 = 9
5 = 5	5 = 7.5	5 = 10.5
6 = 5.5	6 = 8.5	6 = 12
7 = 6	7 = 9.5	7 = 13.5
8 = 6.5	x 8 = 10.5	8 = 15
9 = 7	9 = 11.5	9 = 16.5
10 = 7.5	10 = 12.5	10 = 18
11 = 8	11 = 13	11 = 19
+0.5 each additional community = <u>9</u>	+0.5 each additional communitiy = <u>10.5</u>	+1 each additional community = <u>5</u>

(e.g.) a wetland with 3 one form communities, 4 two form communities, 12 four form communities and 8 six form communities would score:

$6 + 13.5 + 15 = 34.5 = 35$ points.

VEGETATION COMMUNITIES SCORE (maximum 45) 24.5

1.2.2. VEGETATION COMMUNITIES

Two Forms

M5	re, ff	cattails; duckweed
W7	su, re	big sheath pondweed; bulrush
M9	re, su	cattails; muskgrass
M10	ne, re	reed canarygrass; cattails
S8	ne, dts	sedges; dead tall shrubs
W11	f, su	bulthead lily; water milfoil
S11	ts, ne	speckled alder; sedges
S12	re, ts	cattails; speckled alder

Three Forms

M2	re, su, ff	cattails; coontail; duckweed
M4	ne, su, ff	reed canarygrass; coontail; duckweed
S6	ts, gc, ne	speckled alder; jewelweed; reed canarygrass
S7	ts, h, gc	speckled alder; balsam poplar; tall meadow rue
S10	ne, ts, dts	sedges; speckled alder; dead tall shrubs

Four Forms

S2	ne, ts, gc, ls	sedges; speckled alder; tall meadow rue; wild raspberry
S1	ts, h, ne, gc	speckled alder; balsam poplar; sedges; tall meadow rue
S5	ne, ts, gc, dh	reed canarygrass; speckled alder; tall meadow rue; dead deciduous
M8	re, ne, su, f	cattails; burreed; coontail; bulthead lily
S9	ne, ts, gc, dts	sedges; speckled alder; tall meadow rue; dead tall shrubs
S3	ts, c, gc, ne	speckled alder; black spruce; tall meadow rue; grasses
M3	ne, re, be, dc	sedges; cattails; mild water pepper; dead conifer

Five Forms

W1	su, ne, re, ff, dh	coontail; reed canarygrass; cattails; duckweed; dead deciduous
----	--------------------	--

Six (or more) Forms

S4	m, ts, c, ls, gc, ne	sphagnum; speckled alder; black spruce; labrador tea; ferns; woodland horsetail
M6	re, be, ne, ff, gc, su	cattails; water arum; reed canarygrass; duckweed; jewelweed; naiad

1.2.3 DIVERSITY OF SURROUNDING HABITAT

(Check all appropriate items)

_____	recent burns (< 5yr)
_____ X	utility corridor
_____ X	recent cutover or clearcut
_____	crops
_____ X	pasture
_____	ravine
_____ X	open lake or deep water
_____	abandoned agricultural land
_____ X	deciduous forest
_____ X	coniferous forest (including tamarack)
_____	abandoned pits & quarries
_____	terrain undulating
_____	fence rows
_____	creek flood plain
_____ X	rock outcrop
_____	other significant habitat type (describe on attached sheet)

DIVERSITY OF SURROUNDING HABITAT SCORE (1 each, maximum 6) 6

1.2.4 PROXIMITY TO OTHER WETLANDS

(Check first appropriate category only)

Scoring

- 1) _____ hydrologically connected by surface water to other wetlands (different dominant class), or open lake or deep river within 1.5 km 8 points
- 2) X hydrologically connected by surface water to other wetlands (same dominant class) within 0.5 km 8
- 3) _____ hydrologically connected by surface water to other wetlands (different dominant class), or open lake or deep river from 1.5 to 4 km away 5
- 4) _____ hydrologically connected by surface water to other wetlands (same dominant class) from 0.5 to 1.5 km away 5
- 5) _____ within 0.75 km of other wetlands (different dominant class) or open water body, but not hydrologically connected by surface water 3
- 6) _____ within 1 km of other wetlands, but not hydrologically connected by surface water 1
- 7) _____ no wetland within 1 km 0

PROXIMITY TO OTHER WETLANDS SCORE (maximum 8) 8

1.2.5 INTERSPERSION

Number of Intersections	Score
26 or less _____	3 points
27 to 40 _____	6
41 to 60 _____	9
61 to 80 _____	12
81 to 100 _____	15
100 to 125 <u> x </u>	18
126 to 150 _____	21
151 to 175 _____	24
176 to 200 _____	27
>200 _____	30

INTERSPERSION SCORE (One only, maximum 30) = 18

1.2.6 OPEN WATER TYPES

Permanently flooded: (Check one)	Score	
_____ no open water		0 points
_____ type 1		8
_____ type 2		8
_____ type 3		14
_____ type 4		20
<u> x </u> type 5		30
_____ type 6		8
_____ type 7		14
_____ type 8		3

OPEN WATER SCORE (one only; max. 30 pts) = 30

1.3 ECOSYSTEM AGE

<u>Age related attributes of wetland classes</u>	<u>Fractional Area</u>	<u>Scoring</u>
bog	_____	x 25 = _____
fen, treed to open on deeper soils, floating mats or marl	_____	x 20 = _____
fen, on limestone rock	_____	x 5 = _____
swamp	<u> 0.599 </u>	x 3 = <u> 1.8 </u>
marsh	<u> 0.401 </u>	x 0 = <u> 0 </u>

