



Treasury Metals
Revised EIS Report
Goliath Gold Project
August 2017



APPENDIX S

WETLANDS



NOTE TO READER APPENDIX S

In April 2015, Treasury Metals submitted an Environmental Impact Statement (EIS) for the proposed Goliath Gold Project (the Project) to the Canadian Environmental Assessment Agency (the Agency) for consideration under the Canadian Environmental Assessment Act (CEAA), 2012. The Agency reviewed the submission and informed Treasury Metals that the requirements of the EIS Guidelines for the Project were met and that the Agency would begin its technical review of the submission. In June 2015, the Agency issued a series of information requests to Treasury Metals regarding the EIS and supporting appendices (referred to herein as the Round 1 information requests). The Round 1 information requests included questions from the Agency, other federal and provincial reviewers, First Nations and other Aboriginal peoples, as well as interested stakeholders. As part of the Round 1 information request process, the Agency requested that Treasury Metals consolidate the responses to the information requests into a revised EIS for the Project.

Appendix S to the original EIS (Wetlands) presented baseline wetlands data collected in 2011 and 2012 by DST. Since submission of the original EIS, Treasury Metals has been refining their understanding of wetlands in the area surrounding the Project, and have commissioned additional baseline field data collection. As part of the work to respond to the Round 1 information requests, Treasury Metals has consolidated the available wetlands baseline information that have been relied on in assessing the effects of the Project on wetlands (Section 6.15 of the revised EIS) into a single document entitled Summary Wetlands Baseline (2016), which has been included as Appendix S to the revised EIS. Appendix S (Summary Wetlands Baseline Study (2016)) to the revised EIS replaces Appendix S to the original EIS. The information presented in this appendix was used to describe baseline wetlands conditions (Section 5.9.3 of the revised EIS) and in the assessment of effects of the Project on wetlands and vegetation (Section 6.15 of the revised EIS).

As part of the process to revise the EIS, Treasury Metals has undertaken a review of the status for the various appendices. The status of each appendix to the revised EIS has been classified as one of the following:

- **Unchanged:** The appendix remains unchanged from the original EIS, and has been re-issued as part revised EIS.
- **Modified:** The appendix remains relatively unchanged from the original EIS, and has been re-issued with relevant clarification.
- **Re-written:** The appendix has been substantially changed from the original EIS. A re-written appendix has been issued as part of the revised EIS.
- **Discarded:** The appendix is no longer required to support the EIS. The information in the original appendix has been replaced by information provided in a new appendix prepared to support the revised EIS.
- **New:** This is a new appendix prepared to support the revised EIS.



The following table provides a listing of the appendices to the revised EIS, along with a listing of the status of each appendix and their description.

List of Appendices to the Revised EIS		
Appendix	Status	Description
Appendix A	Modified	Table of Concordance
Appendix B	Unchanged	Optimization Study
Appendix C	Unchanged	Mining Study
Appendix D	Re-written	Tailings Storage Facility
Appendix E	Unchanged	Traffic Study
Appendix F	Re-written	Water Management Plan
Appendix G	Discarded	Environmental Baseline
Appendix H	Unchanged	Acoustic Environment Study
Appendix I	Unchanged	Light Environment Study
Appendix J	Unchanged	Air Quality Study
Appendix K	Unchanged	Geochemistry
Appendix L	Discarded	Geochemical Modelling
Appendix M	Unchanged	Hydrogeology
Appendix N	Unchanged	Surface Hydrology
Appendix O	Discarded	Hydrologic Modeling
Appendix P	Unchanged	Aquatics DST
Appendix Q	Re-written	Fisheries and Habitat
Appendix R	Re-written	Terrestrial
Appendix S	Re-written	Wetlands
Appendix T	Unchanged	Socio-Economic
Appendix U	Unchanged	Heritage Resources
Appendix V	Unchanged	Public Engagement
Appendix W	Unchanged	Screening Level Risk Assessment
Appendix X	Re-written	Alternatives Assessment Matrix
Appendix Y	Unchanged	EIS Guidelines
Appendix Z	Unchanged	TML Corporate Policies
Appendix AA	Modified	List of Mineral Claims
Appendix BB	Unchanged	Preliminary Economic Assessment
Appendix CC	Unchanged	Mining, Dynamic And Dependable For Ontario's Future
Appendix DD	Re-written	Aboriginal Engagement Report
Appendix EE	Unchanged	Country Foods Assessment
Appendix FF	Unchanged	Photo Record Of The Goliath Gold Project
Appendix GG	Modified	TSF Failure Modelling
Appendix HH	Unchanged	Failure Modes And Effects Analysis
Appendix II	Unchanged	Draft Fisheries Compensation Strategy and Plans
Appendix JJ	New	Water Report

Wetland Baseline Study (2016), Goliath Gold Project



Prepared for:
Treasury Metals Inc.
130 King Street West, Suit 3680
Toronto, ON, Canada, M5X 1B1

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349 Mooney Avenue
Thunder Bay, Ontario
Canada P7B 5L5
Business: (807) 345-5445
www.kbmrg.com

EXECUTIVE SUMMARY

Treasury Metals Inc. has continued its environmental baseline evaluation efforts at the Goliath Gold project in northwestern Ontario since 2010. Treasury Metals Inc. current exploration and drilling program has been principally focused on targets located in the northeast and east of the Goliath Gold deposit, within its >49 km² property block. Baseline studies are completed to gain an understanding of the current natural environment of the site, support mine development decisions, management plans, on-going monitoring, and mine closure plans.

The project is expected to require the completion of federal and provincial environmental assessments and permits prior to development. To support ongoing drilling activities and project permitting, Treasury Metals Inc. retained DST Consulting Engineers Inc. (DST) in 2012 to gather environmental baseline data and submit environmental reports.

These 2012 baseline studies included wetland surveys located within the Project area, with emphasis placed on those wetlands that are located in areas where there is proposed mining infrastructure development. In 2016, at the request of regulators, KBM Resources Group (KBM) undertook additional wetland baseline studies to supplement the 2012 data. Specifically, KBM conducted additional (summer) sampling of the 2012 wetlands, added two new wetland sites, and compiled data for Lola Lake Provincial Park.

Wetlands were scored according to the Ontario Wetland Evaluation System (OWES). It was determined that none of the wetlands surveyed were considered provincially significant. Swamp wetland types covered the largest area within the study area, followed by fens. No threatened, endangered, or provincially significant species of vegetation were encountered during the field surveys, however, five provincially significant avian species were identified in five of the wetlands assessed in 2013.

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INTRODUCTION

Treasury Metals Inc. (TMI) is a Canadian gold exploration and development company focused on its 100% owned high-grade Goliath Gold Project (the Project), situated in the Kenora/Dryden Mining District of northwestern Ontario. The Project is located adjacent to the village of Wabigoon, Ontario, approximately 20 km east of the city center of Dryden or 330 km west of the city of Thunder Bay (refer to Figure 1.1).

The Project Area consists largely of two historic properties, the “Thunder Lake Property”, previously owned by Teck-Corona and the “Laramide Property”, located partially within both the Hartman and Zealand townships. The properties have a total area of approximately 4,881 ha, comprised of 4,064 ha of 137 unpatented land claims and 19 patented land claims for the remainder. Treasury holds the entire project subject to specific royalties on 13 of the patented land parcels. The site can be readily accessed year-round from Highway 17 and multiple public secondary roads that extend north from the highway, including Anderson Road, Maggrah Road, and Tree Nursery Road.

The Project is expected to require the completion of federal and provincial environmental assessments and permits prior to development. To support ongoing drilling activities and project permitting, TMI retained several consultants to gather baseline data and submit environmental reports summarizing data collection efforts. The consultants included Klohn Crippen Berger (KCB) in 2010/2011, DST Consulting Engineers Inc. (DST) in 2012/2013, and KBM Resources Group (KBM) from 2015 until the present. In 2016, at the request of regulators, KBM undertook additional wetland baseline studies to supplement the 2012 data collected by DST and reported on in 2013. Specifically, KBM conducted additional (summer) sampling of the nine wetlands surveyed by DST in 2012, surveyed two new wetland sites, and compiled all available historical data for Lola Lake Provincial Park. This report presents a summary of all wetland baseline studies conducted between 2012 and 2016.

Wetlands are defined by the Ontario Wetland Evaluation System (OWES) as “lands that are seasonally or permanently flooded by shallow water as well as lands 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 has favoured the dominance of either hydrophytic or water tolerant plants.” For the OWES there are four wetland types that are recognized: bog, fen, swamp and marsh (which includes open water marsh). Any wetland may be comprised of one or more wetland types.

Wetlands areas are unique ecosystems protected indirectly through the Fish and Wildlife Conservation Act, Municipal Act, Endangered Species Act, Lakes and Rivers Improvement Act, Environmental Assessment Act, and the Ontario Water Resources Act. Wetlands are specifically recognized in the Provincial Policy Statement (2005), under Section 3 of the Planning Act, and the Conservation Authorities Act. At the federal government level, the Canada Wildlife Act, Fisheries Act, Migratory Birds Convention Act, Species at Risk Act, and Canadian Environmental Assessment Act provide some protection to wetlands through species and habitat conservation measures.

The purpose of completing the wetland evaluations within the Project area was to acquire baseline data on all wetlands, peatlands, and riparian plant communities, as well as to map and describe wetlands following the OWES. The specific objectives were as follows:

- Characterize all riparian/wetland vegetation communities according to the appropriate classification guides (OWES);
- Describe individual wetland vegetation community distribution, structure, and diversity, and;
- Identify any provincially significant wetlands (PSWs) as scored according to the OWES.

1.1 Study Area

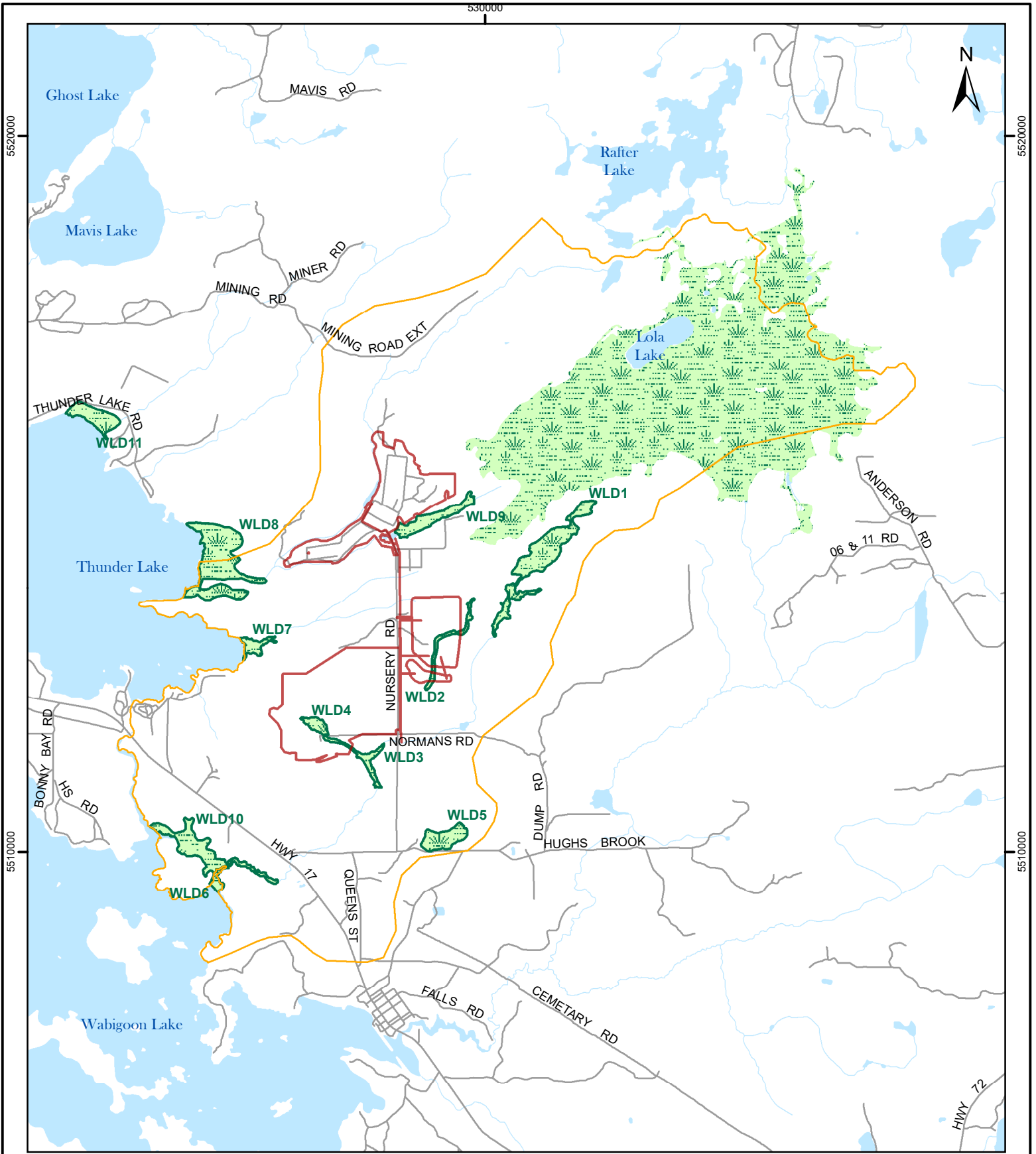
The study area lies within the Dryden and Wabigoon Forest Management Units (FMUs) in northwestern Ontario. The majority of the Project area is within the Dryden FMU, which is 306,669 ha in size according to the Land Information Ontario (LIO) FMU database. Surrounding FMUs include the English River, Lac Seul, Whiskey Jack, Kenora, Crossroute, Trout Lake, and Sapawe FMUs.

These FMUs are within the boundaries of the Lake Wabigoon Ecoregion and are located on the Precambrian Shield. The bedrock in the area is primarily granite and greenstone comprised of metavolcanic and metasedimentary rocks, with granitoid intrusions. The landscape of the Lake Wabigoon Ecoregion is a gently sloping plain of shallow tills over bedrock in conjunction with moraine of varying depths. Sediments consist of sandy-silt, sand and gravel deposits overlain by lacustrine sand, silt and varved clays. Localized pockets of clay and silt are scattered in low-lying areas.

The characteristic forest canopy of the Dryden FMU is dominated by coniferous species including jack pine (*Pinus banksiana*) and black spruce (*Picea mariana*) with a mix of trembling aspen (*Populus tremuloides*) and white birch (*Betula papyrifera*). Eastern white cedar (*Thuja occidentalis*), tamarack (*Larix laricina*), and bur oak (*Quercus macrocarpa*) occur to a limited extent. Pockets of red pine (*Pinus resinosa*) and white pine (*Pinus strobus*) are scattered throughout the landscape. The Dryden FMU is a conifer-dominated forest (53%) with a lesser amount of mixedwood (42%), with only a small portion of the forest being classified as pure hardwood (5%).

Fire is responsible for the greatest degree of natural disturbance in the Dryden FMU. Fires have a significant impact on the age class structure of forests and result in uneven aged canopies. Fire has established nearly all the mature forests in the region. Upland coniferous fires cycles occur on average every 60 years and tend to be stand-replacing. Mixed stand fire cycles tend to occur between 60 and 80 years with variable intensities, and red and white pine stands burn approximately every 150 years.

For the purposes of this assessment, a wetland Local Study Area (LSA) was developed. The LSA was delineated based on the watershed which contained the proposed project footprint and adjacent areas that could be physically impacted by this development. A total of eleven wetlands were identified as having the potential to be impacted by future development and were assessed using the OWES (Figure 1-1).



**Surveyed Wetlands within
Goliath Gold Project
Local Study Area**

Legend

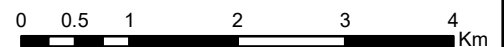
- Road
- Stream
- Development Footprint
- Local Study Area
- Surveyed Wetlands
- Wetlands
- Waterbody



Projection: NAD 1983 UTM Zone 15N

Date created: 2016-12-19

SCALE: 1:70,000



2. METHODS

2.1 Natural Heritage Information Centre (NHIC)

Provincially rare species are considered to be important and worthy of protection. In the OWES, four levels of significance are recognized – (1) endangered/threatened, (2) provincially significant, (3) regionally significant and (4) locally significant. The Natural Heritage Information Centre (NHIC) compiles, maintains and distributes information on natural species, plant communities and areas of conservation concern in Ontario. Global and provincial ranks are used to prioritize conservation and protection efforts focused on globally and provincially rare species. Records were compiled from the NHIC to supplement the field plot data. The NHIC provides a provincial designation prioritizing protection efforts for each species, known as the S-Rank. These ranks have been assigned by the NHIC based on current scientific information, and follow a systematic ranking procedure developed by The Nature Conservancy. Ranks are determined by the estimated number of occurrences, community extent, and community range within the province. The provincial ranks are as follows (NHIC 2009):

- SH - Possibly Extirpated (Historical)—Species or community occurred historically in the province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years. A species or community could receive the SH designation without a 20-40 year delay if the only known occurrences in a province were destroyed or if an extensive search was unsuccessful. The SH rank is reserved for species or communities for which some effort has been made to relocate occurrences;
- S1 Critically Imperiled – Critically imperiled in the province due to extreme rarity, or steep declines;
- S2 Imperiled – Imperiled in the province due to very restricted range, very few populations (≤ 20), or steep declines;
- S3 Vulnerable – Vulnerable in the province due to restricted range, relatively few populations (≤ 80), or steep declines; and,
- S4 Apparently Secure – Uncommon but not rare; may be cause for long-term concern due to declines or other factors.

2.2 Wetland Evaluations

Initially, nine wetlands were evaluated under the OWES during the fall of 2012. As requested by the Canadian Environmental Assessment Agency after the submission of TMI's EIS, additional wetland surveys were completed. The original nine wetlands were revisited in June/July of 2016, as were two additional wetlands.

Prior to field work, Forest Resource Inventory (FRI) data and 1:6,500 Google Earth satellite images of each wetland were examined. A first estimate of wetland boundaries and vegetation community boundaries were interpreted and marked onto each image. All vegetation communities were visited in the field to confirm vegetation community boundaries and to identify vegetation forms and species. Wetland boundaries on satellite images were corrected as required in the field.

Each wetland evaluation included an in-depth information gathering phase which involved contact with the following organizations, agencies, and resources:

- Forest Resource Inventory (FRI) maps;
- LIDAR digital imagery aerial photography;
- Watershed data from Land Information Ontario (LIO);
- Dryden District OMNRFF;
- Ontario Parks
- Natural Resources Values Information System (NRVIS), Land Information Ontario (LIO), Crown Land Use Policy Atlas (CLUPA);
- Wabigoon Lake Ojibway Nation, Eagle Lake First Nation, Lac Seul First Nation, Whitefish Bay First Nation, Wabaskang First Nation, Aboriginal Peoples of Wabigoon, Metis Nation of Ontario, and Grassy Narrows First Nation;
- Natural Heritage Information Centre (NHIC);
- Review of topographic and soil maps; and,
- Previous studies including fish habitat, waterfowl surveys, breeding bird surveys, and vegetation surveys.

Wetlands with an area greater than 0.5 ha, as identified through FRI maps, were considered for evaluation. Data collected during field observations included:

- plant surveys (vegetation forms, common species and identification of rare plants);
- soil/substrate types;
- wetland boundaries;
- delineating wetland types;
- delineating vegetation communities;
- identifying presence of special features, wildlife, furbearers, wild rice etc.; and,
- recording fish habitat information.

Wetlands were selected for evaluation based on the potential for adjacent developments.

2.3 Wetland Scoring

The OWES evaluation procedure involved assigning points to the different features of a wetland, based on four components: social, hydrological, biological and special features. As the score for each component is capped at 250 points, a wetland can score a maximum of 1000 points. Wetlands which achieve a total score of 600 or more points, or score 200 or more points in either the biological or special features components are considered to be provincially significant.

The social component of the OWES considers human uses and the amenities that wetlands provide.

The hydrological component of the OWES had six subcomponents including the ability of the wetland to affect: flood attenuation, groundwater recharge, downstream water quality improvement, carbon sequestration, shoreline erosion control, and groundwater discharge.

The biological component of the OWES focusses on productivity and biodiversity of the wetland. The majority of these scores are calculated through the mapping and delineation of the wetland. The number of vegetation forms and variation within a wetland determine the score for this component.

The special features component of the OWES included the rarity of species within the wetland as well as significant features and habitats.

2.3.1 Plant Survey

Percent cover of vegetation forms within each portion of the wetland were estimated and dominant species were identified. The vegetation forms used in the OWES included;

- Tall shrubs (TS) – woody vegetation 1 to 6 m in height;
- Low shrubs (LS) – woody vegetation less than 1 m in height, with dense foliage and several to many stems;
- Narrow leaved emergents (NE) – erect, rooted, herbaceous monocots which may be temporarily or permanently flooded at the base but are exposed at the upper portion;
- Broad-leaved emergent (BE) – broad-leaved plants <1 m tall;
- Robust emergent (RE) – erect emergent from 1.5 to 3 m in height;
- Floating plants (F) – rooted, vascular hydrophytes with leaves floating horizontally on the water surface;
- Free-floating plants (FF) – non-rooted, vascular hydrophytes floating on the water surface;
- Herbs, ground cover (GC) – non-woody herbaceous plants;
- Unvegetated (U) – open water <2 m deep with no vegetation;
- Submergent Vegetation (SU) – rooted hydrophytes with leaves entirely under the water surface; and,
- Dead Conifers, Dead Hardwoods, Dead Shrubs (DC, DH, DS) – dead standing trees or shrubs.