ECOLOGICAL AGE SCORE (Maximum 25) 1.8

1.4 SIZE (See size table -- Biological Component)

 325.8 hectares
 SIZE SCORE (BIOLOGICAL COMPONENT) (Maximum 40) 40

2.0 SOCIAL COMPONENT

2.1 ECONOMICALLY VALUABLE PRODUCTS

2.1.1 WOOD PRODUCTS

Area of wetland forested (ha); not wetland size

			Score	
1)	_____	=	<5 ha	0 points
2)	_____	=	5 - 25 ha	4
3)	_____	=	26 - 50 ha	6
4)	<u> X </u>	=	51 - 100 ha	8
5)	_____	=	101 - 200 ha	10
6)	_____	=	>200 ha	12

Source of information: Field check

WOOD PRODUCTS SCORE (Maximum 12) = 8

2.1.2 LOWBUSH CRANBERRY

(Check one) Score (Choose one)

present	1) _____	2 points
absent	2) <u> X </u>	0

Source of information: Field check

LOWBUSH CRANBERRY SCORE (Maximum 2) 0

2.1.3 WILD RICE

(Check one) Score (Choose one)

present (at least 0.5 ha)	1) _____	10 points
absent	2) <u> X </u>	0

Source of information: Field check

WILD RICE SCORE (Maximum 10) 0

2.1.4 COMMERCIAL FISH (BAIT FISH AND/OR COARSE FISH)

Score (Choose one)

present 1) x 12 points
 absent 2) 0

Source of information: Field check

COMMERCIAL BAITFISH SCORE (Maximum 12) = 12

2.1.6 FURBEARERS

(Consult Appendix 9)

	<u>Name of furbearer</u>	<u>Source of information</u>
1)	<u>beaver</u>	<u>Bert Massie, Conservation Officer</u>
2)	<u>fox</u>	<u>Ministry of Natural Resources</u>
3)	<u>lynx</u>	<u>896 Riverside Drive</u>
4)	<u>otter</u>	<u>Timmins, ON</u>
5)	<u>marten</u>	<u>(705) 267-7951</u>

Scoring: 3 points for each species, maximum 12

FURBEARER SCORE (Maximum 12) 12

2.2 RECREATIONAL ACTIVITIES

Type of Wetland-associated Use

Intensity of Use	Hunting	Nature Appreciation or Ecosystem Study	Fishing
High	30 points	30	30
Moderate	15 x	15 x	15 x
Low	5	5	5
None	0	0	0

(score one level for each of the three wetland uses; scores are cumulative; maximum score 80 points)

Sources of information: hunting: Bert Massie - Conservation Officer, MNR

nature: Bert Massie

fishing: Milan Vukelich - District Biologist, MNR

RECREATIONAL ACTIVITIES SCORE (Maximum 75) = 45

2.3 LANDSCAPE AESTHETICS

2.3.1 DISTINCTNESS

(Check one)	Score (Choose one)	
clearly distinct	1) <u> x </u>	3 points
indistinct	2) <u> </u>	0

LANDSCAPE DISTINCTNESS SCORE (Maximum 3) 3

2.3.2 ABSENCE OF HUMAN DISTURBANCE

(check one)		Score
(1) Human disturbances absent or nearly so	1) <u> </u>	7 points
(2) One or several localized disturbances	2) <u> </u>	4
(3) Moderate disturbance; localized water pollution	3) <u> x </u>	2
(4) Wetland intact but impairment of ecosystem quality intense in some areas	4) <u> </u>	1
(5) Extreme ecological degradation, or water pollution severe and widespread	5) <u> </u>	0

Source of information: Field check

ABSENCE OF HUMAN DISTURBANCE SCORE (Maximum 7) 2

2.4 EDUCATION AND PUBLIC AWARENESS

2.4.1 EDUCATIONAL USES

		Score	
frequent	1) <u> x </u>	20 points	(3-4 visits per year)
infrequent	2) <u> </u>	12	
not known	3) <u> </u>	0	

Source of information: Roland Michener Secondary School-Head of Geography Department

EDUCATIONAL USES SCORE (Maximum 20) 20

2.4.2 FACILITIES AND PROGRAMS

(check one)	Score (Choose one)
Staffed interpretation centre	1) <u> </u> 8 points
No interpretation centre or staff, but a system of self-guiding trails or brochures available	2) <u> </u> 4
no facilities or programs	3) <u> x </u> 0

Source of information: Mattagami Region Conservation Authority

FACILITIES AND PROGRAMS SCORE (Maximum 8) = 0

2.4.3 RESEARCH AND STUDIES

(check appropriate spaces)

Score all appropriate categories

- (1) Long term research has been done 1) _____ 12 points
- (2) Research papers published in refereed scientific journal or as a thesis 2) _____ 10
- (3) One or more (non-research) reports have been written on some aspect of the wetland's flora, fauna, hydrology, etc. 3) x 5
- (4) No research or reports 4) _____ 0

Attach list of known reports by above categories
(scores are cumulative; maximum score 12 points)

RESEARCH AND STUDIES SCORE (Maximum 12) 5

2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT

Circle the highest scoring category applicable

Distance of wetland from settlement	population >10,000	population 2,500 - 10,000	population <2,500 or cottage community
within or adjoining settlement	40 points	26 <u> x </u>	16
0.5 - 10 km from settlement	26	16	10
10 - 60 km from settlement	12	8	4
> 60 km from settlement	5	2	0

Name of settlement: Porcupine/South Porcupine

PROXIMITY TO HUMAN SETTLEMENT SCORE (Maximum 40) 26

2.6 OWNERSHIP

Fractional Area = FA = area/total wetland area

	Score
FA of wetland in public or private ownership, held under contract or in trust for wetland protection	_____ x 10 _____
FA of wetland in public ownership, not as above	<u>0.27</u> x 8 <u>2.2</u>
FA of wetland in private ownership, not as above	<u>0.73</u> x 4 <u>2.9</u>

Source of information: City Hall - Landowner Status

OWNERSHIP SCORE (Maximum 10) = 5.1

2.7 SIZE (See size table --Social Component)

325.8 hectares

SIZE SCORE (SOCIAL COMPONENT) (Maximum 20) 20

2.8 ABORIGINAL AND CULTURAL VALUES

Either or both Aboriginal or Cultural Values may be scored, however, the maximum score permitted for 2.8 is 30 points.

2.7.1 Aboriginal Values

	Score
Important	_____ 30 points
Not important	<u>x</u> 0
Unknown	_____ 0

(maximum score 30 points)

2.7.2 Cultural Heritage

	Score
Significant	_____ 30 points
Not significant	<u>x</u> 0
Unknown	_____ 0

(maximum score 30 points)

NOTE: the maximum combined score for 2.8.1 and 2.8.2 is 30 points.

SCORE FOR ABORIGINAL AND CULTURAL VALUES 0

3.0 HYDROLOGICAL COMPONENT

3.1 FLOOD ATTENUATION (100 Points)**STEP 1. DETERMINATION OF THE UPSTREAM DETENTION FACTOR (DF)**

If wetland is Isolated, go directly to Step 4.

If wetland is lacustrine and the ratio of wetland area:lake area is >0.1 , OR wetland is riverine on the St. Mary's River, go to Step 4.

All other wetlands:

a)	Wetland area (ha)	<u>240.2</u>
b)	Total detention areas (ha) in wetland's watershed including area of the wetland	<u>1173.2</u>
c)	Ratio of a:b	<u>0.2</u>
d)	Upstream detention factor: (c) x 2 (Note: maximum allowable value = 1, minimum value = 0)	<u>0.4</u>

STEP 2. DETERMINATION OF PEAK FLOW ATTENUATION FACTOR (AF)

a)	Wetland area (ha)	<u>240.2</u>
b)	Size of wetland catchment basin (ha) (including wetland area)	<u>5065.9</u>
c)	Ratio of a:b	<u>0.05</u>
d)	Wetland attenuation factor (c) x 10 Note: Maximum allowable value = 1, minimum value = 0)	<u>0.5</u>

STEP 3. DETERMINATION OF WETLAND SURFACE FORM FACTOR (FF)

From the list below, select surface form which best describes the wetland. In wetlands with more than one surface form, determine the final score by multiplying the fractional area of each surface form by the score. Sum the partial scores to obtain the total Surface Form Score.

<u>Surface Form</u>	<u>Fractional Area</u>	<u>Factor</u>	<u>Score</u>
Flooded with little or no aquatic vegetation	<u>0.20</u>	x 0	<u>0</u>
Flooded but with submergent or emergent vegetation	<u> </u>	x 0.2	<u> </u>
Major flow track present	<u>0.80</u>	x 0.2	<u>0.16</u>
Flat (lawn) vegetation	<u> </u>	x 0.5	<u> </u>
Hummock-depression microtopography	<u> </u>	x 0.7	<u> </u>
Patterned flow track	<u> </u>	x 0.7	<u> </u>
Patterned, no flow track	<u> </u>	x 1.0	<u> </u>
SURFACE FORM FACTOR SCORE			<u>0.16</u>

STEP 4. CALCULATION OF FINAL SCORE

Wetland is entirely Isolated 100 points

Wetland is lacustrine and wetland area:lake area is >0.1, OR wetland is along the St. Mary's River 0 points

For all other wetlands, calculate as follows:

1) Maximum score 100 points

2) Upstream Detention Factor (DF) 0.4

3) Wetland Attenuation Factor (AF) 0.5

4) Surface Form Factor (FF) 0.16

$[(DF + AF + FF)/3] \times \frac{100}{\text{Initial Score}}$ (1.06/3) x 100

TOTAL FLOOD ATTENUATION SCORE: 35.3

3.2 GROUND WATER RECHARGE (30 Points)**3.2.1 SITE TYPE**

Determine the fractional area (FA) of each wetland site type relative to the entire area of the wetland (i.e. FA = area of wetland site type/total wetland area)

Wetland Site TypeScore

- a) Isolated or Palustrine
b) Riverine
c) Lacustrine

$$\begin{array}{l} \text{FA} \quad \underline{\hspace{2cm}} \quad \times 20 = \underline{\hspace{2cm}} \\ \text{FA} \quad \underline{0.805} \quad \times 5 = \underline{4.03} \\ 0 \end{array}$$

SITE TYPE SCORE (STC): a + b + c 4.03

3.2.2 SOILS

EVALUATION (MAXIMUM 10 POINTS) (Circle appropriate category)

Dominant site type	hydrologic soils class A, B or C (ie non-clay soils)	hydrologic soils class D (clays)
Isolated	10 points	5
Palustrine	7	4
Riverine	5	5 x
Lacustrine	0	0

HYDROLOGICAL SOIL CLASS SCORE (HSC) (max. 10 points) = 5

TOTAL GROUNDWATER RECHARGE FUNCTION (STC + HSC; max. 30 pts) = 9.03

3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT (MAXIMUM 100 POINTS)**3.3.1 WATERSHED IMPROVEMENT FACTOR**

EVALUATION: (30 points x Improvement Factor)

Calculation of WIF is based upon the fractional area (FA) of each site type within the wetland.
FA = area of wetland site type/total area of the wetland

Site TypeImprovement Factor (IF)

$$\begin{array}{l} \text{Isolated} \quad \text{FA} \quad \underline{\hspace{2cm}} \quad \times 0.5 = \underline{\hspace{2cm}} \\ \text{Riverine} \quad \text{FA} \quad \underline{0.805} \quad \times 1.0 = \underline{0.805} \\ \text{Palustrine with no inflow} \quad \text{FA} \quad \underline{\hspace{2cm}} \quad \times 0.7 = \underline{\hspace{2cm}} \\ \text{Palustrine with inflows} \quad \text{FA} \quad \underline{\hspace{2cm}} \quad \times 1.0 = \underline{\hspace{2cm}} \\ \text{Lacustrine on lake shoreline} \quad \text{FA} \quad \underline{0.160} \quad \times 0.2 = \underline{0.032} \\ \text{Lacustrine at lake inflow or outflow} \quad \text{FA} \quad \underline{0.035} \quad \times 1.0 = \underline{0.035} \end{array}$$

SCORE (30 points x Improvement Factor) 26.2

3.3.2 ADJACENT AND WATERSHED LAND USE**EVALUATION: (50 points total)**

Select the appropriate categories from each section below. If more than one category is selected, sum the score. The maximum number of points available is 50.