Plant identification was determined on site using identification field guides including: *Wetland Plants of Ontario*, and *Ecosites of Ontario* (Operational Draft April 20, 2009: Swamp Indicators (OMNRF). Plants that could not be identified in the field were noted, sketched, photographed or sampled and later identified.

The plant survey data was used to determine wetland types and wetland boundaries through the use of indicator species. The number and type of different plant species identified was used to map the wetland boundaries and to calculate each OWES score.

2.3.2 Soil/Substrate Type

For each wetland type that was evaluated, a soil sample was collected through the use of a soil auger (to a maximum depth of 1.2m), to determine:

- organic surface thickness;
- humus form;
- thickness of total organic layers;
- depth to mottles, gleying, and water table; and,
- soil type.

The results of the soil sampling were used in the scoring of the wetland, based on OWES criteria.

2.3.3 Wetland Boundaries

The wetland boundaries were identified and mapped using LIDAR digital imagery. Many wetland boundaries are distinct and evident from visual inspection while others are difficult to delineate due to unclear transition zones. A consistent set of criteria was required to identify the boundaries of wetland areas. This study used upland forest borders, lake borders, beaver-flooded areas, and wetland complexes to delineate the wetland boundaries.

Upland Forest Borders

The outer wetland boundary was determined according to the OWES '50% wetland vegetation rule', where 50% of the plant community consists of upland species. Upland indicator species were used to help make wetland boundary decisions at the time of the site visit. Areas were mapped as a wetland if they contained 50% wetland vegetation species or greater. Where applicable a well-defined tree line was used to indicate a wetland boundary. The principal criterion of the wetland boundary being the species composition of the plant community.

Lake Borders

According to OWES, lakes are defined as "Areas of open water that are greater than 8 ha in size and at some location are greater than 2 m in depth from the normal low water mark." The deep water boundary of wetlands that border lakes, rivers, ponds, or streams was identified at 2 m of depth.

Beaver Flooded Areas

Beaver-flooded areas can be considered wetlands and were therefore evaluated when encountered. The outer wetland boundary was determined using the '50% wetland vegetation rule'.

2.3.4 Delineating Wetland Types

A wetland can be comprised of multiple types of ecosystems including: bogs, fens, swamps, and marshes. The OWES refers to these classifications as wetland types. Wetland types differ in their appearance and species composition and therefore have different rates of productivity. Wetland types are determined based on major plant associations, substrate and hydrological information obtained in the wetland. A wetland may be comprised of one or more wetland types. In wetlands with more than one wetland type, the fractional area of each wetland type is determined. The minimum size of a wetland type for mapping purposes is typically 0.5 ha, exceptions include: mapping at a finer scale of 1:5,000 or 1:2,000, or when highlighting a specialized community.

Swamps are wetlands with at least 25% cover of trees or tall shrubs – in the latter case, the swamps are referred to as thicket swamps or shrub carrs. Standing or gently flowing waters occur seasonally or persistently.

Fens are characterized by layers of peat, and as such, fens are generally referred to as *peatlands*. They are commonly classified as either nutrient-rich (minerotrophic), which are typically fed by groundwater and with a high pH, or nutrient-poor, which receive less groundwater inputs and which have a lower pH (but not as low as in bogs). Live tree cover cannot exceed 25%.

Marshes, in the boreal forest, are often found as a transition between open water and shorelines and contain dominant species such as robust emergents and submerged plant species. Meadow marshes,

which are dominated by emergent vegetation and up to 25% tall shrubs, are semi-permanently or seasonally flooded and occur in floodplains of small streams, beaver meadows, ditches and occasionally isolated basins.

2.3.5 Delineating Vegetation Communities

Vegetation communities are acknowledged as an assemblage of plant species which consist of one or more vegetation forms. Vegetation form is the physical structure of a plant, determined by such features as height, branching pattern and leaf shape. A vegetation community can consist of numerous forms. Vegetation communities provide an important measure of biodiversity. The greater the number of vegetation communities within a wetland type the greater the biodiversity.

To identify vegetation communities in the field, the dominant form must be identified, as well as all other vegetation forms present. Boundaries between vegetation communities exist when the combination of forms is different, or the dominant form is different. To be included as part of a vegetation community description any one vegetation form must be present in approximately 25% of the vegetation community. There are exceptions to this rule when evaluating areas with open water or dead trees.

2.3.6 Special features, wildlife, furbearers, wild rice etc.

The following features were noted in the field observations:

- beaver lodges/dams;
- evidence of furbearer trap lines;
- plant species observations (e.g., wild rice, cranberries); and,
- wildlife observations (e.g., furbearers, waterfowl, baitfish, amphibians).

These attributes are wetland dependant and some are considered to be economically valuable products which contribute to the overall scoring of the wetland.

Observations of rare animals were recorded and scored based on the level of significance as dictated in the 'special features' component of the OWES. The OMNRF Species at Risk in Ontario (SARO) list and species identified as endangered by the national Committee on the Status of Endangered Wildlife in Canada (COSEWIC) list are the only approved lists to be used when scoring threatened and endangered species. Species that are listed as 'Special Concern' in the SARO are considered to be provincially significant in the OWES scoring record. Species ranks are based upon data and recommendations from sources including: the Ontario Rare Breeding Bird Program Database; the Ontario Herpetofaunal Summary Database; the Atlas of the Rare Vascular Plants of Ontario Database; OMNRF's Fish Distribution Database; Lepidoptera/Odonata Databases; COSEWIC status reports; and the Committee on the Status of Species at Risk in Ontario (COSSARO). A species is considered to be provincially significant if it is ranked as S1, S2, S3, SH or if it is tracked by the NHIC. In order to be scored as an endangered or threatened species a species must be recorded as using the wetland in at least two different years within a 10-year period. Special habitat features such as mineral licks were also noted.

2.3.7 Fish Habitat Information

Information on the level of significance (locally, provincially, or regionally) of the spawning and nursery habitat within the wetlands evaluated was accessed through Natural Resources Values Information Systems (NRVIS). A qualitative and quantitative assessment of the fish habitat based on field observations was also completed. Any additional information provided by the OMNRF or previous fisheries studies regarding the significance of spawning and nursery habitat and locally significant areas present within an evaluated wetland was used to score the wetland appropriately.

Fish habitat was classified into three categories: low marsh, high marsh, and swamp. Low marshes contain permanent water and, therefore, provides year-round fish habitat. Such habitats are typically open water marshes containing submergent and/or emergent vegetation. High marshes are seasonally dry and dominated by emergent vegetation, which may be used as spring spawning or nursery habitat. Swamp communities containing fish habitat may be either seasonally flooded or permanently flooded. The presence of fish habitat, rather than actual use, was recorded for all evaluated wetlands if no previously collected data was available.

3. RESULTS

3.1 Lola Lake Provincial Nature Reserve

For the purposes of this report, the Lola Lake wetland complex was not surveyed in the field due to: a) the availability of previous surveys and reports on the wetland; b) the vast size and inaccessibility of large portions of the wetland; and c) the fact that the entire wetland lies upstream of any proposed project components and will have a very small chance of being negatively impacted by the Project after any necessary mitigation measures are in place.

The Lola Lake wetland is a large wetland complex, approximately 1,487 ha in size, surrounding Lola Lake. The Lola Lake Nature Reserve in its entirety is 6,440 ha, and consists of this large wetland, as well as an adjacent area of Earth Science significance that includes various regionally-uncommon elements of the deglacial environment of ~10,000 years ago within a relatively small area and in a relatively undisturbed state.^{1,2,3,4} These elements include a lacustrine plain, a portion of the Hartman end moraine, pillow lavas, massive and varved clay deposits, and wave-cut terraces.

The peatland supports open graminoid bogs, open low-shrub bogs, and treed bog communities, including raised bogs and some basin bogs¹. Black spruce is the dominant tree species, and leatherleaf (*Chamaedaphne calyculata*), sweet gale (*Myrica gale*), and/or bog birch (*Betula pumila* var. *glandulifera*) are the dominant shrub species. Few-seeded sedge (*Carex oligosperma*) dominates the graminoid bogs. Sphagnum mosses are abundant throughout.

¹ Monenco Ontario Ltd. 1986. Peat and Peatland Evaluation of the Dryden-Lac Seul Area. Ontario Geological Survey Open File Report 5544. 226 pp.

² Ontario Ministry of Natural Resources. 1980. Lola Lake Nature Reserve Earth Science Inventory Checklist.

³ Ontario Parks. 2014. Lola Lake Provincial Park (P2591) Management Statement.

⁴ Ontario Ministry of Natural Resources. 1985. Lola Lake Provincial Nature Reserve Interim Management Statement.

The wetland complex also includes sloping, patterned fen formations (string or ladder fens)¹. Larch, birch, speckled alder (*Alnus rugose*), willow (*Salix* spp.), alder-leaved buckthorn (*Rhamnus alnifolia*), tussock bulrush (*Scirpus cespitosus*), and wiregrass (*Carex lasiocarpa*) are the main species in the fens, with relative prevalence depending on the amount of open water and overall saturation of the site. The moss layer thickness varies and is dominated by sphagnum and/or ribbed bog moss (*Aulacomnium palustre*).

On the northern edge of the peatland, there is also an area of shallow marsh along a creek that feeds into Rafter Lake.¹

3.2 Listed and Locally Rare Species

While the 2012 baseline report identified more than a dozen provincially tracked species with occurrence records in the LSA or RSA, an updated search of the Natural Heritage Information Centre (NHIC) database in 2016 resulted in occurrence records for only three plant species within the Dryden District (Table 3-1): heart-leaved Alexander (*Zizipha aptera*), Vasey's rush (*Juncus vaseyi*), and western wheat grass (*Pascopyrum smithii*). These occurrences were all located outside of the LSA and the RSA. The other species listed in 2012 occurred in neighbouring forest management units, even further from the LSA and RSA.

Two additional provincially listed plant species are known to occur within the Kenora region and outside of the RSA: Showy Goldenrod (*Solidago speciosa*) occurs in one single population on an island near Kenora proper, and Western Silvery Aster (*Symphotrichum sericeum*) has only been identified near Lake of the Woods in prairie habitats.

As indicated in the Dryden Forest Management Plan (2010), there are several locally rare tree species in the Dryden FMU, including yellow birch (*Betula alleghaniensis*), burr oak (*Quercus macrocarpa*), and white elm (*Ulmus laevis*). None of these species were observed during 2012 nor 2016 baseline field studies, and burr oak is not typically associated with wetland habitats.

None of the species listed in Table 3-1 were observed during the 2012 or 2016 wetland field studies.

Table 3-1. Listed and locally rare vascular plants with known or potential occurrence within the RSA

Latin name	Common name	Rank / Status	Data type / source / location	Observed during wetland baseline field studies?
<i>Juncus vaseyi</i>	Vasey's rush	S3	NHIC occurrence records in the Dryden and Wabigoon FMUs	N
<i>Zizia aptera</i>	heart-leaved alexanders	S2	NHIC occurrence record in the Dryden FMU	N
<i>Pascopyrum smithii</i>	western wheatgrass	S2	NHIC occurrence records in the Dryden FMU	N
<i>Carex parryana</i>	Parry's sedge	S1	NHIC occurrence records in the Crossroute FMU	N
<i>Carex praticola</i>	Northern meadow sedge	S2	NHIC occurrence records in the Crossroute FMU	N
<i>Crassula aquatic</i>	Water pygmyweed	S2	NHIC occurrence records in the English River and Lac Seul FMUs	N
<i>Hudsonia tomentosa</i>	Beach heather	S3	NHIC occurrence record in the Wabigoon FMU	N
<i>Leucophysalis grandiflora</i>	Large-flowered ground cherry	S3	NHIC occurrence records in the Crossroute FMU	N
<i>Limosell aquatic</i>	Northern mudwort	S2	NHIC occurrence records in the English River FMU	N
<i>Moehringia macrophylla</i>	Large-leaved sandwort	S2	NHIC occurrence records in the Black Spruce, Dog River-Matawin, and Lakehead FMUs	N
<i>Opuntia fragilis</i>	Brittle prickly pear cactus	S3	NHIC occurrence record	N
<i>Polystichum braunii</i>	Braun's holly fern	S3	NHIC occurrence records in the Dog River-Matawin and Lakehead FMUs	N
<i>Potentilla rivalis</i>	Brook cinquefoil	SH	NHIC occurrence records in the Wabigoon and English River FMUs	N
<i>Schoenoplectus heterochaetus</i>	Slender bulrush	S3	NHIC occurrence records in the English River and Kenora FMUs	N
<i>Subularia aquatica</i>	Water awlwort	S3	NHIC occurrence records in the Sapawe FMU	N
<i>Symphotrichum ericoides var. pansum</i>	Prairie white heath aster	S2	NHIC occurrence records in the Crossroute and Kenora FMUs	N

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<i>Caltha natans</i>	Floating marsh marigold	S2	NHIC occurrence records in Crossroute, English River, Lac Seul, Trout Lake, Whiskey Jack, and Kenora FMUs	Potentially identified by KCB during 2011 vegetation baseline field studies (Thunder Creek at Wabigoon Lake)
<i>Solidago speciosa</i>	Showy Goldenrod	S1	Ontario Species at Risk List: Kenora region (known occurrence isolated to one island near Kenora)	N
<i>Symphotrichum sericeum</i>	Western Silvery Aster	S1	Ontario Species at Risk List: Kenora region (known occurrence in Lake of the Woods area); also present in NHIC database in Crossroute and Kenora FMUs	N
<i>Betula alleghaniensis</i>	Yellow birch	locally rare	Dryden Forest Management Plan; species occurs over a range of habitats with some potential to occur within or adjacent to wetlands	N
<i>Quercus macrocarpa</i>	Burr oak	locally rare	Dryden Forest Management Plan; species not typically associated with wetland habitats	N
<i>Ulmus laevis</i>	White elm	Locally rare	Dryden Forest Management Plan; species occurs over a range of habitats with some potential to occur within or adjacent to wetlands	N

3.3 Wetland Evaluations

As per the description in the methodology there are four major components within the data scoring record: biological, social-economic, hydrological, and special features. None of the original nine wetlands surveyed, nor the two additional wetlands surveyed in 2016 scored greater than 600 points overall, and thus none were identified as being provincially significant. All scores by components and subsections are summarized in Table 3.4. The average score across all 11 wetlands evaluated was 362, the maximum score was 448 (WLD8), and the minimum score calculated was 277 (WLD2). Individual wetland maps, wetland species lists and wetland scoring records can be found in Appendix A. Some highlights are provided in the following sections.

3.3.1 Biological Component (productivity, biodiversity, and size)

The 11 wetlands surveyed ranged in size from 5 ha to 54 ha and included swamps, fens, and marshes (Table 3-2). The Swamp wetland type occupied the largest area of all the wetlands evaluated (112 ha), followed by Fen (58 ha), and Marsh (30 ha). All wetlands were either palustrine (inland with no flow or intermittent inflow and either permanent or intermittent outflow), or lacustrine (associated with a lake - Thunder Lake or Wabigoon Lake, in this case). No Isolated ombrotrophic bogs were identified during this monitoring program. A total of 177 plant species were identified across the 11 wetlands surveyed in 2012 and 2016, including several plants identified to genus only (Appendix B).

Table 3- 2 Summary of wetlands surveyed for baseline studies

Wetland	Wetland Size (Ha)	Site Type	Wetland Types (Fractional Area)	Dominant Form(s)	Dominant species
WLD1	43	Palustrine	Fen (0.75), Swamp (0.24), Marsh (0.01)	Tall shrub	<i>Picea mariana</i>
WLD2	7	Palustrine	Swamp (0.8), Fen (0.2)	Tall shrub & Coniferous trees	<i>Alnus incana</i>
WLD3	8	Palustrine	Swamp (0.9), Marsh (0.1)	Tall shrub	<i>Alnus incana</i>
WLD4	5	Palustrine	Marsh (0.7), Swamp (0.3)	Robust emergents	<i>Typha latifolia</i>
WLD5	14	Palustrine	Fen (0.9), Marsh (0.1)	Low shrub	<i>Rhododendron groenlandicum</i> / <i>Chamadaphne calyculata</i>
WLD6	8	Lacustrine	Marsh (1.0)	Robust emergents & Submergent or floating plants	<i>Typha latifolia</i> , <i>Potamogeton spp.</i>
WLD7	6	Lacustrine	Swamp (0.5), Marsh (0.5)	Tall shrub & Narrow-leaved emergents	<i>Alnus incana</i> , <i>Carex utriculata</i>
WLD8	54	Lacustrine	Swamp (0.85), Marsh (0.08), Fen (0.07)	Tall shrub	<i>Alnus incana</i>
WLD9	16	Palustrine	Swamp (0.6), Marsh (0.2), Fen (0.2)	Coniferous trees	<i>Thuja occidentalis</i>
WLD10	24	Lacustrine	Swamp (0.75), Fen (0.20), Marsh (0.05)	Coniferous trees	<i>Picea mariana</i>
WLD11	15	Lacustrine	Swamp (0.75), Marsh (0.25)	Coniferous trees	<i>Picea mariana</i>

3.3.2. Social Component (Economics and Recreation)

None of the wetlands are known to have interpretative signs, trails, or infrastructure such as cabins or blinds for hunting or fishing, however, those wetlands that connected directly to Thunder Lake or Wabigoon Lake where fishing is common, are assumed to have some recreational value.

Wild rice was identified in one wetland, and low bush cranberry was identified in two wetlands.

Wabigoon Lake Ojibway Nation, Eagle Lake First Nation, Lac Seul First Nation, Whitefish Bay First Nation, Wabaskang First Nation, Aboriginal Peoples of Wabigoon, Metis Nation of Ontario, and Grassy Narrows First Nation were consulted to obtain information required for this component. A letter (Appendix C) was sent to each of these communities in 2012 asking for input on any of the wetlands in the area. No response was received, and it was assumed no further responses would be received in 2016. Thus, all wetlands, including the new WLD10 and WLD11, received a score of zero for Indigenous and cultural values. However, Treasury Metals Inc. continues to engage Aboriginal communities and public stakeholders as part of the continued development of the Goliath Gold Project. If wetland areas are

identified that hold aboriginal or public interest, the wetland evaluation will be adjusted to account for these values.

3.3.3 Hydrological Component (Ground water recharge and water quality improvement)

Several of the wetlands in the LSA have high water quality improvement scores because of their location at lake inflows or outflows; those lacustrine sites score low with respect to groundwater recharge because of being located at the bottoms of watersheds. The LSA's palustrine wetlands scored higher with respect to recharge.

3.3.4. Special Features Component

All 11 wetlands were identified as having some fish habitat. There were no occurrences of endangered species within the wetlands assessed, however there were five wetlands in which provincially significant animal species were identified and observed. The wetland identification number and the species are listed in Table 3.3.

Table 3-3. Provincially Significant species identified in 2012 wetland evaluations.