1. Broad upslope land-use (BLU), such as logging, agriculture, or other activities which alter the natural vegetation cover in an extensive manner.

Choose one		Factor
> 50% of upslope area	_____	1.0
20-50% of upslope area	_____	0.7
1-20% of upslope area	_____ x	0.2

SCORE FOR BLU

20 points x BLU Factor 4

2. Linear upslope uses (LUU) e.g. roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment.

Choose the highest only		Factor
Major corridor	_____ x	1.0
Secondary corridor	_____	0.7
Tertiary corridor	_____	0.4
Temporary or abandoned	_____	0.2
None	_____	0

SCORE FOR LUU

15 x LUU Factor = 15 points

3. Point source (PS) land-uses producing toxic effluents, such as heavy industry, pulp and paper plants, mines, etc.

Present	_____ x	1.0
Not present	_____	0

SCORE FOR PS

15 x PS Factor = 15 points

TOTAL SCORE FOR ADJACENT AND WATERSHED LAND USE (BLU SCORE + LUU SCORE + PS SCORE) 34 points

3.3.3 VEGETATION FORM

EVALUATION: (10 points x Vegetation Form Factor (VFF))

Dominant Vegetation Form

Choose one		Factor
Trees, shrubs or herbs	x	0.75
Emergents, submergents	_____	1.0
Little or no vegetation	_____	0

SCORE: Dominant Vegetation Form 10 x VFF = 7.5 points

3.4 CARBON SINK

EVALUATION: (MAXIMUM 5 POINTS)

Evaluate based upon the dominant wetland type

	Carbon Sink Factor (CSF)
1. Wetland a bog or fen with organic soils occupying 50% or more of the area	1.0
2. Wetland has organic soils occupying 10 to 50% of the area (i.e. mainly mineral or undesignated soils)	0.4 x
3. Marshes & swamps with >50% organic soil	0.6
4. Wetland with less than 10% or soils organic	0

CARBON SINK SCORE: 5 x CSF = 2.0 points

3.5 SHORELINE EROSION CONTROL

EVALUATION: (MAXIMUM 15 POINTS)

From the wetland vegetation map determine the dominant vegetation type within the erosion zone for lacustrine and riverine site type areas only. Score according to the factors listed below.

Shoreline Vegetation	Erosion Control Factor (ECF)
Trees or Shrubs	1.0 x
Emergents	0.5
Submergents	0.4
Other vegetation	0.2
No vegetation	0
No shoreline	0

SCORE: 15 x ECF 15

3.6 GROUNDWATER DISCHARGE-ECOLOGICAL FUNCTION OF HYDROLOGY**EVALUATION: (MAXIMUM 100 POINTS)**

Circle the highest scoring characteristic applicable for each of the categories below.

INTERACTION**C A T C H M E N T**

Wetland Class	bog 0 points	swamp/marsh 5 points	x	fen 10 points
Basin Topography	flat to rolling 0	hilly 5		major relief break 10 x
Fractional Area	large >50% 0	moderate 6-50% 5		small <5% 10 x
Circularity Index	circular >0.8 0	irregular 0.5-0.8 5		very irregular <0.5 10 x
Catchment Soils Coverage	patchy 0	thin 5	x	thick 10
Catchment Soils Permeability	low 0	moderate 5	x	high 10
Lagg Development	none found 0	minor 5	x	common 10
Seeps at edge of wetland	none found 0	1-3 seeps 5	x	4 or more seeps 10
Iron precipitates evident at edge	no 0	some 2	x	yes 5
Surface marl deposits	none 0	1-3 deposits 2	x	4 or more deposits 5
Wetland pH	low <4.2 0	moderate 4.2-5.7 5		high >5.7 15 x

Sum the scores for each of the above categories, maximum score 100 points.

SCORE : Sum of above (maximum 100 points) = 55

4.0 SPECIAL FEATURES COMPONENT

4.1 RARITY

4.1.1 WETLANDS

Hills Site Region: 3E
Hills Site District: 3

Wetland class (check one or more)

- 1) _____ bog
- 2) _____ fen
- 3) X swamp
- 4) X marsh

SCORE (SEE TABLE ON NEXT PAGE, ADD ALL SCORES FROM THE APPROPRIATE ROW) 40

4.1.2 SPECIES

4.1.2.1 BREEDING HABITAT FOR AN ENDANGERED SPECIES

Name of species	Source of information
1) _____	_____
2) _____	_____
3) _____	_____

Attach documentation

Scoring

For one species	250 points
For each additional species	250

(score is cumulative; no maximum score)

BREEDING HABITAT FOR ENDANGERED SPECIES SCORE 0

Unit No.	Hill's Site Region & District	No. of Points			
		Marsh	Swamp	Fen	Bog
0	Arctic	20	30	0	30
1E	Subarctic Forest	20	30	0	20
2E	James Bay	20	20	0	20
2B	Big Trout Lake	20	20	0	10
3E	Lake Abitibi	20	20	10	0
3W	Lake Nipigon	20	20	10	0
3S	Lake St. Joseph	20	20	10	0
4E	Lake Temagami	20	20	10	0
4W	Pigeon River	20	10	20	0
4S	Wabigoon Lake	20	10	20	0
5-1	Thessalon	10	0	30	20
5-2	Gore Bay	20	0	20	20
5-3	La Cloche	20	0	30	20
5-4	Sudbury	10	0	30	10
5-5	North Bay	10	0	20	0
5-6	Tomiko	10	0	20	0
5-7	Parry Sound	20	0	30	20
5-8	Huntsville	20	0	30	20
5-9	Algonquin Park	10	0	30	0
5-10	Brent	20	0	30	0
5-11	Bancroft	0	10	30	10
5-12	Renfrew	0	0	30	10
5-S	Lake of the Woods	10	10	20	10

Notes to the Evaluation table:

Scoring on class representation is as follows:

- 30 = area of that class accounts for less than 10% of the total wetland area of that site region or district.
- 20 = area of that class accounts for between 10 and 30% of the total wetland area in that site region or district.
- 10 = area of that class accounts for between 30 and 60 % of the total wetland area in that site region or district.
- 0 = area of that class accounts for more than 50% of the total wetland area of that site region or district.