Wetland ID	Scientific Name	Common Name
WLD9	<i>Contopus cooperi</i>	Olive Sided Flycatcher
WLD4, WLD6, WLD7, WLD8	<i>Haliaeetus leucocephalus</i>	Bald Eagle
WLD8	<i>Wilsonia canadensis</i>	Canada Warbler

Table 3-4. Summary of OWES scores for each wetland evaluated

Wetland ID:		WLD1	WLD2	WLD3	WLD4	WLD5	WLD6	WLD7	WLD8	WLD9	WLD10	WLD11
BIOLOGICAL COMPONENT												
Productivity	Growing Degree-Day/soils (max 30)	8	7	10	9	8	8	13	9	8	11	9
	Wetland Type (max 15)	7	8	9	13	7	15	11	8	9	8	10
	Site Type (max 5)	2	2	2	2	2	5	2	2	2	5	3
Biodiversity	Number of Wetland types (max 30)	20	13	13	13	13	9	13	20	20	20	13
	Vegetation Communities (max 45)	5	5	3	5	5	3	5	5	7	7	5
	Diversity of Surrounding Habitat (max 7)	6	7	6	7	7	7	7	7	6	7	7
	Proximity to other wetlands (max 8)	8	8	8	8	8	8	8	8	8	8	8
	Interspersion (max 30)	9	6	9	12	12	15	12	18	6	9	9
	Open water type (max 30)	8	0	14	20	8	30	30	14	14	8	8
	Size (max 50)	10	7	9	17	8	25	25	21	9	8	7
Total Biological Component (not to exceed 250)		83	63	83	106	78	125	126	112	89	91	79
SOCIAL COMPONENT												
Economically Valuable Products	Wood products (max 14)	0	0	0	0	0	0	0	6	4	4	4
	Low Bush Cranberry (max 2)	2	2	0	0	2	0	0	0	2	0	0
	Wild rice (max 10)	0	0	0	0	0	10	0	0	0	0	0
	Commercial fish (max 12)	0	12	12	12	0	12	12	12	12	12	12
	Furbearers (max 12)	3	0	3	3	0	3	6	0	3	0	0
Recreational Activities	Hunting/Fishing/Nature (max 80)	0	0	0	0	0	8	0	0	0	16	36
	Landscape Distinctness (max 3)	3	3	3	3	3	3	3	3	3	3	3
	Absence of human disturbance (max 7)	7	4	4	4	7	4	7	7	4	4	4
	Educational Uses (max 20)	0	0	0	0	0	0	0	0	0	0	0
	Facilities and Programs (8)	0	0	0	0	0	0	0	0	0	0	0
	Research and Studies (max 12)	8	5	5	5	0	5	5	5	5	5	5
	Proximity to human settlement (max 40)	10	10	10	10	10	10	10	10	10	10	8
	Ownership (max 10)	8	5	4	8	4	4	8	8	4	8	8
	Size (max 20)	7	2	2	2	3	5	5	11	7	5	7
Aboriginal and cultural (max 30)	0	0	0	0	0		0	0	0	0	0	
Total Social Component (not to exceed 250)		48	43	43	47	29	64	56	62	54	67	87
HYDROLOGICAL COMPONENT												

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Wetland ID:		WLD1	WLD2	WLD3	WLD4	WLD5	WLD6	WLD7	WLD8	WLD9	WLD10	WLD11
Ground Water Recharge	Flood attenuation (max 100)	59	35	10	14	34	0	0	0	30	0	0
	Site type (20)	20	20	20	20	20	0	0	0	20	0	0
	Hydrological Soils (max 10)	7	7	4	4	4	0	0	0	7	0	0
Downstream Water Quality improvement	Watershed Improvement (max 30)	30	30	30	30	21	30	30	30	30	30	16
	Adjacent Watershed Land Use (max 60)	4	4	4	4	14	29	14	29	4	29	29
	Vegetation form (max 10)	8	8	8	10	8	10	10	8	8	8	8
	Carbon Sink (max 15)	15	9	9	9	0	9	9	9	9	9	9
	Shoreline erosion control (max 15)	0	0	0	0	0	8	15	8	0	8	15
	Groundwater Discharge (max 30)	22	21	18	17	12	22	17	17	21	17	17
Total Hydrological Component (not to exceed 250)		165	134	103	108	113	108	95	101	129	101	94
<u>SPECIAL FEATURES</u>												
Rarity	Wetlands (max 70)	50	30	30	30	40	20	30	50	50	50	30
	Endangered/Threatened spp. Breeding habitat (no max.)	0	0	0	0	0	0	0	0	0	0	0
	Traditional use by endangered/threatened species (no max.)	0	0	0	0	0	0	0	0	0	0	0
	Provincially significant animals (no max.)	0	0	0	50	0	50	50	80	50	0	0
	Provincially significant plants (no max.)	0	0	0	0	0	0	0	0	0	0	0
	Regionally significant spp. (no max)	0	0	0	0	0	0	0	0	0	0	0
	Locally significant spp. (no max.)	0	0	0	0	0	0	0	0	0	0	0
	Species of Species Status (Black Duck) (max 25)	0	0	0	10	0	10	10	10	0	10	10
Significant Features and Habitat	Colonial Waterbirds (max 50)	0	0	0	0	0	0	0	0	0	0	0
	Winter Cover for Wildlife (max 100)	0	0	0	0	0	0	0	0	0	0	0
	Waterfowl Staging/Moulting (max 150)	0	0	0	0	0	0	0	0	0	0	0
	Waterfowl Breeding (max 100)	0	0	0	10	0	10	10	10	0	10	10
	Migratory Passerine, Shorebird or Raptor stopover (max 100)	0	0	0	0	0	0	0	0	0	0	0
	Ungulate habitat (max 100)	0	0	0	0	0	0	0	0	0	20	20
	Fish nursery habitat (max 100)	2	1	4	1	1	7	3	1	1	9	7
	Fish staging/migration habitat present (max 25)	5	0	0	1	0	25	5	5	5	25	25

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Wetland ID:		WLD1	WLD2	WLD3	WLD4	WLD5	WLD6	WLD7	WLD8	WLD9	WLD10	WLD11
	Ecosystem age (max 25)	16	6	30	1	18	0	1	17	6	6	2
	Great lake coastal wetlands (max 75)	0	0	0	0	0	0	0	0	0	0	0
Total Special Features (not to exceed 250)		73	37	74	103	59	122	109	173	112	130	104
TOTAL		369	277	303	364	279	419	386	448	384	392	364

4. CLOSURE

4.1 Summary

- None of the provincially significant species listed in the NHIC database were encountered during the field surveys;
- The swamp wetland type occupied 49.7% of the wetland areas assessed. The dominant vegetation form was tall shrubs;
- Small areas of marsh dominated by emergent vegetation and shrubs are prominent throughout the study area;
- Provincially significant animal species were identified in five of the wetlands assessed in 2012; and
- No Provincially significant wetlands were identified within the study area under the OWES

4.2 Conclusions

No wetlands were identified as being provincially significant by OWES standards and procedures. Wetland files can be amended as new information becomes available. For example, changes to the status of species, confirmation of new species occurrences, wetland boundary modifications, and changes to the social values of the wetland can be updated on any OWES wetland scorecard.

Appendix A. Ontario Wetland Evaluation System (OWES) score sheets

viii) WETLAND SIZE AND BOUNDARIES

a) Single contiguous wetland area: 43.0 hectares

b) Wetland complex comprised of ___ individual wetlands:

Wetland Unit Number (for reference)	Size of each wetland unit
Wetland Unit No. 1	_____ ha
Wetland Unit No. 2	_____ ha
Wetland Unit No. 3	_____ ha
Wetland Unit No. 4	_____ ha
Wetland Unit No. 5	_____ 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

(Attach additional sheets if necessary)

TOTAL WETLAND SIZE _____ ha

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

N/A

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 Fractional Area
_____ <1600	_____ clay/loam
_____ 1600-2000	_____ silt/marl
_____ x 2000-2400	_____ limestone
_____ 2400-2800	_____ sand
_____ 2800-3000	_____ humic/mesic
_____ >3000	_____ 1.0 fibric
	_____ granite

SCORING:

Growing Degree Days	Clay/Loam	Silt/Marl	Lime-stone	Sand	Humic/Mesic	Fibric	Granite
<1600	12	11	9	7	7	6	4
1600-2000	15	13	11	9	8	7	5
2000-2400	18	15*0.01	13	11	9*0.24	8*0.75	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

(maximum score 30; if wetland contains more than one soil type, evaluate based on the fractional area)

Steps required for evaluation: (maximum score 30 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.

Growing Degree Days/Soils Score (maximum 30 points): 8

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1.1.2 WETLAND TYPE (Fractional Area = area of wetland type/ total wetland area)

Fractional Area Score

Bog	_____	x 3 =	_____
Fen	<u>0.75</u>	x 6 =	<u>4.44</u>
Swamp	<u>0.24</u>	x 8 =	<u>1.92</u>
Marsh	<u>0.01</u>	x 15 =	<u>0.15</u>

Wetland Type Score (maximum 15 points): 7

1.1.3 SITE TYPE (Fractional Area = area of site type/ total wetland area)

Fractional Area Score

Isolated	_____	x 1 =	_____
Palustrine (permanent or Intermittent flow)	<u>1.0</u>	x 2 =	<u>2</u>
Riverine	_____	x 4 =	_____
Riverine (at rivermouth)	_____	x 5 =	_____
Lacustrine (at rivermouth)	_____	x 5 =	_____
Lacustrine (on enclosed bay, with barrier beach)	_____	x 3 =	_____
Lacustrine (exposed to lake)	_____	x 2 =	_____

Site Type Score (maximum 5 points): 2

1.2 BIODIVERSITY

1.2.1 NUMBER OF WETLAND TYPES

(Check one)	Score (Choose one only)
_____ one	9 points
_____ two	13
_____ x three	20
_____ four	30

Number of Wetland Types Score (Maximum 30 points): 20

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1.2.2 VEGETATION COMMUNITIES

Attach a separate sheet listing community (map) codes, vegetation forms and dominant species. Use the form on the following page to record percent area by dominant vegetation form. This information will be used in other parts of the evaluation.

Communities should be grouped by number of forms. For example, 2 form communities might appear as follows:

2 forms

<u>Code</u>	<u>Forms</u>	<u>Dominant Species</u>
M6	re, ff	re, <i>Typha latifolia</i> ; ff, <i>Lemna minor</i> , <i>Wolffia</i>
S1	ts, gc	ts, <i>Salix discolor</i> ; gc, <i>Impatiens capensis</i> , <i>Thelypteris palustris</i>

Note that the dominant species for each form are separated by a semicolon. The dominant species (maximum of 2) within a form are separated by commas.

Scoring:

Total # of communities with 1-3 forms	Total # of communities with 4-5 forms	Total # of communities with 6 or more forms
1 = 1.5 points	1 = 2 points	1 = 3 points
2 = 2.5	2 = 3.5	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	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
+.5 each additional community	+.5 each additional community	+1 each additional community

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

$$6 + 13.5 + 15 = 34.5 = 35 \text{ points}$$

Vegetation Communities Score (maximum 45 points): 5

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Wetland Name: WLD1

Wetland Size (ha): 43.0

Vegetation Form % area in which form is dominant

h —

c —

dh —

dc —

ts 0.99

ls —

ds —

gc —

m —

ne 0.01

be —

re —

ff —

f —

su —

u (unvegetated) —

Total = **100%**

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1.2.3 DIVERSITY OF SURROUNDING HABITAT

(Check all appropriate items)

<input type="checkbox"/>	recent burn (< 5yr)
<input checked="" type="checkbox"/>	abandoned agricultural land
<input checked="" type="checkbox"/>	utility corridor
<input checked="" type="checkbox"/>	deciduous forest
<input checked="" type="checkbox"/>	recent cutover or clearcut (<5 yr)
<input checked="" type="checkbox"/>	coniferous forest
<input checked="" type="checkbox"/>	mixed forest (at least 25% conifer and 75% deciduous or vice versa)
<input type="checkbox"/>	crops
<input type="checkbox"/>	abandoned pits or quarries
<input type="checkbox"/>	pasture
<input type="checkbox"/>	ravine
<input type="checkbox"/>	fence rows
<input type="checkbox"/>	open lake or deep river
<input type="checkbox"/>	creek floodplain
<input type="checkbox"/>	rock outcrop

Diversity of Surrounding Habitat Score (1 for each, maximum 7 points): 6

1.2.4 PROXIMITY TO OTHER WETLANDS

(Check first appropriate category only)

Scoring

1) <input checked="" type="checkbox"/>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river within 1.5 km	8 points
2) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
3) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river from 1.5 to 4 km away	5
4) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
5) <input type="checkbox"/>	Within 0.75 km of other wetlands (different dominant wetland type) or open lake or river, but not hydrologically connected by surface water	5
6) <input type="checkbox"/>	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
7) <input type="checkbox"/>	No wetland within 1 km	0

Proximity to other Wetlands Score (Choose one only, maximum 8 points): 8

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1.2.5 INTERSPERSION

Number of Intersections (check one)

- | | | |
|---------------|--------------|----|
| 1) 26 or less | _____ | 3 |
| 2) 27 to 40 | _____ | 6 |
| 3) 41 to 60 | <u> x </u> | 9 |
| 4) 61 to 80 | _____ | 12 |
| 5) 81 to 100 | _____ | 15 |
| 6) 101 to 125 | _____ | 18 |
| 7) 126 to 150 | _____ | 21 |
| 8) 151 to 175 | _____ | 24 |
| 9) 176 to 200 | _____ | 27 |
| 10) >200 | _____ | 30 |

Interspersion Score (Choose one only, maximum 30 points): 9
(46 intersections)

1.2.6 OPEN WATER TYPES

Permanently flooded (Check one)

- | | | |
|------------------|--------------|----|
| 1) No open water | _____ | 0 |
| 2) Type 1 | <u> x </u> | 8 |
| 3) Type 2 | _____ | 8 |
| 4) Type 3 | _____ | 14 |
| 5) Type 4 | _____ | 20 |
| 6) Type 5 | _____ | 30 |
| 7) Type 6 | _____ | 8 |
| 8) Type 7 | _____ | 14 |
| 9) Type 8 | _____ | 3 |

Open Water Score (Choose one only, maximum 30 points): 8

1.3 SIZE

43.0 hectares

Size Score (Biological Component) (maximum 50 points): 10

Table 2. Evaluation Table for Size Score (Biological Component)

Wetland size (ha)	Total Score for Biodiversity Subcomponent									
	<37	37-47	48-60	61-72	73-84	85-96	97-108	109-120	121-132	>132
<20 ha	1	5	7	8	9	17	25	34	43	50
20-40	5	7	8	9	10	19	28	37	46	50
41-60	6	8	9	10	11	21	31	40	49	50
61-80	7	9	10	11	13	23	34	43	50	50
81-100	8	10	11	13	15	25	37	46	50	50
101-120	9	11	13	15	18	28	40	49	50	50
121-140	10	13	15	17	21	31	43	50	50	50
141-160	11	15	17	19	23	34	46	50	50	50
161-180	13	17	19	21	25	37	49	50	50	50
181-200	15	19	21	23	28	40	50	50	50	50
201-400	17	21	23	25	31	43	50	50	50	50
401-600	19	23	25	28	34	46	50	50	50	50
601-800	21	25	28	31	37	49	50	50	50	50
801-1000	23	28	31	34	40	50	50	50	50	50
1001-1200	25	31	34	37	43	50	50	50	50	50
1201-1400	28	34	37	40	46	50	50	50	50	50
1401-1600	31	37	40	43	49	50	50	50	50	50
1601-1800	34	40	43	46	50	50	50	50	50	50
1801-2000	37	43	47	49	50	50	50	50	50	50
>2000	40	46	50	50	50	50	50	50	50	50

2.0 SOCIAL COMPONENT

2.1 ECONOMICALLY VALUABLE PRODUCTS

2.1.1 WOOD PRODUCTS

Area of wetland forested (ha); not wetland size

1) <5 ha	<u> x </u>	0
2) 5 – 25 ha	<u> </u>	4
3) 26 – 50 ha	<u> </u>	6
4) 51 – 100 ha	<u> </u>	8
5) 101-200 ha	<u> </u>	11
6) > 200 ha	<u> </u>	14

Source of information: Forest Resource Inventory (FRI – GIS data)

Wood Products Score (Score one only, maximum 14 points): 0

2.1.2 LOWBUSH CRANBERRY

1) Present	<u> x </u>	2
2) Absent	<u> </u>	0

Source of information: Field observation

Lowbush Cranberry Score (maximum 2 points): 2

2.1.3 WILD RICE

1) Present	<u> </u>	10
2) Absent	<u> x </u>	0

Source of information: Field observation

Wild Rice Score (maximum 10 points): 0

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

- | | | |
|------------|--------------|----|
| 1) Present | _____ | 12 |
| 2) Absent | <u> x </u> | 0 |

Source of information: Field observation

Commercial Fish Score (maximum 12 points): 0

2.1.5 FURBEARERS

(Consult Appendix 9)

	<u>Name of furbearer</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	<u>Pine Marten</u>	<u><i>Martes americana</i></u>	<u>field observation</u>
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Scoring: 3 points for each species, maximum 12

Furbearer Score (maximum 12 points): 3

2.2 RECREATIONAL ACTIVITIES

Type of Wetland-Associated Use			
Intensity of Use	Hunting	Nature Enjoyment/ Ecosystem Study	Fishing
High	40 points	40 points	40 points
Moderate	20	20	20
Low	8	8	8
Not Possible	0	0	0

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

Sources of information:

- Hunting: Field observation
- Nature: Field observation
- Fishing: Field observation

Recreational Activities Score (maximum 80 points): 0

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2.4.2 FACILITIES AND PROGRAMS

1) Staffed interpretation centre with shelters, trails, literature	_____	8
2) No interpretation centre or staff, but a system of self-guided trails and observation points, or brochures available	_____	4
3) Facilities such as maintained paths (e.g., wood chips) Boardwalks, boat launches, or observation towers	_____	2
4) No facilities or programs	_____ x _____	0

Source of information: _____

Facilities and Programs Score (maximum 8 points): 0

2.4.3 RESEARCH AND STUDIES

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

Attach list of known reports by above categories

- *DST Consulting Engineers Sediment and Benthics and Aquatic Baseline Environmental Reports 2014 (2012 data), Reference Number OE-KN-018101*

Research and Studies Score (Score is cumulative, maximum 12 points): 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	16
0.5 to 10 km from settlement	26	16	10
10 to 60 km from settlement	12	8	4
>60 km from settlement	5	2	0
>100 km from settlement	0	0	0

Name of settlement: Wabigoon Lake Ojibway Nation (WLON)

Proximity to Human Settlement Score (maximum 40 points): 10

2.6 OWNERSHIP (FA = fractional area)

Wetland in public or private ownership, held under contract or in trust for wetland protection

Fractional Area Score

_____ x 10 = _____

Wetland in public ownership, not as above

1.0 x 8 = 8

Wetland in private ownership, not as above

_____ x 4 = _____

Source of information: Treasury Resources Inc.

Ownership Score (maximum 10 points): 8

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2.7 SIZE (See size table -- Social Component)

43.0 hectares

Size Score (Social Component) (maximum 20 points): 7

Table 3. Evaluation Table for Size Score (Social Component)

Wetland size (ha)	Total for Size Dependent Score									
	<30	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
2-4	1	2	4	8	12	13	14	14	15	16
5-8	2	2	5	9	13	14	15	15	16	16
9-12	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	18	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	19	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	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.

2.8.1 ABORIGINAL VALUES

Full documentation of sources must be attached to the data record.

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

2.8.2 CULTURAL HERITAGE

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

Aboriginal Values/Cultural Heritage Score (maximum 30 points): 0

3.0 HYDROLOGICAL COMPONENT

3.1 FLOOD ATTENUATION

If the wetland is a complex including isolated wetlands, apportion the 100 points according to area. For example, if 10 ha of a 100 ha complex is isolated, the isolated portion receives the maximum proportional score of 10. The remainder of the wetland is then evaluated out of the remaining 90 points.

Step 1.

If wetland is entirely Isolated, go directly to Step 5.

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 5.

All other wetlands, go through steps 2, 3, 4 and 5.

Step 2.

Determination of Upstream Detention Factor (DF)

(a)	Wetland area (ha)	<u>43.0</u>
(b)	Total area (ha) of <u>upstream</u> detention areas (include the wetland itself)	<u>56.9</u>
(c)	Ratio of (a):(b)	<u>0.8</u>
(d)	Upstream detention factor: (c) x 2 = (Maximum allowable factor = 1)	<u>1.6</u> (1)

Step 3.

Determination of Peak Flow Attenuation Factor (AF)

(a)	Wetland area (ha)	<u>43.0</u>
(b)	Size of catchment basin (ha) <u>upstream</u> of wetland (include wetland itself in catchment area)	<u>1511.6</u>
(c)	Ratio of (a):(b)	<u>0.03</u>
(d)	Wetland attenuation factor: (c) x 10 = (Maximum allowable factor = 1)	<u>0.3</u>

Step 4.

Determination of Wetland Surface Form Factor (FF)

From the list below, select the surface form which best describes the wetland.

	Factor	
Flooded with little or no aquatic vegetation	_____	0
Flooded but with submergent, emergent or floating vegetation	_____	0.2
Flat (lawn) vegetation (typical of fens)	<u> x </u>	0.5
Hummock-depression microtopography	_____	0.7
Patterned (e.g., string bog, ribbed fen)	_____	1.0

Surface Form Factor (FF) 0.5

(Maximum allowable factor = 1)

Step 5. Calculation of Final Score

1. Wetland is entirely Isolated 100 points
2. Wetland is lacustrine and the ratio of wetland area:lake area is <0.1 0 points
3. Wetland is riverine along the St. Mary's River 0 points
4. For all other wetlands*, calculate as follows:

(a)	Upstream Detention Factor (DF) (Step2)	1
(b)	Wetland Attenuation Factor (AF) (Step 3)	0.3
(c)	Surface Form Factor (FF) (Step 4)	0.5

$$[(DF + AF + FF)/3] \times 100^* \quad \underline{59}$$

* Unless wetland is a complex including isolated portions -- see above

Total Flood Attenuation Score (maximum 100 points): 59

3.2 GROUND WATER RECHARGE

3.2.1 SITE TYPE

- 1) Wetland > 50% lacustrine (by area) or located on the St. Mary's River Score = 0
- 2) Wetland not as above. Calculate final score as follows:
(FA = area of site type/total area of wetland)

<u>1.0</u>	FA of isolated or palustrine wetland	x 20 = <u>20</u>
_____	FA of riverine wetland	x 5 = _____
_____	FA of lacustrine wetland (wetland <50% lacustrine)	x 0 = _____

Site Type Score: (maximum 20 points): 20

3.2.2 SOILS

EVALUATION:

Dominant Wetland Type	Sand, loam, gravel, till	Clay, bedrock
Lacustrine or on St. Mary's River	0	0
Isolated	10	5
Palustrine	7	4
Riverine (not on St. Mary's River)	5	2

Hydrological Soil Class Score (maximum 10 points): 7

3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

3.3.1 WATERSHED IMPROVEMENT FACTOR

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

<u>Site Type</u>	<u>Improvement Factor (IF)</u>
Isolated	FA _____ x 0.5 = _____
Riverine	FA _____ x 1.0 = _____
Palustrine with no inflow	FA _____ x 0.7 = _____
Palustrine with inflows	FA <u>1.0</u> x 1.0 = <u>1.0</u>
Lacustrine on lake shoreline	FA _____ x 0.2 = _____
Lacustrine at lake inflow or outflow	FA _____ x 1.0 = _____

Watershed Improvement Score (IF x 30) (maximum = 30): 30

3.3.2 ADJACENT AND WATERSHED LAND USE EVALUATION:

Step 1. Determination of Maximum Initial Score

_____ Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)

_____ x _____ All other wetlands (Go through steps 2, 3, 4, and 5b)

Step 2. Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in an extensive manner.