4.1.2.2 TRADITIONAL MIGRATION OR FEEDING HABITAT FOR AN ENDANGERED SPECIES

Name of species	Source of information
1) _____	_____
2) _____	_____
3) _____	_____

Attach documentation

Scoring

For one species	150 points
For each additional species	75

(score is cumulative; no maximum score)

TRADITIONAL FEEDING HABITAT FOR ENDANGERED SPECIES SCORE 0

4.1.2.3 PROVINCIALY SIGNIFICANT SPECIES OF FAUNA

Name of species	Source of information
1) <u>Greater Scaup</u>	<u>John Boos - Ducks Unlimited</u>
2) <u>American Coot</u>	<u>John Boos - Ducks Unlimited</u>
3) _____	<u>Unit 5, 33 Iroquois Rd.</u>
4) _____	<u>Timmins</u>
5) _____	<u>(705) 267- 4218</u>
6) _____	_____
7) _____	_____
8) _____	_____
9) _____	_____
10) _____	_____

Attach separate list if necessary; Attach documentation

Scoring:

Number of provincially significant species of fauna in wetland: Score

One species	=	50	
2 species	=	80	x
3 species	=	95	
4 species	=	103	
5 species	=	111	
6 species	=	116	
7 species	=	121	
8 species	=	126	
9 species	=	131	
10 species	=	134	
11 species	=	137	
12 species	=	140	
13 species	=	143	
14 species	=	146	
15 species	=	149	
16 species	=	151	
17 species	=	153	
18 species	=	155	
19 species	=	157	
20 species	=	159	
21 species	=	161	
22 species	=	163	
23 species	=	165	
24 species	=	167	
25 species	=	169	

Add one point for every species past 25 (for example, 26 species = 170 pts, 27 species = 171 pts etc...) (no maximum score)

SCORE FOR PROVINCIALY SIGNIFICANT FAUNA 80

4.1.2.4 PROVINCIALY SIGNIFICANT SPECIES OF FLORA

Name of species	Source of information
1) <u>key not available</u>	_____
2) _____	_____
3) _____	_____
4) _____	_____
5) _____	_____
6) _____	_____

- 7) _____
- 8) _____
- 9) _____
- 10) _____

Attach separate list if necessary; Attach documentation

Scoring:

Number of provincially significant species of fauna in wetland: Score

One species	=	50
2 species	=	80
3 species	=	95
4 species	=	103
5 species	=	111
6 species	=	116
7 species	=	121
8 species	=	126
9 species	=	131
10 species	=	134
11 species	=	137
12 species	=	140
13 species	=	143
14 species	=	146
15 species	=	149
16 species	=	151
17 species	=	153
18 species	=	155
19 species	=	157
20 species	=	159
21 species	=	161
22 species	=	163
23 species	=	165
24 species	=	167
25 species	=	169

Add one point for every species past 25 (for example, 26 species = 170 pts, 27 species = 171 pts etc...) (No maximum score)

SCORE FOR PROVINCIALY SIGNIFICANT FLORA 0

4.1.2.5 REGIONALLY SIGNIFICANT SPECIES

SIGNIFICANT IN SITE REGION:

Name of species	Source of information
1) <u>Double-crested Cormorant</u>	<u>Field checks + John Boos - Ducks Unlimited</u>
2) <u>Canada Goose</u>	_____
3) <u>Sora</u>	_____
4) _____	_____
5) _____	_____
6) _____	_____
7) _____	_____
8) _____	_____
9) _____	_____
10) _____	_____

Attach separate list if necessary; Attach documentation

Scoring

Number of significant species at Site Region level in wetland: Score

One species	=	20	
2 species	=	30	
3 species	=	40	x
4 species	=	50	
5 species	=	60	
6 species	=	65	
7 species	=	70	
8 species	=	75	
9 species	=	80	
10 species	=	85	

Add one point for every species past 10. (No maximum score)

SCORE FOR SIGNIFICANT SPECIES (SITE REGION) 40

4.2.1.6 SIGNIFICANT IN SITE DISTRICT

Name of species	Source of information
1) _____	_____
2) _____	_____
3) _____	_____
4) _____	_____
5) _____	_____
6) _____	_____
7) _____	_____
8) _____	_____
9) _____	_____
10) _____	_____

Attach separate list if necessary; Attach documentation

Scoring:

Number of significant species at Site District level in wetland Score

One species	=	10
2 species	=	17
3 species	=	24
4 species	=	31
5 species	=	38
6 species	=	41
7 species	=	44
8 species	=	47
9 species	=	50
10 species	=	53

For each significant species over 10 in the wetland, add 1 point.
(No maximum score)

SCORE FOR SIGNIFICANT SPECIES (SITE DISTRICT) 0

4.1.2.6 SPECIES OF SPECIAL STATUS

Black Duck

Suitable breeding habitat present and within assessment range (Table 15)

40 - 80 IP/100 km sq	_____	25 points
20 - 40 IP/100 km sq	_____	20
10 - 20 IP/100 km sq	_____ x _____	15
5 - 10 IP/100 km sq	_____	10
1 - 5 IP/100 km sq	_____	5