Choose one		
> 50% of catchment basin	_____	20
20-50% of catchment basin	_____	14
< 20% of catchment basin	_____ x _____	4

Score for BLU: 4

Step 3. Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

Choose the highest only

Major corridor ¹	_____	15
Secondary corridor	_____	11
Tertiary corridor	_____	6
Temporary or abandoned	_____	3
None	_____ x _____	0

Score for LUU: 0

¹ Major, secondary and tertiary roads are those that are indicated as such on the provincial highways map. Major hydro corridors are trunk lines coming directly from a generating station. Major pipelines are trans-continental lines. Secondary corridors are regional distribution lines (i.e. multi-cable hydro corridors not emanating directly from a generating station or regional gas distribution lines). Tertiary corridors are single hydro lines or local gas distribution lines (i.e. to domestic users).

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Step 4. Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits use for local road construction), etc. Score as 'present' only if a point source land use is located less than 1 km upstream from the wetland.

a) Present	_____	15
b) Absent	_____x_____	0

Score for PS: 0

Step 5. Calculation of total score for Adjacent and Watershed Land Use

	Score
a) Wetland on the Great Lakes or St. Mary's River	0
b) All other wetlands, calculate as follows:	

Final Score BLU + LUU + PS: 4

3.3.3 VEGETATION FORM

Choose the category that best describes the vegetation of the wetland

Trees, shrubs or herbs (h, c, ts, ls, gc)	_____x_____	8
Emergents, submergents (ne, re, be, f, ff, su)	_____	10
Little or no vegetation (u)	_____	0

Dominant Vegetation Form Score (maximum 10 points): 8

3.4 CARBON SINK

Choose the category that best describes the wetland.

1) Wetland a bog or fen with > 50% organic soils	_____x_____	15
2) Wetland has organic soils occupying 10 to 50% of the area (i.e. mainly mineral or undesignated soil, any wetland type)	_____	6
3) Marshes and swamps with >50% organic soil	_____	9
4) Wetland with <10% organic soils	_____	0

Carbon Sink Score (maximum 15 points): 15

3.5 SHORELINE EROSION CONTROL

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.

- Step 1.
- | | |
|---|------------|
| <u> x </u> Wetland entirely isolated or palustrine | Score
0 |
| <u> </u> Any part of the wetland riverine, or lacustrine (proceed to Step 2) | |

Step 2. Choose the one characteristic that best describes the shoreline vegetation.
(See text for the definition of shoreline.)

- | | | |
|----------------------------|---------------|----|
| Trees and shrubs | <u> </u> | 15 |
| Emergent vegetation | <u> </u> | 8 |
| Submergent vegetation | <u> </u> | 6 |
| Other shoreline vegetation | <u> </u> | 3 |
| No vegetation | <u> </u> | 0 |

Shoreline Erosion Control Score (maximum 15 points): 0

3.6 GROUNDWATER DISCHARGE

(Circle the characteristics that best describe the wetland being evaluated and sum the scores.)

Category	Catchment interaction		
Wetland type	Bog = 0	Swamp/Marsh = 2	Fen = 5
Basin topography	Flat/Rolling = 0	Hilly = 2	Major relief break = 5
Wetland area:Upslope catchment area	Large (>50%) = 0	Moderate (6 - 50%) = 2	Small (<5%) = 5
Lagg development	None found = 0	Minor = 2	Extensive = 5
Seeps at wetland edge	None found = 0	1 to 3 seeps = 5	4 or more seeps = 10
Iron precipitates evident at edge	None = 0	1-3 deposits = 2	4 or more deposits = 5
Surface marl deposits	None = 0	1-3 deposits = 2	> 3 = 5
Wetland pH	Low < 4.2 = 0	Moderate 4.2-5.7 = 5	High >5.7 = 10
Catchment soil coverage	Patchy = 0	Thin (<20 cm) = 2	Thick = 5
Catchment soil permeability	Low = 0	Moderate = 2	High = 5

(Scores are cumulative, maximum score 30 points)

Groundwater Discharge Score (maximum 30 points): 22

4.0 SPECIAL FEATURES COMPONENT

4.1 RARITY

4.1.1 WETLANDS

Hills Site Region and Site District (5E only): _____

Wetland type (check one or more)

- Bog
- Fen
- Swamp
- Marsh

Evaluation Table for Scoring Rarity of Wetland Type.

Unit Number	Site Region & District	Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	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
5E-1	Thessalon	10	0	30	20
5E-2	Gore Bay	20	0	20	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tomiko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E-12	Renfrew	0	0	30	10
5-S	Lake of the Woods	10	10	20	10

Rarity of Wetland Type Score (Maximum 70 points): 50

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4.1.2 SPECIES

4.1.2.1 BREEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

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

Attach documentation

Scoring

For one species	250
For each additional species	250

(Score is cumulative, no maximum score)

Breeding Habitat for Endangered or Threatened Species Score (no maximum): 0

4.1.2.2 TRADITIONAL MIGRATION OR FEEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach documentation

Scoring

For one species	150 points
For each additional species	75

(Score is cumulative, no maximum score)

Traditional Habitat for Endangered or Threatened Species Score (no maximum): 0

4.1.2.3 PROVINCIALY SIGNIFICANT ANIMAL SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant animal species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.) (no maximum score)

Provincially Significant Animal Species Score (no maximum): 0

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4.1.2.4 PROVINCIALY SIGNIFICANT PLANT SPECIES

(Scientific names must be recorded)

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant plant species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species Score (no maximum): 0

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4.1.2.5 REGIONALLY SIGNIFICANT SPECIES (SITE REGION)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

SIGNIFICANT IN SITE REGION:

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary; Attach documentation

** Score only if there is an approved list.

No. of species significant in Site Region

One species	=	20	6 species	=	55
2 species	=	30	7 species	=	58
3 species	=	40	8 species	=	61
4 species	=	45	9 species	=	64
5 species	=	50	10 species	=	67

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

Significant Species (Site Region) Score (no maximum): 0

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4.2.1.6 LOCALLY SIGNIFICANT SPECIES (SITE DISTRICT)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Source of information: _____

Attach separate list if necessary; Attach documentation.

Scoring

No. of species significant in Site District

One species	=	10	6 species	=	41
2 species	=	17	7 species	=	43
3 species	=	24	8 species	=	45
4 species	=	31	9 species	=	47
5 species	=	38	10 species	=	49

For each significant species over 10 in the wetland, add 1 point.

Locally Significant Species (Site District) Score (no maximum): 0

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4.1.2.7 SPECIES OF SPECIAL STATUS

Black Duck

Suitable breeding habitat present and within assessment range (Figure 17)

Assessment Category		
40 - 80 Indicated Pairs/100 km sq	_____	25
20 - 40 Indicated Pairs/100 km sq	_____	20
10 - 20 Indicated Pairs/100 km sq	_____	15
5 - 10 Indicated Pairs/100 km sq	_____	10
1 - 5 Indicated Pairs/100 km sq	_____	5
Habitat not suitable	<u> x </u>	0
Out of assessment range	_____	0

Black Duck Score (maximum 25 points): 0

4.2 SIGNIFICANT FEATURES AND HABITATS

4.2.1 NESTING OF COLONIAL WATERBIRDS

Status	Name of species	Source of information	Score
Currently nesting			50 points
Known to have nested within past 5 years			25
Active feeding area (great blue heron excluded)			15
None known			0

Attach documentation (nest locations, etc., if known)

Colonial Waterbirds Score (maximum 50 points): 0

4.2.2. WINTER COVER FOR WILDLIFE

(Check only highest level of significance)		<u>Score</u> (one only)
1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	25
3) Locally significant	_____	10
4) Little or poor winter cover present	<u> x </u>	0

Source of information: _____

Winter cover for Wildlife Score (maximum 100 points): 0

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4.2.3 WATERFOWL STAGING AND/OR MOULTING

(Check only highest level of significance for both staging and moulting; score is cumulative across columns, maximum 150 points)

	<u>Staging</u>	Score (one only)	<u>Moulting</u>	Score (one only)
1) Nationally significant	_____	150	_____	150
2) Provincially significant	_____	100	_____	100
3) Regionally significant	_____	50	_____	50
4) Known to occur	_____	10	_____	10
5) Not possible	_____	0	_____	0
6) Not known	<u> x </u>	0	_____	0

Source of information: _____

Waterfowl Moulting and Staging Score (maximum 150 points): 0

4.2.4 WATERFOWL BREEDING

(Check only highest level of significance)

1) Provincially significant	_____	100
2) Regionally significant	_____	50
3) Habitat suitable	_____	10
4) Habitat not suitable	<u> x </u>	0

Source of information: _____

Waterfowl Breeding Score (maximum 100 points): 0

4.2.5 MIGRATORY PASSERINE, SHOREBIRD OR RAPTOR STOPOVER AREA

(check highest applicable category)

1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	10
3) Not significant	<u> x </u>	0

Source of information: _____

Passerine, Shorebird or Raptor Stopover Score (maximum 100 points): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.2.6 UNGULATE HABITAT

EVALUATION:

Score (1) + (2) + <u>one</u> of (3) to (6)		
(1) Ungulate summer cover	_____	15
(2) Mineral licks	_____	50
(3) Moose aquatic feeding area Class 1	<u> x </u>	0
(4) Moose aquatic feeding area Class 2	_____	10
(5) Moose aquatic feeding area Class 3	_____	20
(6) Moose aquatic feeding area Class 4	_____	35

(Score is cumulative for a maximum possible score of 100)

Ungulate Habitat Score (maximum 100 points): 0

4.2.7 FISH HABITAT

4.2.7.1 Spawning and Nursery Habitat

Table 5. Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5 - 4.9	0.2
5.0 - 9.9	0.4
10.0 - 14.9	0.6
15.0 - 19.9	0.8
20.0+ ha	1.0

Step 1:

_____ Fish habitat is not present within the wetland (Score = 0)

 x Fish habitat is present within the wetland (Go to Step 2)

Step 2: Choose only one option

1) _____ Significance of the spawning and nursery habitat within the wetland is known
(Go to Step3)

2) x **Significance of the spawning and nursery habitat within the wetland is not known (Go through Steps 4, 5, 6, and 7)**

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Step 3: Select the highest appropriate category below, attach documentation:

- 1) Significant in Site Region _____ 100
- 2) Significant in Site District _____ 50
- 3) Locally Significant Habitat (5.0+ ha) _____ 25
- 3) Locally Significant Habitat (<5.0 ha) _____ 15

Score for Spawning and Nursery Habitat (maximum score 100 points): 0

Step 4: Proceed to Steps 4 to 7 only if Step 3 was not scored

(**Low Marsh:** marsh area from the existing water line out to the outer boundary of the wetland)

- _____ Low marsh not present (Continue to Step 5)
- x Low marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community. Check the appropriate Vegetation Group (see Appendix 16) for each Low Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass	x	0.04	0.2	6	1.2
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
5	Duckweed				2	
6	Smartweed-Waterwillow				6	
7	Waterlily-Lotus				11	
8	Waterweed-Watercress				9	
9	Ribbongrass				10	
10	Coontail-Naiad-Watermilfoil				13	
11	Narrowleaf Pondweed				5	
12	Broadleaf Pondweed				8	
Total Score (maximum 75 points)						1.2

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Step 5: High Marsh: area from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.

High marsh not present (Continue to Step 6)
 High marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community. Check the appropriate Vegetation Group for each High Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass	x	0.46	0.2	6	1.2
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
Total Score (maximum 25 points)						1.2

Step 6: Swamp: Swamp communities containing fish habitat, either seasonally or permanently. Determine the total area of seasonally flooded swamps and permanently flooded swamps containing fish habitat.

Swamp containing fish habitat not present (Continue to Step 7)
 Swamp containing fish habitat present (Score as follows)

Swamp containing fish habitat	Present (check)	Total area (ha)	Area Factor (see Table 5)	Score	TOTAL SCORE (factor x score)
seasonally flooded				10	
permanently flooded				10	
SCORE (maximum 20 points)					

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Step 7: Calculation of final score

Score for Spawning and Nursery Habitat (Low Marsh) (maximum 75 points)	<u>1.2</u>
Score for Spawning and Nursery Habitat (High Marsh) (maximum 25 points)	<u>1.2</u>
Score for Swamp Containing Fish Habitat (maximum 20 points)	<u>0</u>

Sum (maximum score 100 points): 2

4.2.7.2 Migration and Staging Habitat

Step 1:

- 1) Staging or Migration Habitat is not present in the wetland _____ (Score = 0)
- 2) Staging or Migration Habitat is present in the wetland, significance of the habitat is known _____
(Go to Step 2)
- 3) Staging or Migration Habitat is present in the wetland, significance of the habitat is not known x _____
(Go to Step 3)

Only one of Step 2 or Step 3 is to be scored.

Step 2: Select the highest appropriate category below, attach documentation:

- 1) Significant in Site Region _____ 25
- 2) Significant in Site District _____ 15
- 3) Locally Significant _____ 10
- 4) Fish staging and/or migration habitat present, but not as above _____ 5

Score for Fish Migration and Staging Habitat (maximum score 25 points): 0

Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to be the dominant site type). Note name of river for 2) and 3).

- 1) Wetland is riverine at rivermouth or lacustrine at rivermouth _____ 25
- 2) Wetland is riverine, within 0.75 km of rivermouth _____ 15
- 3) Wetland is lacustrine, within 0.75 km of rivermouth _____ 10
- 4) Fish staging and/or migration habitat present, but not as above x _____ 5

Score for Staging and Migration Habitat (maximum score 25 points): 5

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.3 ECOSYSTEM AGE (Fractional Area = Area of wetland type/total area of wetland)

	Fractional Area		Scoring
Bog	_____	x 25	_____
Fen, treed to open on deep soils, floating mats or marl	<u>0.75</u>	x 20	<u>15</u>
Fen, on limestone rock	_____	x 5	_____
Swamp	<u>0.24</u>	x 3	<u>0.72</u>
Marsh	<u>0.01</u>	x 0	<u>0</u>

Ecosystem Age Score (maximum 25 points): 16

4.4 GREAT LAKES COASTAL WETLANDS

Score for coastal (see text for definition) wetlands only

Choose one only

wetland <10 ha	_____	10
wetland 10-50 ha	_____	25
wetland 51-100 ha	_____	50
wetland >100 ha	_____	75

Great Lakes Coastal Wetlands Score (maximum 75 points): 0

5.0 EXTRA INFORMATION

5.1 PURPLE LOOSESTRIFE

Absent/Not seen x

Present

- 1) One location in wetland
- Two to many locations

Abundance code

- a) < 20 plants
- b) 20-99 plants
- c) 100-999 plants
- d) > 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)
- Seasonal (1 to 3 months) x
- 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
- Observed or heard on lake or river adjoining the wetland
- x not as above

Northern Ontario Wetlands Evaluation, Data and Scoring Record

INVESTIGATORS

Krista Prosser

AFFILIATION

DST Consulting engineers

DATES WETLAND VISITED

September 4, 2012

DATE THIS EVALUATION COMPLETED:

February 12, 2013

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

6.5

WEATHER CONDITIONS

i) at time of field work : 18°C, sunny with clouds

ii) summer conditions in general : precipitation levels were high in June and August

OTHER POTENTIALLY USEFUL INFORMATION:

CHECKLIST OF PLANT AND ANIMAL SPECIES RECORDED IN THE WETLAND:

attach list of all flora and fauna observed in the wetland:

* Indicate if voucher specimens or photos have been obtained, where located, etc.)

Northern Ontario Wetlands Evaluation, Data and Scoring Record

SUMMARY OF EVALUATION RESULT

Wetland WLD1_____

TOTAL FOR 1.0 BIOLOGICAL COMPONENT 83

TOTAL FOR 2.0 SOCIAL COMPONENT 48

TOTAL FOR 3.0 HYDROLOGICAL COMPONENT 165

TOTAL FOR 4.0 SPECIAL FEATURES COMPONENT 73

WETLAND TOTAL 369

INVESTIGATORS

Krista Prosser,

AFFILIATION

DST Consulting Engineers

DATE: **February 12, 2014**

Northern Ontario Wetlands Evaluation, Data and Scoring Record

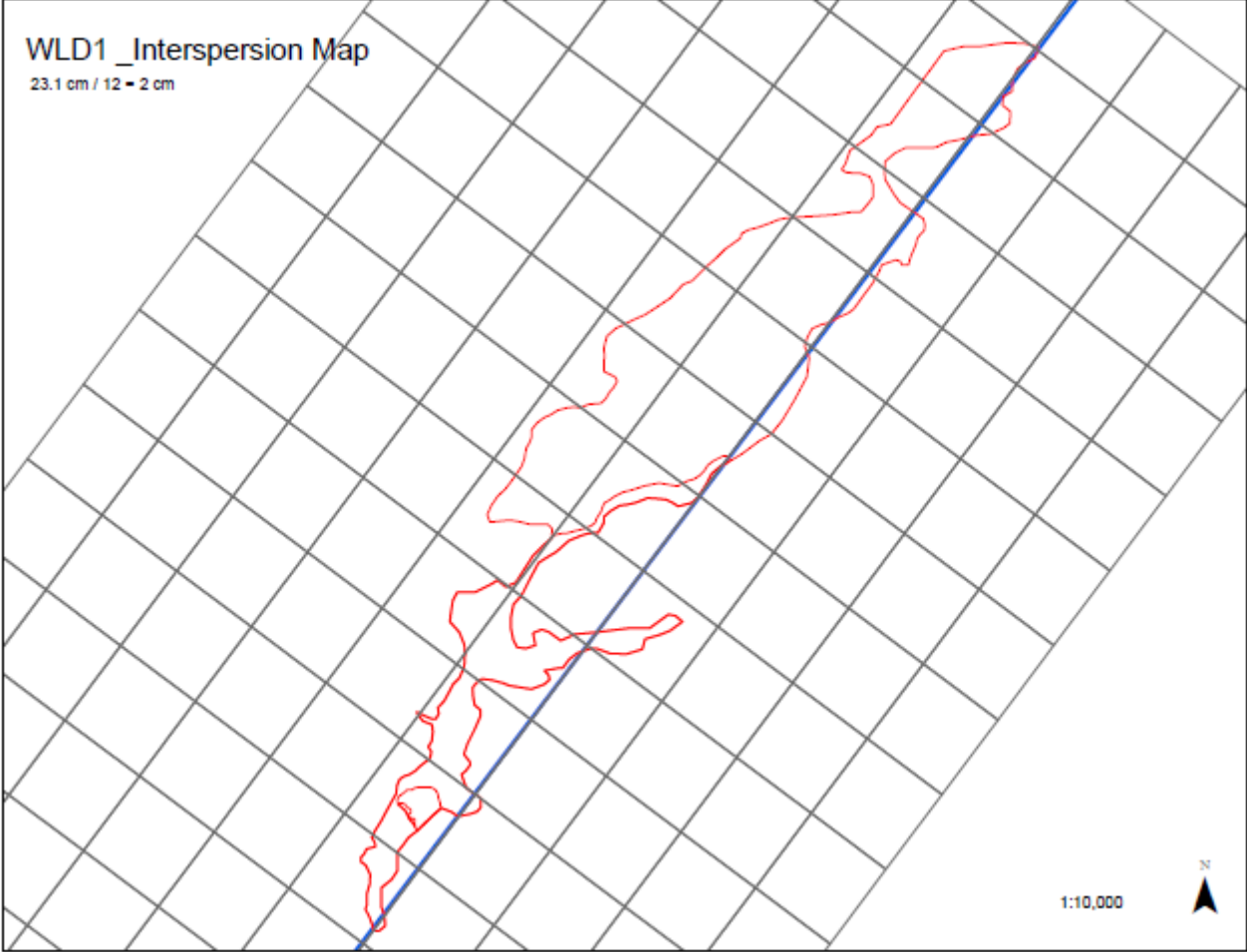
Wetland ID: wld1		Site Type: Palustrine	
Date Surveyed: September 5, 2012			
BIOLOGICAL COMPONENT			
Productivity		Growing Degree-Day/soils (max 30)	8
		Wetland Type (max 15)	7
		Site Type (max 5)	2
Biodiversity	=	Number of Wetland types (max 30)	20
		Vegetation Communities (max 45)	5
		Diversity of Surrounding Habitat (max 7)	6
		Proximity to other wetlands (max 8)	8
		Interspersion (max 30)	9
		Open water type (max 30)	8
		Size (max 50)	10
		Total Biological Component (not to exceed 250)	83
SOCIAL COMPONENT			
Economically Valuable Products		Wood products (max 14)	0
		Low Bush Cranberry (max 2)	2
		Wild rice (max 10)	0
		Commercial fish (max 12)	0
		Furbearers (max 12)	3
Recreational Activities		Hunting/Fishing/Nature (max 80)	0
		Landscape Distinctness (max 3)	3
		Absence of human disturbance (max 7)	7
		Educational Uses (max 20)	0
		Facilities and Programs (8)	0
		Research and Studies (max 12)	8
		Proximity to human settlement (max 40)	10
		Ownership (max 10)	8
		Size (max 20)	7
		Aboriginal and cultural (max 30)	0
		Total for Social Component (not to exceed 250)	48
HYDROLOGICAL COMPONENT			
		Flood attenuation (max 100)	59
Ground Water Recharge		Site type (20)	20
		Hydrological Soils (max 10)	7
Downstream Water Quality Improvement		Watershed Improvement (max 30)	30
		Adjacent Watershed Land Use (max 60)	4
		Vegetation form (max 10)	8
		Carbon Sink (max 15)	15
		Shoreline erosion control (max 15)	0
		Groundwater Discharge (max 30)	22
		Total for Hydrological Component (not to exceed 250)	165
SPECIAL FEATURES			
Rarity		Wetlands (max 70)	50
		Endangered/Threatened spp. breeding habitat (no max)	0
		Traditional use by endanger/threatend spp. (no max)	0
		Provincially significant animals (no max)	0
		Provincially significant plants (no max)	0
		Regionally significant spp. (no max)	0
		Locally significant spp. (no max)	0
		Species of Special Status (Black Duck) (max 25)	0
Significant Features and Habitats		Colonial Waterbirds (max 50)	0
		Winter Cover for Wildlife (max 100)	0
		Waterfowl Staging/Moutling (max 150)	0
		Waterfowl Breeding (max 100)	0
		Migratory Passerine, Shorebird or Raptor stopover (max 100)	0
		Ungulate Habitat (max 100)	0
		Fish Nursery Habitat (max 100)	2
		Fish Staging/Migration Habitat Present (max 25)	5
		Ecosystem Age (max 25)	16
		Great Lake Coastal Wetlands (max 75)	0
		Total for Special features (not to exceed 250)	73
TOTAL			369