SCORE FOR BLACK DUCK 15

4.2 SIGNIFICANT FEATURES AND/OR FISH & WILDLIFE HABITAT

4.2.1 NESTING OF COLONIAL WATERBIRDS

check one	status	species	source of information	score
1)	currently nesting			50 points
2)	known to have nested within past 5 years			25 points
3)	active feeding area (great blue heron excluded)			15 points x
4)	none known			0 points

SCORE FOR COLONIAL WATERBIRDS 15

4.2.2. WINTER COVER FOR WILDLIFE

(Check only highest level of significance)		Score (one only)
1) _____	provincially significant	100 points
2) _____	regionally significant (Site Region)	50
3) _____	regionally significant (Site District)	25
3) _____ x _____	locally significant	15
4) _____	little or poor winter cover present	0

Source of information: Milan Vukelich, District Biologist
MNR - Timmins District
(705) 267-7951

4.2.3 WATERFOWL STAGING AND/OR MOULTING

(Circle only highest level of significance for both staging and moulting)

Level of Significance	Staging	Moulting
National Significance	150 points	150
Provincial Significance	100	100
Regional Significance (Site Region)	50 x	50
Known to occur	15	15 x
Not possible	0	0

Source of information: John Boos - Ducks Unlimited

SCORE FOR WATERFOWL MOULTING AND STAGING (Maximum 300) 65**4.2.4 WATERFOWL BREEDING**

(Check only highest level of significance)

Score

- | | | |
|-------------------|-------------------------------------|------------|
| 1) _____ | Provincial significance | 100 points |
| 2) _____ | Regional significance (Site Region) | 50 |
| 3) <u> x </u> | Habitat suitable | 15 |
| 4) _____ | Habitat not suitable | 0 |
| 5) _____ | Status unknown | |

Source of information: John Boos - Ducks UnlimitedSCORE FOR WATERFOWL BREEDING (Maximum 100) 15**4.2.5 MIGRATORY PASSERINE, SHOREBIRD OR RAPTOR STOPOVER AREA**

(check highest applicable category)

- | | | |
|-------------------|-------------------------------------|------------|
| 1) _____ | Provincial significance | 100 points |
| 2) _____ | Regional significance (Site Region) | 50 |
| 3) <u> x </u> | Generalized significance | 0 |

Source of information: John Boos - Ducks UnlimitedSCORE FOR PASSERINE, SHOREBIRD OR RAPTOR STOPOVER (Maximum 100) = 0

4.2.6 FISH HABITAT

i) **Bottom Type (Portion of the wetland that contains fish habitat only)**
 (estimate % of fish habitat substrate consisting of sand, gravel, and/or rubble):

10 percent

Scoring:

<u>% cover of sand, gravel or rubble</u>	<u>Score</u>
_____ > 60%	10 points
_____ 51-61%	8
_____ 41-50%	6
_____ 31-40%	4
_____ 21-30%	2
<u> x </u> < 20%	0

BOTTOM TYPE SCORE (maximum 10 points) = 0

iv) **Presence of Key Vegetation Groups:**

check all vegetation groups below that are represented in the vegetation community descriptions (ie up to two dominant species for each vegetation form) for those areas of the wetland that contain fisheries habitat:

<u>Group Number</u>	<u>Group Name</u>	<u>Group Represented by a Dominant Species</u>	<u>Score</u>
1	Tallgrass	<u> x </u>	7 points
2	Shortgrass-Sedge	<u> x </u>	14
3	Cattail-Burreed	<u> x </u>	5
4	Arrowhead-Pickerelweed	<u> x </u>	6
5	Duckweed	<u> x </u>	1
6	Smartweed-Waterwillow	<u> x </u>	4
7	Waterlily-Lotus	<u> x </u>	12
8	Waterweed-Watercres	_____	8
9	Ribbongrass	<u> x </u>	12
10	Coontail-Naiad-Watermilfoil	<u> x </u>	16
11	Narrowleaf Pondweed	_____	5
12	Broadleaf Pondweed	<u> x </u>	10

VEGETATION TYPE SCORE (maximum 100 points) = 87

5.0 EXTRA INFORMATION

5.1 PURPLE LOOSESTRIFE

 x Absent/Not seen

 Present (a) One location in wetland
 Two to many locations

 abundance code

 (b) (1) < 20 plants
 (2) 20-99 plants
 (3) 100-999 plants
 (4) >1000 plants

5.2 SEASONALLY FLOODED AREAS

Indicate length of seasonal flooding

check one or more

No seasonal flooding

Ephemeral (less than 2 weeks)

Temporal (2 weeks to 1 month) x

Seasonal (1 to 3 months)

Semi-permanent (>3 months)

5.3 SPECIES OF SPECIAL SIGNIFICANCE

5.3.1 Osprey

 Present and nesting (attach map showing nest site)

 Known to have nested in last 5 yrs.

 Feeding area for Osprey

 x not as above

5.3.2 Common Loon

 Nesting in wetland (attach map showing nest site)

 Feeding at edge of wetland

 x Observed or heard on lake or river adjoining the wetland

 not as above

INVESTIGATORS

AFFILIATION

Barb Riordan

Mattagami Region Conservation Authority

Leanne Beaudin

Ian Currie

DATES WETLAND VISITED

Aug. 6-21 and Sept.15, 1992

DATE THIS EVALUATION COMPLETED: October 16, 1992

ESTIMATED TIME DEVOTED TO COMPLETING THE FIELD SURVEY IN 'PERSON HOURS'

80 hours / person

WEATHER CONDITIONS

i) at time of field work cold, cloudy, drizzle. 3 days of warm, sunny conditions
ii) summer conditions in general cold, cloudy

OTHER POTENTIALLY USEFUL INFORMATION:

SPECIES LIST, ABUNDANCE AND LOCATION

Name of Species

Notes on Abundance and Location

Mammals

beaver (Castor canadensis)

extensive use of wetland by beaver, many beaver houses, dams and trails
1 set of tracks near M8

deer (Odocoileus virginianus)

Birds

double-crested cormorant

2 adults/1 imm. in W1 in August; 5 seen on Porcupine Lake in September

(Phalacrocorax auritus)

common merganser (Mergus merganser)

2 in W1

mallard (Anas platyrhynchos)

several families throughout wetland

blue-winged teal (Anas discors)

several sightings throughout wetland

ruddy duck (Oxyura jamaicensis)

1 female in M8

sora (Porzana carolina)

1 in M8

American bittern

2 in W1 near Hwy. 101 bridge

(Botaurus lentiginosus)

great blue heron (Ardea herodias)

daily sightings of 1 or 2 throughout wetland

belted kingfisher (Megaceryle alcyon)

several sightings in W1 and M8

common loon (Gavia immer)

4 on Porcupine Lake

marsh hawk (Circus cyaneus)

2 sightings in W1

herring gulls (Larus argentatus)

several on Porcupine Lake

VEGETATION

Trees

balsam poplar (Populus balsamifera)

dominant tree species in S1 and S7 (saplings)

trembling aspen (Populus tremuloides)

subdominant in S7 (saplings)

black spruce (Picea mariana)

dominant tree species in S4 and S3

balsam fir (Abies balsamea)

subdominant in S4 and S3

tamarack (Larix laricina)

subdominant in S4

white birch (Betula papyrifera)

subdominant in S7

Tall shrubs

speckled alder (Alnus rugosa)
 red osier dogwood
 (Cornus stolonifera)
 willow (Salix sp.)

dominant tall shrub species in swamps
 abundant along perimeter of marshes
 abundant along shoreline of Porcupine River
 in S7

Low Shrubs

Labrador tea (Ledum groenlandicum)
 leatherleaf (Chamaedaphne calyculata)
 wild raspberry (Rubus strigosus)
 currant (Ribes sp.)

dominant low shrub species in S4, present in S2
 subdominant in S4 and S2
 dominant low shrub species in S2, present in most
 swamps
 several different species present in swamps

Ground Cover

jewelweed (Impatiens capensis)
 tall meadow rue (Thalictrum polygamum)
 strawberry (Fragaria virginiana)
 wild mint (Mentha arvensis)
 twin flower (Linnaea borealis)
 snowberry (Gaultheria hispidula)
 bunchberry (Cornus canadensis)
 yellow clintonia (Clintonia borealis)
 violets (Viola sp. - diff. species)
 lady fern (Athyrium Filix-femina)
 marsh fern (Thelypteris palustris)
 common skullcap
 (Scutellaria epilobiifolia)
 Joe-Pye weed (Eupatorium dubium)
 marsh cinquefoil
 (Potentilla palustris)
 fireweed (Epilobium angustifolium)
 Canada anemone (Anemone canadensis)

abundant throughout wetland

present in S3, S4 and S5

present in M6

present in S9

present in M5

present in S7

Narrow-leaved Emergents

sedges (Carex sp.)
sedges (Cyperus sp.)
reed canarygrass
(Phalaris arundinacea)
Canada bluejoint
(Calamagrostis canadensis)
woodland horsetail (Equisetum sp.)
grasses (several different sp.)
burreed (Sparganium sp.)

dominant form and species in S1, S2, S10 and S11
subdominant species
abundant throughout wetland, dominant narrow-leaved
species in M6, S6, S5, M4, M10
subdominant in S6, M6, S10

dominant narrow-leaved species in S4, subdominant in
S3
subdominant in S8, S1, S3 and S9
dominant narrow-leaved species in M8

Robust Emergents

cattails (Typha sp.)
bulrush (Scirpus sp.)

abundant in marshes, dominant species in S12
dominant robust species in W7, subdominant in M8

Broad-leaved Emergents

water arum (Calla palustris)
arrowhead (Sagittaria sp.)
tick trefoil (Bidens cernua)
mild water pepper
(Polygonum hydropiperoides)

dominant broad-leaved species in M6
subdominant in M6, present in M5
present in M6
dominant broad-leaved species in M3

Floating

bullhead lily (Nuphar variegatum)
floating-leaf pondweed
(Potamogeton natans)
smartweed (Polygonum sp.)

dominant floating species in W11 and M8
present in small quantities in marshes

Submerged

coontail (Ceratophyllum demersum)
muskgrass (Chara sp.)
bladderwort (Utricularia sp.)
moss (Drepanocladus)

abundant in marshes
dominant submerged species in M9
subdominant in M9

white water buttercup (<u>Ranunculus aquatilis</u>)	present in M2 near Hwy. 101 bridge
water milfoil (<u>Myriophyllum</u> sp.)	dominant submerged species in W11 at air base
mare's tail (<u>Hippuris vulgaris</u>)	present in M8 on South Porcupine River
tapegrass (<u>Vallisneria</u> sp.)	present in tributaries of Porcupine and South Porcupine Rivers which flow into Porcupine Lake
mild water pepper (<u>Polygonum hydropiperoides</u>)	subdominant in M8 in Porcupine Lake
water starwort (<u>Callitriche</u> sp.)	subdominant in Porcupine Lake marshes
waterweed (<u>Anacharis</u> sp.)	
stargrass (<u>Heteranthera dubia</u>)	
redhead grass (<u>Potamogeton richardsonii</u>)	
naiad (<u>Najas flexilis</u>)	
sago pondweed (<u>Potamogeton pectinatus</u>)	
slender pondweed (<u>Potamogeton pusillus</u>)	abundant in some marshes
threadleaf pondweed (<u>Potamogeton filiformis</u>)	present in some marshes
horned pondweed (<u>Zannichellia palustris</u>)	dominant submerged species in W7
big sheath pondweed (<u>Potamogeton vaginatus</u>)	
<u>Free Floating</u>	
duckweed (<u>Lemna</u> sp.)	dominant form in W1, M2, M4, M5