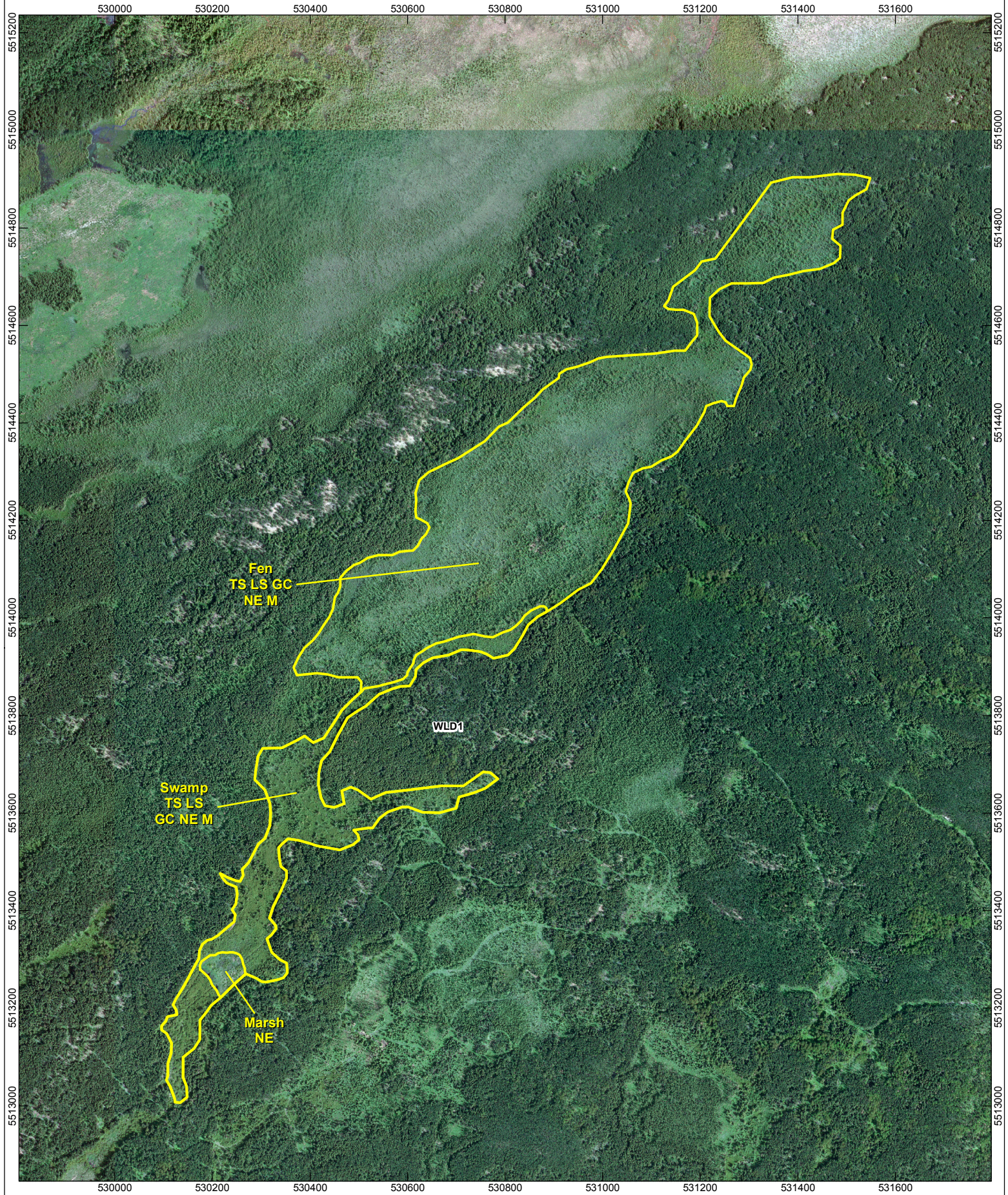
Northern Ontario Wetlands Evaluation, Data and Scoring Record

Scientific Name	Common Name
<i>Agrostis scabra</i>	Tickle grass
<i>Alnus incana</i>	Speckled alder
<i>Bidens cernua</i>	Nodding bur marigold
<i>Brasenia schreberi</i>	water shield
<i>calamagrostis canadensis</i>	Canada bluejoint
<i>Callitriche hermaphroditica</i>	Submerged water starwort
<i>Campanula aparinoides</i>	Marsh bellflower
<i>Carex disperma</i>	Soft leaved sedge
<i>Carex pauciflora</i>	Few flowered sedge
<i>Carex uticulata</i>	Beaked Sedge
<i>Chamaedaphne calyculata</i>	Leather Leaf
<i>Cladina rangiferina</i>	Reindeer Lichen
<i>Cladonia cristatella</i>	British Soldiers
<i>Coptis trifolia</i>	Gold thread
<i>Drepanocladus spp.</i>	Sickle moss
<i>Galium trifidum</i>	Small bedstraw
<i>Galium triflorum</i>	Fragrant Bedstraw
<i>Glyceria borealis</i>	Northern manna
<i>Gymnocarpium dryopteris</i>	Oak fern
<i>Kalmia polifolia</i>	Bog Laurel
<i>Larix laricina</i>	Tamarack
<i>ledum groenlandicum</i>	Labrador tea
<i>Lycopodiella inundata</i>	Northern bog clubmoss
<i>Lycopus uniflorus</i>	Northern Bugleweed
<i>Megalodonta beckii</i>	Water marigold
<i>Mnium spp.</i>	Mniums
<i>Picea mariana</i>	Black Spruce
<i>Poa palustris</i>	Fowl blue grass
<i>Polytrichum spp.</i>	Haircap moss
<i>Potamogeton pusillus</i>	Slender pondweed
<i>Ranunculus longirostris</i>	Curly white water crowfoot
<i>Rubus pubescens</i>	Dwarf raspberry
<i>Salix spp.</i>	Willow
<i>Scirpus cyperinus</i>	Woolgrass
<i>Scirpus validus</i>	Softstem Bullrush
<i>Sparganium eurycarpum</i>	Large fruited burreed
<i>Sphagnum girgensohnii</i>	Common Green Peat Moss
<i>Sphagnum spp.</i>	Common Peat Moss
<i>Vaccinium macrocarpon</i>	Large Cranberry
<i>Vaccinium oxycoccus</i>	Small Cranberry
<i>viola spp.</i>	viola

Wildlife Observed

Pine Martin
 Merlin
 Grey Jay
 Boreal Chickadee
 Beaver evidence





GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Vegetation Communities

Wetland - WLD1

SCALE: 10000
 TREASURY METALS INC.

0 100 200
 Meters

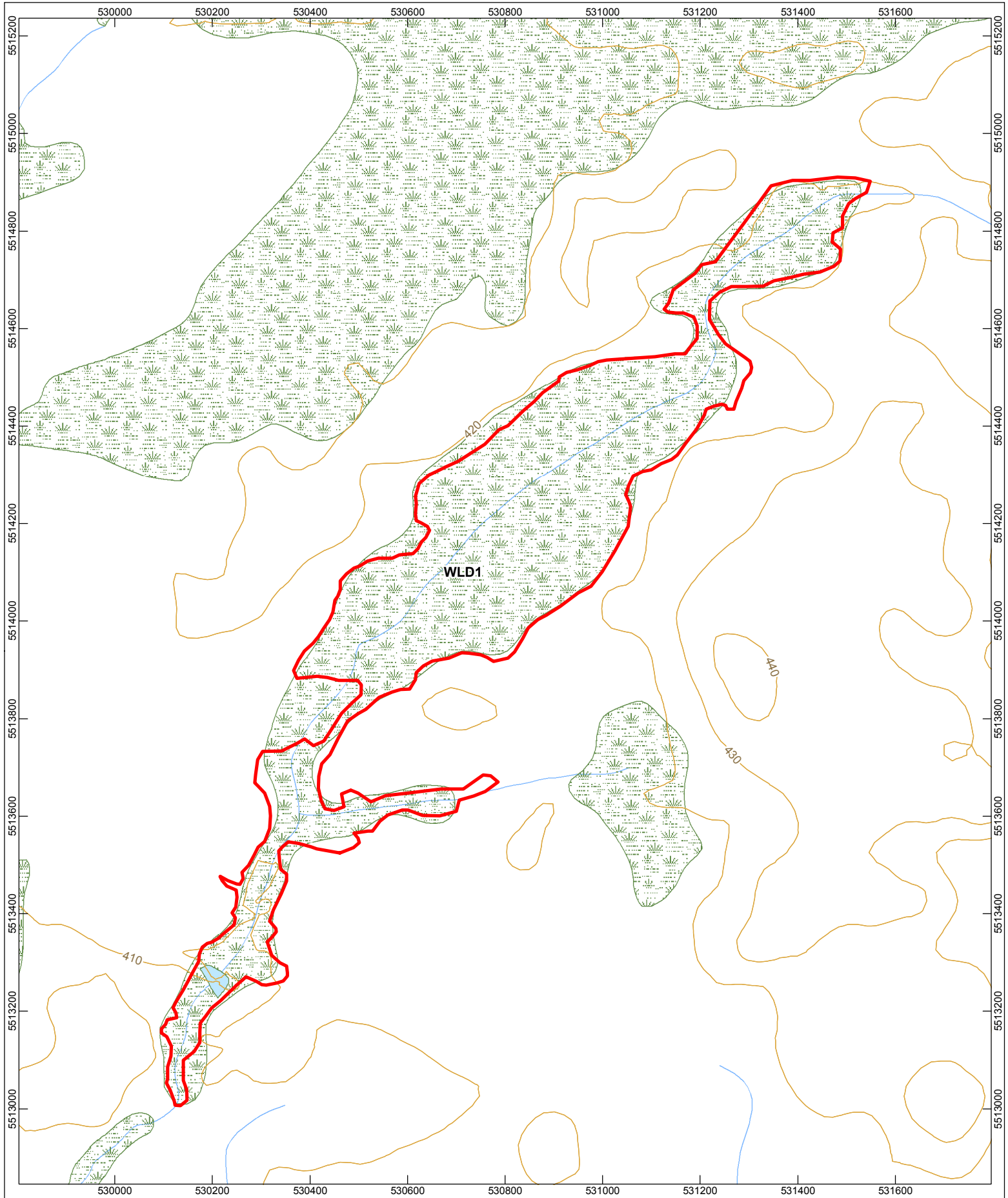
N

LEGEND

Vegetation Community

GC - Herbs and Ground Cover
 LS - Low Shrubs
 NE - Narrow Leaved Emergents
 M - Moss and Lichens
 TS - Tall Shrubs





GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Wetland Boundary Map

Wetland - WLD1 | REV.00

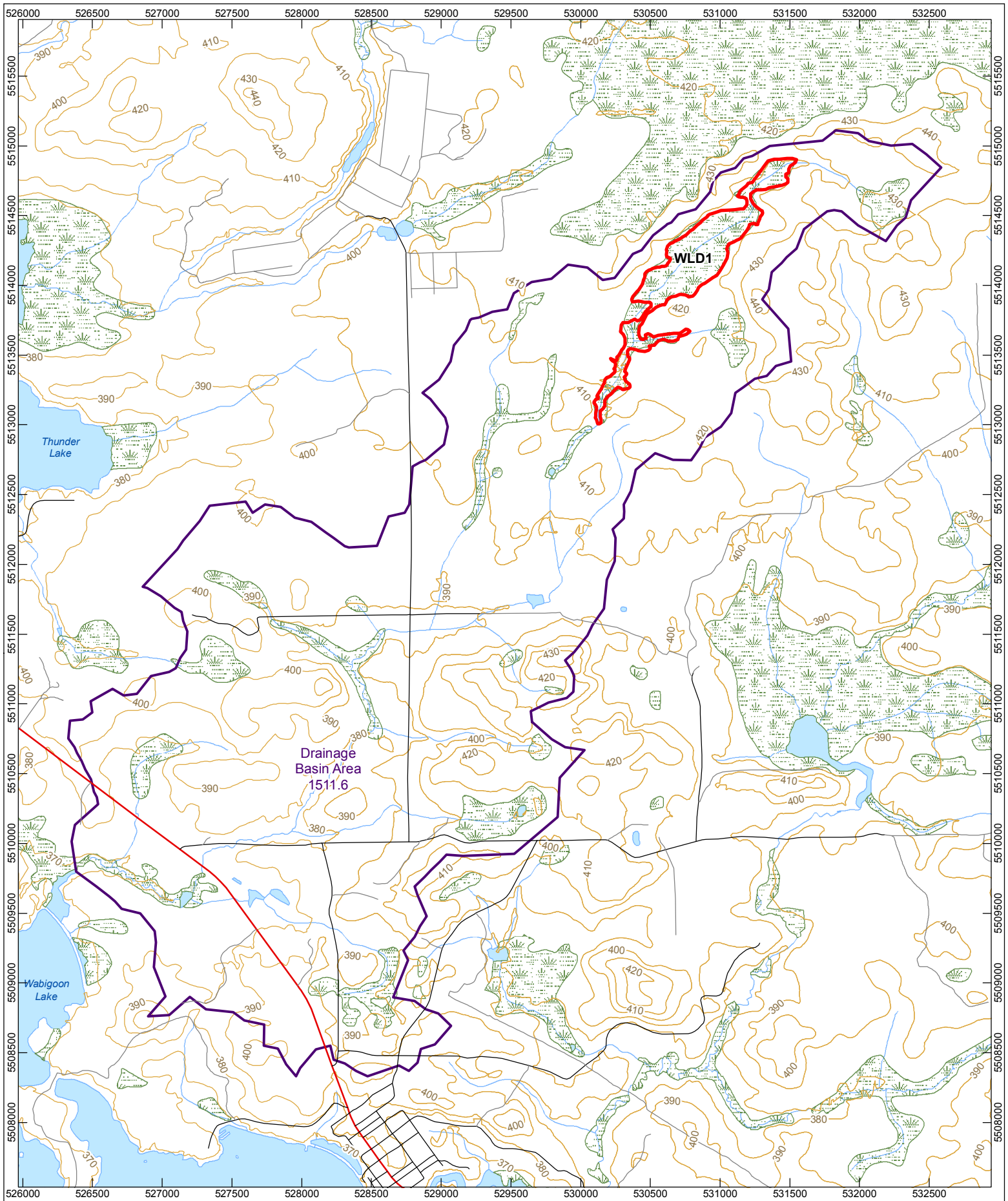
SCALE: 10000
 TREASURY METALS INC.

0 100 200
 Meters

- Expressway / Highway
- Local
- Resource / Recreation
- Elevation Contour
- Wetland Boundary: Ontario Wetland Evaluation System

- Wetland: Land Information Data Set
- Waterbody
- Watercourse





GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Wetland Drainage Basin Map

Wetland - WLD1 REV.00

SCALE: 35000
 TREASURY METALS INC.

0 300 600
 Meters



- Expressway / Highway
- Local Roadway
- Resource / Recreational Road
- Elevation Contour

- Wetland Boundary: Ontario Wetland Evaluation System
- Drainage Basin

- Wetland: Land Information Data Set
- Waterbody
- Watercourse



WETLAND DATA AND SCORING RECORD

- i) **WETLAND NAME:** WLD2
- ii) **MNR ADMINISTRATIVE REGION:** Northwest **DISTRICT:** Dryden
AREA OFFICE (if different from District): _____
- iii) **CONSERVATION AUTHORITY JURISDICTION:** N/A
(If not within a designated CA, check here: X)
- iv) **COUNTY OR REGIONAL MUNICIPALITY:** N/A
- v) **TOWNSHIP:** Zealand
- vi) **LOTS & CONCESSIONS:** Lot 4 and 5, Concession 4
(attach separate sheet if necessary)
- vii) **MAP AND AIR PHOTO REFERENCES**
 - a) Latitude: 49°46'09" Longitude: 92 °35'22"
 - b) UTM grid reference: Zone: 15
Grid: E 529377 N 5531002
 - c) Ontario Ministry of Natural Resources Data:
Lands Information Data
Lands Information Ontario
 - d) Digital Orthoimagery: Date photos taken: summer 2010

Supplied by: Treasury Metals Inc.
Scale of mapping: 1:10,000
 - e) Ontario Base Map numbers & scale 2015530055100 1:10,000

viii) WETLAND SIZE AND BOUNDARIES

a) Single contiguous wetland area: 7.2 hectares

b) Wetland complex comprised of ___ individual wetlands:

Wetland Unit Number (for reference)	Size of each wetland unit
Wetland Unit No. 1	_____ ha
Wetland Unit No. 2	_____ ha
Wetland Unit No. 3	_____ ha
Wetland Unit No. 4	_____ ha
Wetland Unit No. 5	_____ 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

(Attach additional sheets if necessary)

TOTAL WETLAND SIZE _____ ha

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

N/A

1.0 BIOLOGICAL COMPONENT

1.1 PRODUCTIVITY

1.1.1 GROWING DEGREE-DAYS/SOILS

GROWING DEGREE DAYS SOILS

(check one)	Estimated Fractional Area
_____ <1600	_____ clay/loam
_____ 1600-2000	_____ silt/marl
<u> x </u> 2000-2400	_____ limestone
_____ 2400-2800	_____ sand
_____ 2800-3000	<u> 0.4 </u> humic/mesic
_____ >3000	<u> 0.6 </u> fibric
	_____ granite

SCORING:

Growing Degree Days	Clay/Loam	Silt/Marl	Lime-stone	Sand	Humic/Mesic	Fibric	Granite
<1600	12	11	9	7	7	6	4
1600-2000	15	13	11	9	8	7	5
2000-2400	18	15	13	11	9*0.4	8*0.6	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

(maximum score 30; if wetland contains more than one soil type, evaluate based on the fractional area)

Steps required for evaluation: (maximum score 30 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.

Growing Degree Days/Soils Score (maximum 30 points): 7

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.1.2 WETLAND TYPE (Fractional Area = area of wetland type/ total wetland area)

Fractional Area Score

Bog	_____	x 3 =	_____
Fen	<u>0.2</u>	x 6 =	<u>1.2</u>
Swamp	<u>0.8</u>	x 8 =	<u>6.4</u>
Marsh	_____	x 15 =	_____

Wetland Type Score (maximum 15 points): 8

1.1.3 SITE TYPE (Fractional Area = area of site type/ total wetland area)

Fractional Area Score

Isolated	_____	x 1 =	_____
Palustrine (permanent or Intermittent flow)	<u>1.0</u>	x 2 =	<u>2</u>
Riverine	_____	x 4 =	_____
Riverine (at rivermouth)	_____	x 5 =	_____
Lacustrine (at rivermouth)	_____	x 5 =	_____
Lacustrine (on enclosed bay, with barrier beach)	_____	x 3 =	_____
Lacustrine (exposed to lake)	_____	x 2 =	_____

Site Type Score (maximum 5 points): 2

1.2 BIODIVERSITY

1.2.1 NUMBER OF WETLAND TYPES

(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 points): 13

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.2 VEGETATION COMMUNITIES

Attach a separate sheet listing community (map) codes, vegetation forms and dominant species. Use the form on the following page to record percent area by dominant vegetation form. This information will be used in other parts of the evaluation.

Communities should be grouped by number of forms. For example, 2 form communities might appear as follows:

2 forms

<u>Code</u>	<u>Forms</u>	<u>Dominant Species</u>
M6	re, ff	re, <i>Typha latifolia</i> ; ff, <i>Lemna minor</i> , <i>Wolffia</i>
S1	ts, gc	ts, <i>Salix discolor</i> ; gc, <i>Impatiens capensis</i> , <i>Thelypteris palustris</i>

Note that the dominant species for each form are separated by a semicolon. The dominant species (maximum of 2) within a form are separated by commas.

Scoring:

Total # of communities with 1-3 forms	Total # of communities with 4-5 forms	Total # of communities with 6 or more forms
1 = 1.5 points	1 = 2 points	1 = 3 points
2 = 2.5	2 = 3.5	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	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	+0.5 each additional community	+1 each additional community

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

$$6 + 13.5 + 15 = 34.5 = 35 \text{ points}$$

Vegetation Communities Score (maximum 45 points): 5

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Wetland Name: WLD2

Wetland Size (ha): 7.2

Vegetation Form % area in which form is dominant

h —

c 0.4

dh —

dc —

ts 0.4

ls —

ds —

gc —

m —

ne 0.2

be —

re —

ff —

f —

su —

u (unvegetated) —

Total = **100%**

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.3 DIVERSITY OF SURROUNDING HABITAT

(Check all appropriate items)

<u> </u>	recent burn (< 5yr)
<u> x </u>	abandoned agricultural land
<u> x </u>	utility corridor
<u> x </u>	deciduous forest
<u> x </u>	recent cutover or clearcut (<5 yr)
<u> x </u>	coniferous forest
<u> x </u>	mixed forest (at least 25% conifer and 75% deciduous or vice versa)
<u> </u>	crops
<u> </u>	abandoned pits or quarries
<u> </u>	pasture
<u> </u>	ravine
<u> </u>	fence rows
<u> </u>	open lake or deep river
<u> </u>	creek floodplain
<u> x </u>	rock outcrop

Diversity of Surrounding Habitat Score (1 for each, maximum 7 points): 7

1.2.4 PROXIMITY TO OTHER WETLANDS

(Check first appropriate category only)

Scoring

1) <u> x </u>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river within 1.5 km	8 points
2) <u> </u>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
3) <u> </u>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river from 1.5 to 4 km away	5
4) <u> </u>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
5) <u> </u>	Within 0.75 km of other wetlands (different dominant wetland type) or open lake or river, but not hydrologically connected by surface water	5
6) <u> </u>	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
7) <u> </u>	No wetland within 1 km	0

Proximity to other Wetlands Score (Choose one only, maximum 8 points): 8

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1.2.5 INTERSPERSION

Number of Intersections (check one)

- | | | |
|---------------|--------------|----|
| 1) 26 or less | _____ | 3 |
| 2) 27 to 40 | <u> x </u> | 6 |
| 3) 41 to 60 | _____ | 9 |
| 4) 61 to 80 | _____ | 12 |
| 5) 81 to 100 | _____ | 15 |
| 6) 101 to 125 | _____ | 18 |
| 7) 126 to 150 | _____ | 21 |
| 8) 151 to 175 | _____ | 24 |
| 9) 176 to 200 | _____ | 27 |
| 10) >200 | _____ | 30 |

Interspersion Score (Choose one only, maximum 30 points): 6
(35 intersections)

1.2.6 OPEN WATER TYPES

Permanently flooded (Check one)

- | | | |
|------------------|--------------|----|
| 1) No open water | _____ | 0 |
| 2) Type 1 | <u> x </u> | 8 |
| 3) Type 2 | _____ | 8 |
| 4) Type 3 | _____ | 14 |
| 5) Type 4 | _____ | 20 |
| 6) Type 5 | _____ | 30 |
| 7) Type 6 | _____ | 8 |
| 8) Type 7 | _____ | 14 |
| 9) Type 8 | _____ | 3 |

Open Water Score (Choose one only, maximum 30 points): 0

1.3 SIZE

7.2 hectares

Size Score (Biological Component) (maximum 50 points):

Table 2. Evaluation Table for Size Score (Biological Component)

Wetland size (ha)	Total Score for Biodiversity Subcomponent									
	<37	37-47	48-60	61-72	73-84	85-96	97-108	109-120	121-132	>132
<20 ha	1	5	7	8	9	17	25	34	43	50
20-40	5	7	8	9	10	19	28	37	46	50
41-60	6	8	9	10	11	21	31	40	49	50
61-80	7	9	10	11	13	23	34	43	50	50
81-100	8	10	11	13	15	25	37	46	50	50
101-120	9	11	13	15	18	28	40	49	50	50
121-140	10	13	15	17	21	31	43	50	50	50
141-160	11	15	17	19	23	34	46	50	50	50
161-180	13	17	19	21	25	37	49	50	50	50
181-200	15	19	21	23	28	40	50	50	50	50
201-400	17	21	23	25	31	43	50	50	50	50
401-600	19	23	25	28	34	46	50	50	50	50
601-800	21	25	28	31	37	49	50	50	50	50
801-1000	23	28	31	34	40	50	50	50	50	50
1001-1200	25	31	34	37	43	50	50	50	50	50
1201-1400	28	34	37	40	46	50	50	50	50	50
1401-1600	31	37	40	43	49	50	50	50	50	50
1601-1800	34	40	43	46	50	50	50	50	50	50
1801-2000	37	43	47	49	50	50	50	50	50	50
>2000	40	46	50	50	50	50	50	50	50	50

2.0 SOCIAL COMPONENT

2.1 ECONOMICALLY VALUABLE PRODUCTS

2.1.1 WOOD PRODUCTS

Area of wetland forested (ha); not wetland size

1) <5 ha	<u> x </u>	0
2) 5 – 25 ha	<u> </u>	4
3) 26 – 50 ha	<u> </u>	6
4) 51 – 100 ha	<u> </u>	8
5) 101-200 ha	<u> </u>	11
6) > 200 ha	<u> </u>	14

Source of information: Forest Resource Inventory (FRI – GIS data)

Wood Products Score (Score one only, maximum 14 points): 0

2.1.2 LOWBUSH CRANBERRY

1) Present	<u> x </u>	2
2) Absent	<u> </u>	0

Source of information: Field observation

Lowbush Cranberry Score (maximum 2 points): 2

2.1.3 WILD RICE

1) Present	<u> </u>	10
2) Absent	<u> x </u>	0

Source of information: Field observation

Wild Rice Score (maximum 10 points): 0

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2.4.2 FACILITIES AND PROGRAMS

1) Staffed interpretation centre with shelters, trails, literature	_____	8
2) No interpretation centre or staff, but a system of self-guided trails and observation points, or brochures available	_____	4
3) Facilities such as maintained paths (e.g., wood chips) Boardwalks, boat launches, or observation towers	_____	2
4) No facilities or programs	_____ x	0

Source of information: _____

Facilities and Programs Score (maximum 8 points): 0

2.4.3 RESEARCH AND STUDIES

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

Attach list of known reports by above categories

- *DST Consulting Engineers Sediment and Benthics and Aquatic Baseline Environmental Reports 2014 (2012 data), Reference Number OE-KN-018101*

Research and Studies Score (Score is cumulative, maximum 12 points): 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	16
0.5 to 10 km from settlement	26	16	10
10 to 60 km from settlement	12	8	4
>60 km from settlement	5	2	0
>100 km from settlement	0	0	0

Name of settlement: Wabigoon Lake Ojibway Nation (WLON)

Proximity to Human Settlement Score (maximum 40 points): 10

2.6 OWNERSHIP (FA = fractional area)

Wetland in public or private ownership, held under contract or in trust for wetland protection

Fractional Area Score

_____ x 10 = ____

Wetland in public ownership, not as above

0.2 x 8 = 1.6

Wetland in private ownership, not as above

0.8 x 4 = 3.2

Source of information: Treasury Resources Inc.

Ownership Score (maximum 10 points): 5

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2.7 SIZE (See size table -- Social Component)

7.2 hectares

Size Score (Social Component) (maximum 20 points): 2

Table 3. Evaluation Table for Size Score (Social Component)

Wetland size (ha)	Total for Size Dependent Score									
	<30	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
2-4	1	2	4	8	12	13	14	14	15	16
5-8	2	2	5	9	13	14	15	15	16	16
9-12	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	18	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	19	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	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.

2.8.1 ABORIGINAL VALUES

Full documentation of sources must be attached to the data record.

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

2.8.2 CULTURAL HERITAGE

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

Aboriginal Values/Cultural Heritage Score (maximum 30 points): 0

3.0 HYDROLOGICAL COMPONENT

3.1 FLOOD ATTENUATION

If the wetland is a complex including isolated wetlands, apportion the 100 points according to area. For example, if 10 ha of a 100 ha complex is isolated, the isolated portion receives the maximum proportional score of 10. The remainder of the wetland is then evaluated out of the remaining 90 points.

Step 1.

If wetland is entirely Isolated, go directly to Step 5.

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 5.

All other wetlands, go through steps 2, 3, 4 and 5.

Step 2.

Determination of Upstream Detention Factor (DF)

(a)	Wetland area (ha)	<u>7.2</u>
(b)	Total area (ha) of <u>upstream</u> detention areas (include the wetland itself)	<u>50.2</u>
(c)	Ratio of (a):(b)	<u>0.14</u>
(d)	Upstream detention factor: (c) x 2 = (Maximum allowable factor = 1)	<u>0.3</u>

Step 3.

Determination of Peak Flow Attenuation Factor (AF)

(a)	Wetland area (ha)	<u>7.2</u>
(b)	Size of catchment basin (ha) <u>upstream</u> of wetland (include wetland itself in catchment area)	<u>1511.6</u>
(c)	Ratio of (a):(b)	<u>0.004</u>
(d)	Wetland attenuation factor: (c) x 10 = (Maximum allowable factor = 1)	<u>0.04</u>

Step 4.

Determination of Wetland Surface Form Factor (FF)

From the list below, select the surface form which best describes the wetland.

	Factor	
Flooded with little or no aquatic vegetation	_____	0
Flooded but with submergent, emergent or floating vegetation	_____	0.2
Flat (lawn) vegetation (typical of fens)	_____	0.5
Hummock-depression microtopography	<u> x </u>	0.7
Patterned (e.g., string bog, ribbed fen)	_____	1.0

Surface Form Factor (FF) 0.7

(Maximum allowable factor = 1)

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Step 5. Calculation of Final Score

1. Wetland is entirely Isolated 100 points
2. Wetland is lacustrine and the ratio of wetland area:lake area is <0.1 0 points
3. Wetland is riverine along the St. Mary's River 0 points
4. For all other wetlands*, calculate as follows:

(a)	Upstream Detention Factor (DF) (Step2)	0.3
(b)	Wetland Attenuation Factor (AF) (Step 3)	0.04
(c)	Surface Form Factor (FF) (Step 4)	0.7

$$[(DF + AF + FF)/3] \times 100^* \quad \underline{35}$$

* Unless wetland is a complex including isolated portions -- see above

Total Flood Attenuation Score (maximum 100 points): 35

3.2 GROUND WATER RECHARGE

3.2.1 SITE TYPE

- 1) Wetland > 50% lacustrine (by area) or located on the St. Mary's River Score = 0
- 2) Wetland not as above. Calculate final score as follows:
(FA = area of site type/total area of wetland)

1.0	FA of isolated or palustrine wetland	x 20 = <u>20</u>
_____	FA of riverine wetland	x 5 = _____
_____	FA of lacustrine wetland (wetland <50% lacustrine)	x 0 = _____

Site Type Score: (maximum 20 points): 20

3.2.2 SOILS

EVALUATION:

Dominant Wetland Type	Sand, loam, gravel, till	Clay, bedrock
Lacustrine or on St. Mary's River	0	0
Isolated	10	5
Palustrine	7	4
Riverine (not on St. Mary's River)	5	2

Hydrological Soil Class Score (maximum 10 points): 7

3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

3.3.1 WATERSHED IMPROVEMENT FACTOR

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

<u>Site Type</u>	<u>Improvement Factor (IF)</u>
Isolated	FA _____ x 0.5 = _____
Riverine	FA _____ x 1.0 = _____
Palustrine with no inflow	FA _____ x 0.7 = _____
Palustrine with inflows	FA <u>1.0</u> x 1.0 = <u>30</u>
Lacustrine on lake shoreline	FA _____ x 0.2 = _____
Lacustrine at lake inflow or outflow	FA _____ x 1.0 = _____

Watershed Improvement Score (IF x 30) (maximum = 30): 30

3.3.2 ADJACENT AND WATERSHED LAND USE EVALUATION:

Step 1. Determination of Maximum Initial Score

_____ Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)

_____ x _____ All other wetlands (Go through steps 2, 3, 4, and 5b)

Step 2. Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in an extensive manner.

Choose one		
> 50% of catchment basin	_____	20
20-50% of catchment basin	_____	14
< 20% of catchment basin	_____ x _____	4

Score for BLU: 4

Step 3. Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

Choose the highest only

Major corridor ¹	_____	15
Secondary corridor	_____	11
Tertiary corridor	_____	6
Temporary or abandoned	_____	3
None	_____ x _____	0

Score for LUU: 0

¹ Major, secondary and tertiary roads are those that are indicated as such on the provincial highways map. Major hydro corridors are trunk lines coming directly from a generating station. Major pipelines are trans-continental lines. Secondary corridors are regional distribution lines (i.e. multi-cable hydro corridors not emanating directly from a generating station or regional gas distribution lines). Tertiary corridors are single hydro lines or local gas distribution lines (i.e. to domestic users).

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Step 4. Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits use for local road construction), etc. Score as 'present' only if a point source land use is located less than 1 km upstream from the wetland.

a) Present	_____	15
b) Absent	<u> x </u>	0

Score for PS: 0

Step 5. Calculation of total score for Adjacent and Watershed Land Use

	Score
a) Wetland on the Great Lakes or St. Mary's River	0
b) All other wetlands, calculate as follows:	

Final Score BLU + LUU + PS: 4

3.3.3 VEGETATION FORM

Choose the category that best describes the vegetation of the wetland

Trees, shrubs or herbs (h, c, ts, ls, gc)	<u> x </u>	8
Emergents, submergents (ne, re, be, f, ff, su)	_____	10
Little or no vegetation (u)	_____	0

Dominant Vegetation Form Score (maximum 10 points): 8

3.4 CARBON SINK

Choose the category that best describes the wetland.

1) Wetland a bog or fen with > 50% organic soils	_____	15
2) Wetland has organic soils occupying 10 to 50% of the area (i.e. mainly mineral or undesignated soil, any wetland type)	_____	6
3) Marshes and swamps with >50% organic soil	<u> x </u>	9
4) Wetland with <10% organic soils	_____	0

Carbon Sink Score (maximum 15 points): 9

3.5 SHORELINE EROSION CONTROL

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.

- Step 1.**
- | | | |
|---------------|---|------------|
| <u> x </u> | Wetland entirely isolated or palustrine | Score
0 |
| <u> </u> | Any part of the wetland riverine, or lacustrine (proceed to Step 2) | |

Step 2. Choose the one characteristic that best describes the shoreline vegetation.
(See text for the definition of shoreline.)

- | | | |
|----------------------------|-------|----|
| Trees and shrubs | _____ | 15 |
| Emergent vegetation | _____ | 8 |
| Submergent vegetation | _____ | 6 |
| Other shoreline vegetation | _____ | 3 |
| No vegetation | _____ | 0 |

Shoreline Erosion Control Score (maximum 15 points): 0

3.6 GROUNDWATER DISCHARGE

(Circle the characteristics that best describe the wetland being evaluated and sum the scores.)

Category	Catchment interaction		
Wetland type	Bog = 0	Swamp/Marsh = 2	Fen = 5
Basin topography	Flat/Rolling = 0	Hilly = 2	Major relief break = 5
Wetland area:Upslope catchment area	Large (>50%) = 0	Moderate (6 - 50%) = 2	Small (<5%) = 5
Lagg development	None found = 0	Minor = 2	Extensive = 5
Seeps at wetland edge	None found = 0	1 to 3 seeps = 5	4 or more seeps = 10
Iron precipitates evident at edge	None = 0	1-3 deposits = 2	4 or more deposits = 5
Surface marl deposits	None = 0	1-3 deposits = 2	> 3 = 5
Wetland pH	Low < 4.2 = 0	Moderate 4.2-5.7 = 5	High >5.7 = 10
Catchment soil coverage	Patchy = 0	Thin (<20 cm) = 2	Thick = 5
Catchment soil permeability	Low = 0	Moderate = 2	High = 5

(Scores are cumulative, maximum score 30 points)

Groundwater Discharge Score (maximum 30 points): 21

4.0 SPECIAL FEATURES COMPONENT

4.1 RARITY

4.1.1 WETLANDS

Hills Site Region and Site District (5E only): _____

Wetland type (check one or more)

Bog
 Fen
 Swamp
 Marsh

Evaluation Table for Scoring Rarity of Wetland Type.

Unit Number	Site Region & District	Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	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
5E-1	Thessalon	10	0	30	20
5E-2	Gore Bay	20	0	20	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tomiko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E-12	Renfrew	0	0	30	10
5-S	Lake of the Woods	10	10	20	10

Rarity of Wetland Type Score (Maximum 70 points): 30

4.1.2 SPECIES

4.1.2.1 BREEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

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

Attach documentation

Scoring

For one species	250
For each additional species	250

(Score is cumulative, no maximum score)

Breeding Habitat for Endangered or Threatened Species Score (no maximum): 0

4.1.2.2 TRADITIONAL MIGRATION OR FEEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach documentation

Scoring

For one species	150 points
For each additional species	75

(Score is cumulative, no maximum score)

Traditional Habitat for Endangered or Threatened Species Score (no maximum): 0

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4.1.2.3 PROVINCIALY SIGNIFICANT ANIMAL SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant animal species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.) (no maximum score)

Provincially Significant Animal Species Score (no maximum): 0

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4.1.2.4 PROVINCIALY SIGNIFICANT PLANT SPECIES

(Scientific names must be recorded)

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant plant species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species Score (no maximum): 0

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4.1.2.5 REGIONALLY SIGNIFICANT SPECIES (SITE REGION)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

SIGNIFICANT IN SITE REGION:

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary; Attach documentation

** Score only if there is an approved list.

No. of species significant in Site Region

One species	=	20	6 species	=	55
2 species	=	30	7 species	=	58
3 species	=	40	8 species	=	61
4 species	=	45	9 species	=	64
5 species	=	50	10 species	=	67

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

Significant Species (Site Region) Score (no maximum): 0

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4.2.1.6 LOCALLY SIGNIFICANT SPECIES (SITE DISTRICT)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Source of information: _____

Attach separate list if necessary; Attach documentation.

Scoring

No. of species significant in Site District

One species	=	10	6 species	=	41
2 species	=	17	7 species	=	43
3 species	=	24	8 species	=	45
4 species	=	31	9 species	=	47
5 species	=	38	10 species	=	49

For each significant species over 10 in the wetland, add 1 point.

Locally Significant Species (Site District) Score (no maximum): 0

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4.1.2.7 SPECIES OF SPECIAL STATUS

Black Duck

Suitable breeding habitat present and within assessment range (Figure 17)

Assessment Category		
40 - 80 Indicated Pairs/100 km sq	_____	25
20 - 40 Indicated Pairs/100 km sq	_____	20
10 - 20 Indicated Pairs/100 km sq	_____	15
5 - 10 Indicated Pairs/100 km sq	_____	10
1 - 5 Indicated Pairs/100 km sq	_____	5
Habitat not suitable	<u> x </u>	0
Out of assessment range	_____	0

Black Duck Score (maximum 25 points): 0

4.2 SIGNIFICANT FEATURES AND HABITATS

4.2.1 NESTING OF COLONIAL WATERBIRDS

Status	Name of species	Source of information	Score
Currently nesting			50 points
Known to have nested within past 5 years			25
Active feeding area (great blue heron excluded)			15
None known			0

Attach documentation (nest locations, etc., if known)

Colonial Waterbirds Score (maximum 50 points): 0

4.2.2. WINTER COVER FOR WILDLIFE

(Check only highest level of significance)		<u>Score</u> (one only)
1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	25
3) Locally significant	_____	10
4) Little or poor winter cover present	<u> x </u>	0

Source of information: _____

Winter cover for Wildlife Score (maximum 100 points): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.2.3 WATERFOWL STAGING AND/OR MOULTING

(Check only highest level of significance for both staging and moulting; score is cumulative across columns, maximum 150 points)

	<u>Staging</u>	Score (one only)	<u>Moulting</u>	Score (one only)
1) Nationally significant	_____	150	_____	150
2) Provincially significant	_____	100	_____	100
3) Regionally significant	_____	50	_____	50
4) Known to occur	_____	10	_____	10
5) Not possible	_____	0	_____	0
6) Not known	<u> x </u>	0	_____	0

Source of information: _____

Waterfowl Moulting and Staging Score (maximum 150 points): 0

4.2.4 WATERFOWL BREEDING

(Check only highest level of significance)

1) Provincially significant	_____	100
2) Regionally significant	_____	50
3) Habitat suitable	_____	10
4) Habitat not suitable	<u> x </u>	0

Source of information: _____

Waterfowl Breeding Score (maximum 100 points): 0

4.2.5 MIGRATORY PASSERINE, SHOREBIRD OR RAPTOR STOPOVER AREA

(check highest applicable category)

1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	10
3) Not significant	<u> x </u>	0

Source of information: _____

Passerine, Shorebird or Raptor Stopover Score (maximum 100 points): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.2.6 UNGULATE HABITAT

EVALUATION:

Score (1) + (2) + <u>one</u> of (3) to (6)		
(1) Ungulate summer cover	_____	15
(2) Mineral licks	_____	50
(3) Moose aquatic feeding area Class 1	<u> x </u>	0
(4) Moose aquatic feeding area Class 2	_____	10
(5) Moose aquatic feeding area Class 3	_____	20
(6) Moose aquatic feeding area Class 4	_____	35

(Score is cumulative for a maximum possible score of 100)

Ungulate Habitat Score (maximum 100 points): 0

4.2.7 FISH HABITAT

4.2.7.1 Spawning and Nursery Habitat

Table 5. Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5 - 4.9	0.2
5.0 - 9.9	0.4
10.0 - 14.9	0.6
15.0 - 19.9	0.8
20.0+ ha	1.0

Step 1:

_____ Fish habitat is not present within the wetland (Score = 0)

 x Fish habitat is present within the wetland (Go to Step 2)

Step 2: Choose only one option

1) _____ Significance of the spawning and nursery habitat within the wetland is known
(Go to Step3)

2) x **Significance of the spawning and nursery habitat within the wetland is not known (Go through Steps 4, 5, 6, and 7)**

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Step 3: Select the highest appropriate category below, attach documentation:

- 1) Significant in Site Region _____ 100
- 2) Significant in Site District _____ 50
- 3) Locally Significant Habitat (5.0+ ha) _____ 25
- 3) Locally Significant Habitat (<5.0 ha) _____ 15

Score for Spawning and Nursery Habitat (maximum score 100 points): 0

Step 4: Proceed to Steps 4 to 7 only if Step 3 was not scored

(**Low Marsh:** marsh area from the existing water line out to the outer boundary of the wetland)

- x Low marsh not present (Continue to Step 5)
- Low marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community. Check the appropriate Vegetation Group (see Appendix 16) for each Low Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass				6	
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
5	Duckweed				2	
6	Smartweed-Waterwillow				6	
7	Waterlily-Lotus				11	
8	Waterweed-Watercress				9	
9	Ribbongrass				10	
10	Coontail-Naiad-Watermilfoil				13	
11	Narrowleaf Pondweed				5	
12	Broadleaf Pondweed				8	
Total Score (maximum 75 points)						

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Step 5: High Marsh: area from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.