APPENDIX II: SCORING SUMMARY

SCORING SUMMARY

1.0 BIOLOGICAL COMPONENT

1.1 Productivity

1.1.1	Growing Degree Days/Soils	<u>8.0</u>
1.1.2	Wetland Class	<u>12.2</u>
1.1.3	Site Type	<u>3.7</u>

Total for Productivity 23.9

1.2 Biodiversity

1.2.1	# Wetland Classes	<u>13.0</u>
1.2.2	Vegetation Communities	<u>24.5</u>
1.2.3	Div. Surrounding Habitat	<u>6.0</u>
1.2.4	Proximity to other Wetlands	<u>8.0</u>
1.2.5	Interspersion	<u>18.0</u>
1.2.6	Open Water Type	<u>30.0</u>

Total for Biodiversity 99.5

1.3 Ecosystem Age 1.8

1.4 Size 40.0

TOTAL SCORE BIOLOGICAL COMPONENT 165.2
(maximum 250 points)

2.0 SOCIAL COMPONENT

2.1 Economically Valuable Products

2.1.1	Wood Products	<u>8</u>
2.1.2	Low Bush Cranberry	<u>0</u>
2.1.3	Wild Rice	<u>0</u>
2.1.4	Commercial Baitfish	<u>12</u>
2.1.5	Furbearers	<u>12</u>

Total Economically Valuable Products 32

2.2 Recreational Activities 45

2.3 Landscape Aesthetics

2.3.1	Distinctness	<u>3</u>
2.3.2	Absence of Human Disturbance	<u>2</u>

Total for Landscape Aesthetics 5

2.4 Education and Public Awareness

2.4.1	Educational Uses	<u>20</u>
2.4.2	Facilities and Programs	<u>0</u>
2.4.3	Research and Studies	<u>5</u>

Total for Education/Public Awareness 25

2.5 Proximity to Areas of Human Settlement 26

2.6 Ownership 5.1

2.7 Size 20

2.8 Aboriginal Values and Cultural Heritage

2.8.1	Aboriginal Values	<u>0</u>
2.8.2	Cultural Heritage	<u>0</u>

Total for Aboriginal Values/Cultural Heritage 0

TOTAL SCORE FOR SOCIAL COMPONENT = 158.1
(maximum 250 points)

3.0 HYDROLOGICAL COMPONENT

3.1 Flood Attenuation 35.3

3.2 Ground Water Recharge

3.2.1 Site Type 4.03

3.2.2 Soils 5.0

Total for Groundwater Recharge 9.03

3.3 Downstream Water Quality Improvement

3.3.1 Watershed Improvement Factor 26.2

3.3.2 Adjacent and Watershed Land Use 34.0

3.3.3 Vegetation Form 7.5

Total for Downstream WQI 67.7

3.4 Carbon Sink 2.0

3.5 Shoreline Erosion Control 15.0

3.6 Groundwater Discharge 55

TOTAL SCORE HYDROLOGICAL COMPONENT = 184
(maximum 250 points)

4.0 SPECIAL FEATURES COMPONENT

4.1 Rarity

4.1.1	Wetlands	<u>40</u>
4.1.2	Species	
4.1.2.1	Endangered - breeding	<u>0</u>
4.1.2.2	Endangered - feeding/mig.	<u>0</u>
4.1.2.3	Prov. Significant Fauna	<u>80</u>
4.1.2.4	Prov. Significant Flora	<u>0</u>
4.1.2.5	Regionally Significant Species	
	Site Region	<u>40</u>
	Site District	<u>0</u>
4.1.2.6	Black Duck	<u>15</u>
Total Score Rarity		<u>135</u>

4.2 Significant Features and/or Wildlife Habitat

4.2.1	Colonial Waterbirds	<u>15</u>
4.2.2	Winter Cover for Wildlife	<u>15</u>
4.2.3	Waterfowl Staging/Moulting	<u>65</u>
4.2.4	Waterfowl Breeding	<u>15</u>
4.2.5	Migratory Stopover Area	<u>0</u>
Total Score of Sign. Features etc.		<u>110</u>

4.3 Fish Habitat

4.3.1	Habitat Assessment	<u>87</u>
4.3.2	Presence of Fish	<u>50</u>
Total Score for Fish Habitat		<u>137</u>

TOTAL SCORE SPECIAL FEATURES COMPONENT = 250
(maximum score 250 points)

SCORING SUMMARY

1.0	BIOLOGICAL COMPONENT	<u>165.2</u>
2.0	SOCIAL COMPONENT	<u>158.1</u>
3.0	HYDROLOGICAL COMPONENT	<u>184.0</u>
4.0	SPECIAL FEATURES COMPONENT	<u>250</u>
	TOTAL SCORE	<u>757.3</u>

(maximum score 1000 points)

WETLAND CLASS 1

APPENDIX III

LIST OF FIELD GUIDES AND MANUALS USED IN WETLAND EVALUATION

- Bull, John and John Farrand Jr. The Audubon Society Field Guide to American Birds. Alfred A. Knopf (New York: 1977).
- Cadman, M.D., P.F.J. Eagles and F.M. Helleiner, Atlas of the Breeding Birds of Ontario. University of Waterloo Press (Waterloo: 1987).
- Fessett, Norman C. A Manual of Aquatic Plants. University of Wisconsin Press (Madison: 1972).
- Jones, Keith A. Field Guide to Forest Ecosystem Classification for the Claybelt Site Region 3. Ministry of Natural Resources: 1983.
- Ministry of Natural Resources, Northern Ontario Wetland Evaluation. (Draft: August 1992).
- Peterson, Roger Tory, A Field Guide to the Birds. Houghton Mifflin Company (Boston: 1980).
- Peterson, Roger Tory and Margaret McKenny, A Field Guide to Wildflowers. Houghton Mifflin Company (Boston: 1968).
- Soper, James H. Shrubs of Ontario. The Royal Ontario Museum (Toronto: 1982).