- _____ High marsh not present (Continue to Step 6)
 _____ High marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community. Check the appropriate Vegetation Group for each High Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass				6	
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
Total Score (maximum 25 points)						

Step 6: Swamp: Swamp communities containing fish habitat, either seasonally or permanently. Determine the total area of seasonally flooded swamps and permanently flooded swamps containing fish habitat.

- _____ Swamp containing fish habitat not present (Continue to Step 7)
 _____ x _____ Swamp containing fish habitat present (Score as follows)

Swamp containing fish habitat	Present (check)	Total area (ha)	Area Factor (see Table 5)	Score	TOTAL SCORE (factor x score)
seasonally flooded	x	<0.5	0.1	10	1
permanently flooded				10	
SCORE (maximum 20 points)					

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Step 7: Calculation of final score

Score for Spawning and Nursery Habitat (Low Marsh) (maximum 75 points) 0

Score for Spawning and Nursery Habitat (High Marsh) (maximum 25 points) 0

Score for Swamp Containing Fish Habitat (maximum 20 points) 1

Sum (maximum score 100 points): 1

4.2.7.2 Migration and Staging Habitat

Step 1:

1) Staging or Migration Habitat is not present in the wetland x (Score = 0)

2) Staging or Migration Habitat is present in the wetland, significance of the habitat is known _____
(Go to Step 2)

3) Staging or Migration Habitat is present in the wetland, significance of the habitat is not known _____
(Go to Step 3)

Only one of Step 2 or Step 3 is to be scored.

Step 2: Select the highest appropriate category below, attach documentation:

1) Significant in Site Region _____ 25

2) Significant in Site District _____ 15

3) Locally Significant _____ 10

4) Fish staging and/or migration habitat present, but not as above _____ 5

Score for Fish Migration and Staging Habitat (maximum score 25 points): 0

Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to be the dominant site type). Note name of river for 2) and 3).

1) Wetland is riverine at rivermouth or lacustrine at rivermouth _____ 25

2) Wetland is riverine, within 0.75 km of rivermouth _____ 15

3) Wetland is lacustrine, within 0.75 km of rivermouth _____ 10

4) Fish staging and/or migration habitat present, but not as above x 5

Score for Staging and Migration Habitat (maximum score 25 points): 5

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.3 ECOSYSTEM AGE (Fractional Area = Area of wetland type/total area of wetland)

	Fractional Area		Scoring
Bog	_____	x 25	_____
Fen, treed to open on deep soils, floating mats or marl	<u>0.2</u>	x 20	<u>4</u>
Fen, on limestone rock	_____	x 5	_____
Swamp	<u>0.8</u>	x 3	<u>2.4</u>
Marsh	_____	x 0	_____

Ecosystem Age Score (maximum 25 points): 6

4.4 GREAT LAKES COASTAL WETLANDS

Score for coastal (see text for definition) wetlands only

Choose one only

wetland <10 ha	_____	10
wetland 10-50 ha	_____	25
wetland 51-100 ha	_____	50
wetland >100 ha	_____	75

Great Lakes Coastal Wetlands Score (maximum 75 points): 0

5.0 EXTRA INFORMATION

5.1 PURPLE LOOSESTRIFE

Absent/Not seen x

Present

- 1) One location in wetland
- Two to many locations

Abundance code

- a) < 20 plants
- b) 20-99 plants
- c) 100-999 plants
- d) > 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)
- Seasonal (1 to 3 months) x
- 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
- Observed or heard on lake or river adjoining the wetland
- x not as above

Northern Ontario Wetlands Evaluation, Data and Scoring Record

INVESTIGATORS

Krista Prosser

AFFILIATION

DST Consulting engineers

DATES WETLAND VISITED

September 5, 2012

DATE THIS EVALUATION COMPLETED:

February 13, 2014

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

4

WEATHER CONDITIONS

i) at time of field work : 16°C, sunny with clouds

ii) summer conditions in general : precipitation levels were high in June and August

OTHER POTENTIALLY USEFUL INFORMATION:

An additional site visit is recommended to occur during the spring or early summer to acquire a more complete list of all aquatic vegetation species and sedges. Also to better assess open water areas and aquatic habitat.

CHECKLIST OF PLANT AND ANIMAL SPECIES RECORDED IN THE WETLAND:

attach list of all flora and fauna observed in the wetland:

* Indicate if voucher specimens or photos have been obtained, where located, etc.)

Northern Ontario Wetlands Evaluation, Data and Scoring Record

SUMMARY OF EVALUATION RESULT

Wetland WLD2

TOTAL FOR 1.0 BIOLOGICAL COMPONENT 63

TOTAL FOR 2.0 SOCIAL COMPONENT 43

TOTAL FOR 3.0 HYDROLOGICAL COMPONENT 134

TOTAL FOR 4.0 SPECIAL FEATURES COMPONENT 37

WETLAND TOTAL 277

INVESTIGATORS

Krista Prosser,

AFFILIATION

DST Consulting Engineers

DATE: February 13, 2014

Northern Ontario Wetlands Evaluation, Data and Scoring Record

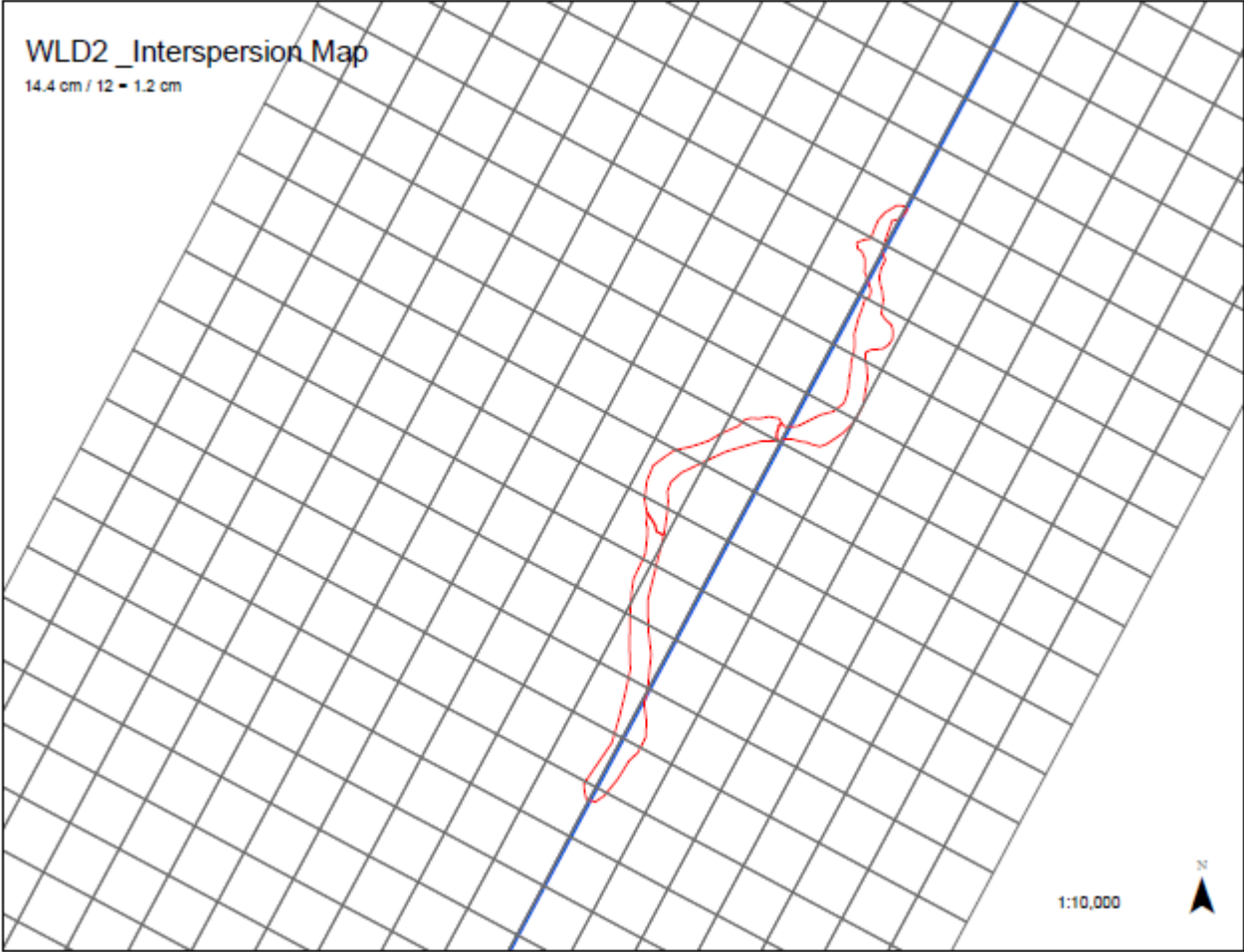
Wetland ID: wld2		Site Type: Palustrine	
Date Surveyed: September 5, 2012			
<u>BIOLOGICAL COMPONENT</u>			
Productivity		Growing Degree-Day/soils (max 30)	7
		Wetland Type (max 15)	8
		Site Type (max 5)	2
Biodiversity	=	Number of Wetland types (max 30)	13
		Vegetation Communities (max 45)	5
		Diversity of Surrounding Habitat (max 7)	7
		Proximity to other wetlands (max 8)	8
		Interspersion (max 30)	6
		Open water type (max 30)	0
		Size (max 50)	7
		Total Biological Component (not to exceed 250)	63
<u>SOCIAL COMPONENT</u>			
Economically Valuable Products		Wood products (max 14)	0
		Low Bush Cranberry (max 2)	2
		Wild rice (max 10)	0
		Commercial fish (max 12)	12
		Furbearers (max 12)	0
Recreational Activities		Hunting/Fishing/Nature (max 80)	0
		Landscape Distinctness (max 3)	3
		Absence of human disturbance (max 7)	4
		Educational Uses (max 20)	0
		Facilities and Programs (8)	0
		Research and Studies (max 12)	5
		Proximity to human settlement (max 40)	10
		Ownership (max 10)	5
		Size (max 20)	2
		Aboriginal and cultural (max 30)	0
		Total for Social Component (not to exceed 250)	43
<u>HYDROLOGICAL COMPONENT</u>			
		Flood attenuation (max 100)	35
Ground Water Recharge		Site type (20)	20
		Hydrological Soils (max 10)	7
Downstream Water Quality Improvement		Watershed Improvement (max 30)	30
		Adjacent Watershed Land Use (max 60)	4
		Vegetation form (max 10)	8
		Carbon Sink (max 15)	9
		Shoreline erosion control (max 15)	0
		Groundwater Discharge (max 30)	21
		Total for Hydrological Component (not to exceed 250)	134
<u>SPECIAL FEATURES</u>			
Rarity		Wetlands (max 70)	30
		Endangered/Threatened spp. breeding habitat (no max)	0
		Traditional use by endanger/threatend spp. (no max)	0
		Provincially significant animals (no max)	0
		Provincially significant plants (no max)	0
		Regionally significant spp. (no max)	0
		Locally significant spp. (no max)	0
		Species of Special Status (Black Duck) (max 25)	0
Significant Features and Habitats		Colonial Waterbirds (max 50)	0
		Winter Cover for Wildlife (max 100)	0
		Waterfowl Staging/Moutling (max 150)	0
		Waterfowl Breeding (max 100)	0
		Migratory Passerine, Shorebird or Raptor stopover (max 100)	0
		Ungulate Habitat (max 100)	0
		Fish Nursery Habitat (max 100)	1
		Fish Staging/Migration Habitat Present (max 25)	0
		Ecosystem Age (max 25)	6
		Great Lake Coastal Wetlands (max 75)	0
		Total for Special features (not to exceed 250)	37
TOTAL			277

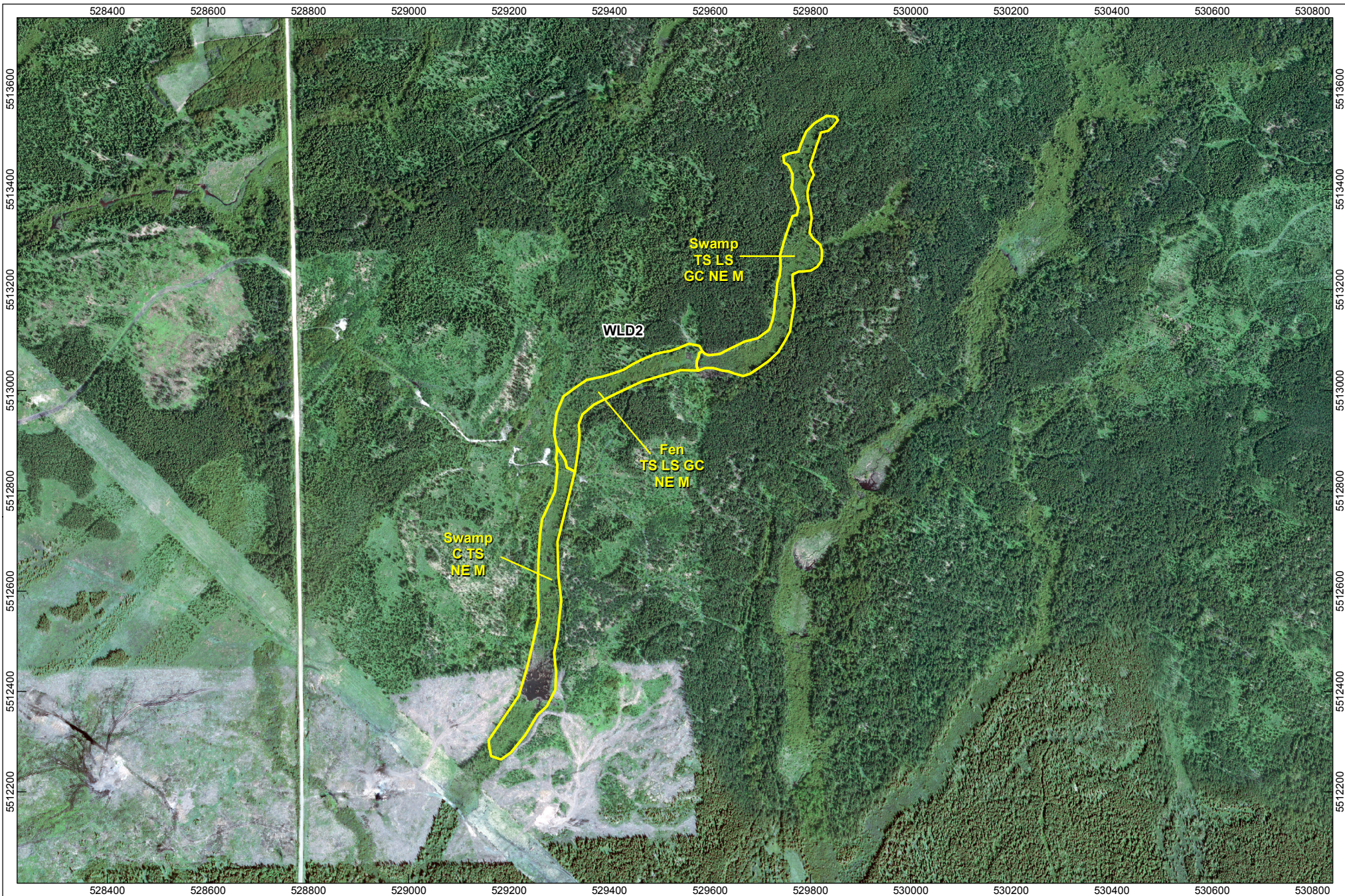
Northern Ontario Wetlands Evaluation, Data and Scoring Record

Scientific Name	Common Name
<i>Alnus incana</i>	Speckled Alder
<i>Aster nemoralis</i>	Bog aster
<i>calamagrostis canadensis</i>	Canada bluejoint
<i>Carex disperma</i>	Soft leaved sedge
<i>carex magellanica</i>	Poor sedge
<i>Carex oligosperma</i>	Few-seeded sedge
<i>Carex trisperma</i>	3 fruited sedge
<i>Carex utriculata</i>	Beaked Sedge
<i>Cornus canadensis</i>	Bunch Berry
<i>Cornus stolonifera</i>	Red-Osier dogwood
<i>Crex disperma</i>	Soft-leaved sedge
<i>Dryopteris carthusiana</i>	Spinulose wood fern
<i>Equisetum pratense</i>	Meadow horsetail
<i>Galium trifidum</i>	Small bedstraw
<i>Impatiens capensis</i>	Jewelweed
<i>Iris versicolor</i>	Northern blue flag
<i>Larix laricina</i>	Tamarack
<i>Lycopodium annotinum</i>	Stiff clubmoss
<i>Lycopus uniflorus</i>	Northern bugleweed
<i>Maianthemum trifolium</i>	Three-Leaved Solomon's Seal
<i>petasites frigidus</i>	Northern sweet coltsfoot
<i>Picea mariana</i>	Black Spruce
<i>Poa palustris</i>	Fowl blue grass
<i>Rhododendron groenlandicum</i>	Labrador Tea
<i>Rubus pubescens</i>	Dwarf raspberry
<i>Salix spp.</i>	Willow
<i>Solidago uliginosa</i>	Northern bog goldenrod
<i>Sphagnum girgensohnii</i>	Common green peat moss
<i>Sphagnum russowii</i>	Wide-tongued Peat Moss
<i>Sphagnum spp.</i>	Common Peat Moss
<i>Thuja occidentalis</i>	Eastern White Cedar
<i>Typha latifolia</i>	Common Cattail
<i>Vaccinium macrocarpon</i>	Large Cranberry
<i>Vaccinium oxycoccos</i>	Small Cranberry
<i>Vaccinium spp.</i>	Blueberry
<i>Viola spp.</i>	Viola

Wildlife Observed

Black Bear
 Northern Flicker
 Spring Peeper





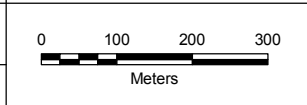
GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Vegetation Communities

Wetland - WLD2 REV.01

SCALE: 10000

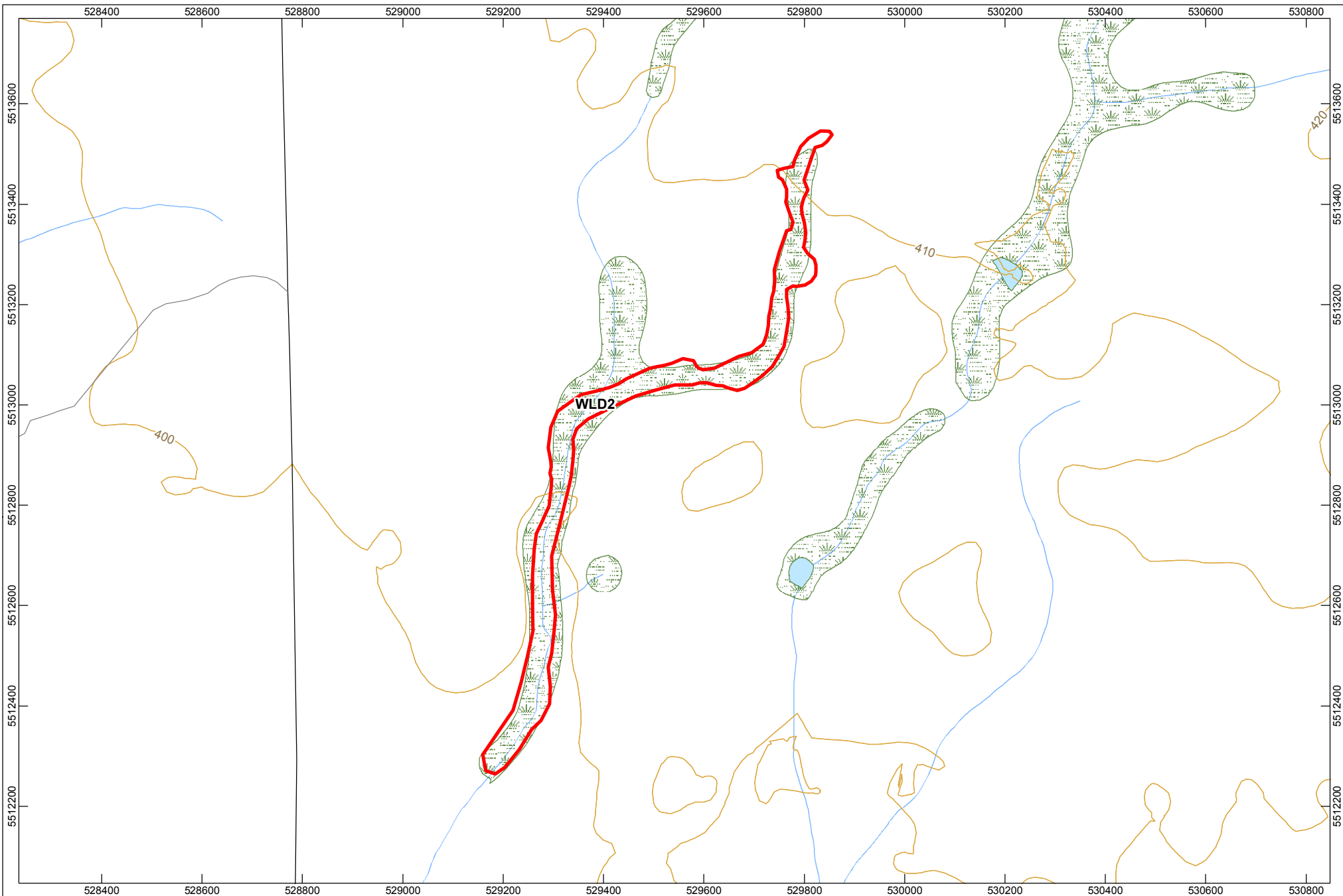
TREASURY METALS INC.



LEGEND

Vegetation Community

- C - Conifer
- GC - Herbs and Ground Cover
- LS - Low Shrubs
- M - Moss and Lichens
- NE - Narrow Leaved Emergents
- TS - Tall Shrubs



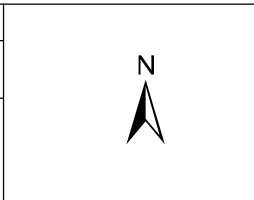
GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Wetland Boundary Map

Wetland - WLD2 REV.00

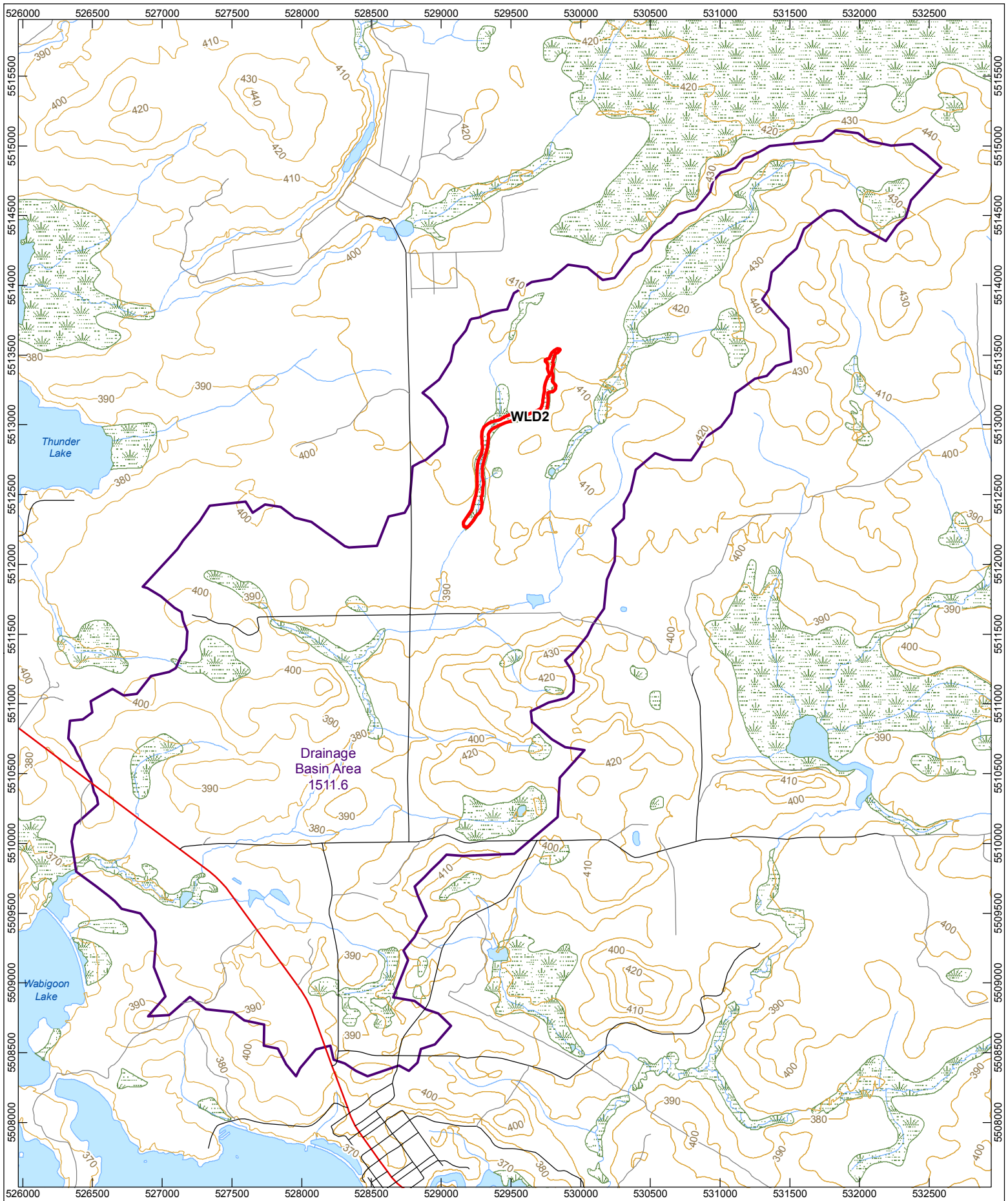
SCALE: 10000
 TREASURY METALS INC.

0 100 200 300
 Meters



LEGEND

- Expressway / Highway
- Local Roadway
- Resource / Recreational Road
- Elevation Contour
- Wetland Boundary: Ontario Wetland Evaluation System
- Waterbody
- Watercourse
- Wetland: Land Information Data Set



GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Wetland Drainage Basin Map

Wetland - WLD2 REV.00

SCALE: 35000
 TREASURY METALS INC.

0 300 600
 Meters



- Expressway / Highway
- Local Roadway
- Resource / Recreational Road
- Elevation Contour

- Wetland Boundary: Ontario
- Wetland Evaluation System
- Drainage Basin

- Wetland: Land Information Data Set
- Waterbody
- Watercourse



WETLAND DATA AND SCORING RECORD

- i) **WETLAND NAME:** WLD3
- ii) **MNR ADMINISTRATIVE REGION:** Northwest **DISTRICT:** Dryden
AREA OFFICE (if different from District): _____
- iii) **CONSERVATION AUTHORITY JURISDICTION:** N/A
(If not within a designated CA, check here:)
- iv) **COUNTY OR REGIONAL MUNICIPALITY:** N/A
- v) **TOWNSHIP:** Zealand
- vi) **LOTS & CONCESSIONS:** Lots 6 and 7, Concession 3
(attach separate sheet if necessary)
- vii) **MAP AND AIR PHOTO REFERENCES**
 - a) Latitude: 49°45'75" Longitude: -92°36'22"
 - b) UTM grid reference: Zone: 15
Grid: E 528352 N 55112911
 - c) Ontario Ministry of Natural Resources Data:
Lands Information Data
Lands Information Ontario
 - d) Digital Orthoimagery: Date photos taken: summer 2010
Supplied by: Treasury Metals Inc.
Scale of mapping: 1:5000
 - e) Ontario Base Map numbers & scale 2015520055100, 1:10,000

viii) WETLAND SIZE AND BOUNDARIES

a) Single contiguous wetland area: 7.6 hectares

b) Wetland complex comprised of ___ individual wetlands:

Wetland Unit Number (for reference)	Size of each wetland unit
Wetland Unit No. 1	_____ ha
Wetland Unit No. 2	_____ ha
Wetland Unit No. 3	_____ ha
Wetland Unit No. 4	_____ ha
Wetland Unit No. 5	_____ 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

(Attach additional sheets if necessary)

TOTAL WETLAND SIZE 7.6 ha

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

N/A

1.0 BIOLOGICAL COMPONENT

1.1 PRODUCTIVITY

1.1.1 GROWING DEGREE-DAYS/SOILS

GROWING DEGREE DAYS SOILS

(check one)	Estimated Fractional Area
_____ <1600	<u>0.10</u> clay/loam
_____ 1600-2000	_____ silt/marl
<u>x</u> _____ 2000-2400	_____ limestone
_____ 2400-2800	_____ sand
_____ 2800-3000	<u>0.90</u> humic/mesic
_____ >3000	_____ fibric
	_____ granite

SCORING:

Growing Degree Days	Clay/Loam	Silt/Marl	Lime-stone	Sand	Humic/Mesic	Fibric	Granite
<1600	12	11	9	7	7	6	4
1600-2000	15	13	11	9	8	7	5
2000-2400	18*0.10	15	13	11	9*0.90	8	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

(maximum score 30; if wetland contains more than one soil type, evaluate based on the fractional area)

Steps required for evaluation: (maximum score 30 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.

Growing Degree Days/Soils Score (maximum 30 points): 10

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.1.2 WETLAND TYPE (Fractional Area = area of wetland type/ total wetland area)

Fractional Area Score

Bog	_____	x 3 =	_____
Fen	_____	x 6 =	_____
Swamp	<u>0.90</u>	x 8 =	<u>7.2</u>
Marsh	<u>0.10</u>	x 15 =	<u>1.5</u>

Wetland Type Score (maximum 15 points): 9

1.1.3 SITE TYPE (Fractional Area = area of site type/ total wetland area)

Fractional Area Score

Isolated	_____	x 1 =	_____
Palustrine (permanent or intermittent flow)	<u>1.0</u>	x 2 =	<u>2</u>
Riverine	_____	x 4 =	_____
Riverine (at rivermouth)	_____	x 5 =	_____
Lacustrine (at rivermouth)	_____	x 5 =	_____
Lacustrine (on enclosed bay, with barrier beach)	_____	x 3 =	_____
Lacustrine (exposed to lake)	_____	x 2 =	_____

Site Type Score (maximum 5 points): 2

1.2 BIODIVERSITY

1.2.1 NUMBER OF WETLAND TYPES

(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 points): 13

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.2 VEGETATION COMMUNITIES

Attach a separate sheet listing community (map) codes, vegetation forms and dominant species. Use the form on the following page to record percent area by dominant vegetation form. This information will be used in other parts of the evaluation.

Communities should be grouped by number of forms. For example, 2 form communities might appear as follows:

2 forms

<u>Code</u>	<u>Forms</u>	<u>Dominant Species</u>
M6	re, ff	re, <i>Typha latifolia</i> ; ff, <i>Lemna minor</i> , <i>Wolffia</i>
S1	ts, gc	ts, <i>Salix discolor</i> ; gc, <i>Impatiens capensis</i> , <i>Thelypteris palustris</i>

Note that the dominant species for each form are separated by a semicolon. The dominant species (maximum of 2) within a form are separated by commas.

Scoring:

Total # of communities with 1-3 forms	Total # of communities with 4-5 forms	Total # of communities with 6 or more forms
1 = 1.5 points	1 = 2 points	1 = 3 points
2 = 2.5	2 = 3.5	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	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	+0.5 each additional community	+1 each additional community

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

$$6 + 13.5 + 15 = 34.5 = 35 \text{ points}$$

Vegetation Communities Score (maximum 45 points): (3.5) = 3

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Wetland Name: WLD3

Wetland Size (ha): 7.6

Vegetation Form % area in which form is dominant

h —

c —

dh —

dc —

ts 0.9

ls —

ds —

gc —

m —

ne 0.1

be —

re —

ff —

f —

su —

u (unvegetated) —

Total = **100%**

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.3 DIVERSITY OF SURROUNDING HABITAT

(Check all appropriate items)

<input type="checkbox"/>	recent burn (< 5yr)
<input type="checkbox"/>	abandoned agricultural land
<input checked="" type="checkbox"/>	utility corridor
<input checked="" type="checkbox"/>	deciduous forest
<input checked="" type="checkbox"/>	recent cutover or clearcut (<5 yr)
<input type="checkbox"/>	coniferous forest
<input checked="" type="checkbox"/>	mixed forest (at least 25% conifer and 75% deciduous or vice versa)
<input type="checkbox"/>	crops
<input type="checkbox"/>	abandoned pits or quarries
<input checked="" type="checkbox"/>	pasture
<input type="checkbox"/>	ravine
<input type="checkbox"/>	fence rows
<input type="checkbox"/>	open lake or deep river
<input type="checkbox"/>	creek floodplain
<input checked="" type="checkbox"/>	rock outcrop

Diversity of Surrounding Habitat Score (1 for each, maximum 7 points): 6

1.2.4 PROXIMITY TO OTHER WETLANDS

(Check first appropriate category only)

Scoring

1) <input checked="" type="checkbox"/>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river within 1.5 km	8 points
2) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
3) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river from 1.5 to 4 km away	5
4) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
5) <input type="checkbox"/>	Within 0.75 km of other wetlands (different dominant wetland type) or open lake or river, but not hydrologically connected by surface water	5
6) <input type="checkbox"/>	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
7) <input type="checkbox"/>	No wetland within 1 km	0

Proximity to other Wetlands Score (Choose one only, maximum 8 points): 8

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1.2.5 INTERSPERSION

Number of Intersections (check one)

- | | | |
|---------------|--------------|----|
| 1) 26 or less | _____ | 3 |
| 2) 27 to 40 | _____ | 6 |
| 3) 41 to 60 | <u> x </u> | 9 |
| 4) 61 to 80 | _____ | 12 |
| 5) 81 to 100 | _____ | 15 |
| 6) 101 to 125 | _____ | 18 |
| 7) 126 to 150 | _____ | 21 |
| 8) 151 to 175 | _____ | 24 |
| 9) 176 to 200 | _____ | 27 |
| 10) >200 | _____ | 30 |

Interspersion Score (Choose one only, maximum 30 points): 9
(42 intersections)

1.2.6 OPEN WATER TYPES

Permanently flooded (Check one)

- | | | |
|------------------|--------------|----|
| 1) No open water | _____ | 0 |
| 2) Type 1 | _____ | 8 |
| 3) Type 2 | _____ | 8 |
| 4) Type 3 | <u> x </u> | 14 |
| 5) Type 4 | _____ | 20 |
| 6) Type 5 | _____ | 30 |
| 7) Type 6 | _____ | 8 |
| 8) Type 7 | _____ | 14 |
| 9) Type 8 | _____ | 3 |

Open Water Score (Choose one only, maximum 30 points): 14

1.3 SIZE7.6 hectares**Size Score (Biological Component) (maximum 50 points): 9**

Table 2. Evaluation Table for Size Score (Biological Component)

Wetland size (ha)	Total Score for Biodiversity Subcomponent									
	<37	37-47	48-60	61-72	73-84	85-96	97-108	109-120	121-132	>132
<20 ha	1	5	7	8	9	17	25	34	43	50
20-40	5	7	8	9	10	19	28	37	46	50
41-60	6	8	9	10	11	21	31	40	49	50
61-80	7	9	10	11	13	23	34	43	50	50
81-100	8	10	11	13	15	25	37	46	50	50
101-120	9	11	13	15	18	28	40	49	50	50
121-140	10	13	15	17	21	31	43	50	50	50
141-160	11	15	17	19	23	34	46	50	50	50
161-180	13	17	19	21	25	37	49	50	50	50
181-200	15	19	21	23	28	40	50	50	50	50
201-400	17	21	23	25	31	43	50	50	50	50
401-600	19	23	25	28	34	46	50	50	50	50
601-800	21	25	28	31	37	49	50	50	50	50
801-1000	23	28	31	34	40	50	50	50	50	50
1001-1200	25	31	34	37	43	50	50	50	50	50
1201-1400	28	34	37	40	46	50	50	50	50	50
1401-1600	31	37	40	43	49	50	50	50	50	50
1601-1800	34	40	43	46	50	50	50	50	50	50
1801-2000	37	43	47	49	50	50	50	50	50	50
>2000	40	46	50	50	50	50	50	50	50	50

2.0 SOCIAL COMPONENT

2.1 ECONOMICALLY VALUABLE PRODUCTS

2.1.1 WOOD PRODUCTS

Area of wetland forested (ha); not wetland size

1) <5 ha	<u> x </u>	0
2) 5 – 25 ha	<u> </u>	4
3) 26 – 50 ha	<u> </u>	6
4) 51 – 100 ha	<u> </u>	8
5) 101-200 ha	<u> </u>	11
6) > 200 ha	<u> </u>	14

Source of information: Forest Resource Inventory (FRI – GIS data)

Wood Products Score (Score one only, maximum 14 points): 0

2.1.2 LOWBUSH CRANBERRY

1) Present	<u> </u>	2
2) Absent	<u> x </u>	0

Source of information: Field observation

Lowbush Cranberry Score (maximum 2 points): 0

2.1.3 WILD RICE

1) Present	<u> </u>	10
2) Absent	<u> x </u>	0

Source of information: Field observation

Wild Rice Score (maximum 10 points): 0

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

- | | | |
|------------|-------------------|----|
| 1) Present | <u> x </u> | 12 |
| 2) Absent | <u> </u> | 0 |

Source of information: Field observation

Commercial Fish Score (maximum 12 points): 12

2.1.5 FURBEARERS

(Consult Appendix 9)

	<u>Name of furbearer</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	<u>mink</u>	<u><i>Mustela vison</i></u>	<u>field observation - tracks</u>
2)	<u> </u>	<u> </u>	<u> </u>
3)	<u> </u>	<u> </u>	<u> </u>
4)	<u> </u>	<u> </u>	<u> </u>
5)	<u> </u>	<u> </u>	<u> </u>

Scoring: 3 points for each species, maximum 12

Furbearer Score (maximum 12 points): 3

2.2 RECREATIONAL ACTIVITIES

Type of Wetland-Associated Use			
Intensity of Use	Hunting	Nature Enjoyment/ Ecosystem Study	Fishing
High	40 points	40 points	40 points
Moderate	20	20	20
Low	8	8	8
Not Possible	0	0	0

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

Sources of information:

- Hunting: Field observation
- Nature: Field observation
- Fishing: Field observation

Recreational Activities Score (maximum 80 points): 0

2.3 LANDSCAPE AESTHETICS

2.3.1 DISTINCTNESS

- | | | |
|---------------------|---------------|---|
| 1) Clearly distinct | <u> x </u> | 3 |
| 2) Indistinct | <u> </u> | 0 |

Landscape Distinctness Score (maximum 3 points): 3

2.3.2 ABSENCE OF HUMAN DISTURBANCE

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

Source of information: road, landing

Absence of Human Disturbance Score (maximum 7 points): 4

2.4 EDUCATION AND PUBLIC AWARENESS

2.4.1 EDUCATIONAL USES

- | | | |
|---------------|---------------|----|
| 1) Frequent | <u> </u> | 20 |
| 2) Infrequent | <u> </u> | 12 |
| 3) No Visits | <u> x </u> | 0 |

Source of information:

Educational Uses Score (maximum 20 points): 0

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2.4.2 FACILITIES AND PROGRAMS

1) Staffed interpretation centre with shelters, trails, literature	_____	8
2) No interpretation centre or staff, but a system of self-guided trails and observation points, or brochures available	_____	4
3) Facilities such as maintained paths (e.g., wood chips) Boardwalks, boat launches, or observation towers	_____	2
4) No facilities or programs	<u> x </u>	0

Source of information: _____

Facilities and Programs Score (maximum 8 points): 0

2.4.3 RESEARCH AND STUDIES

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

Attach list of known reports by above categories

- *DST Consulting Engineers Terrestrial and Aquatic Baseline Environmental Reports 2014 (2012 data), Reference Number OE-KN-018101*

Research and Studies Score (Score is cumulative, maximum 12 points): 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	16
0.5 to 10 km from settlement	26	16	10
10 to 60 km from settlement	12	8	4
>60 km from settlement	5	2	0
>100 km from settlement	0	0	0

Name of settlement: Wabigoon Lake Ojibway Nation (WLON)

Proximity to Human Settlement Score (maximum 40 points): 10

2.6 OWNERSHIP (FA = fractional area)

Wetland in public or private ownership, held under contract or in trust for wetland protection

Fractional Area Score

_____ x 10 = _____

Wetland in public ownership, not as above

_____ x 8 = _____

Wetland in private ownership, not as above

1.0 x 4 = 4.0

Source of information: Treasury Resources Inc.

Ownership Score (maximum 10 points): 4

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2.7 SIZE (See size table -- Social Component)

7.6 hectares

Size Score (Social Component) (maximum 20 points): 2

Table 3. Evaluation Table for Size Score (Social Component)

Wetland size (ha)	Total for Size Dependent Score									
	<30	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
2-4	1	2	4	8	12	13	14	14	15	16
5-8	2	2	5	9	13	14	15	15	16	16
9-12	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	18	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	19	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	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.

2.8.1 ABORIGINAL VALUES

Full documentation of sources must be attached to the data record.

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

2.8.2 CULTURAL HERITAGE

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

Aboriginal Values/Cultural Heritage Score (maximum 30 points): ??

3.0 HYDROLOGICAL COMPONENT

3.1 FLOOD ATTENUATION

If the wetland is a complex including isolated wetlands, apportion the 100 points according to area. For example, if 10 ha of a 100 ha complex is isolated, the isolated portion receives the maximum proportional score of 10. The remainder of the wetland is then evaluated out of the remaining 90 points.

Step 1.

If wetland is entirely Isolated, go directly to Step 5.

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 5.

All other wetlands, go through steps 2, 3, 4 and 5.

Step 2.

Determination of Upstream Detention Factor (DF)

(a)	Wetland area (ha)	<u>7.6</u>
(b)	Total area (ha) of <u>upstream</u> detention areas (include the wetland itself)	<u>63.0</u>
(c)	Ratio of (a):(b)	<u>0.12</u>
(d)	Upstream detention factor: (c) x 2 = (Maximum allowable factor = 1)	<u>0.24</u>

Step 3.

Determination of Peak Flow Attenuation Factor (AF)

(a)	Wetland area (ha)	<u>7.6</u>
(b)	Size of catchment basin (ha) <u>upstream</u> of wetland (include wetland itself in catchment area)	<u>1511.6</u>
(c)	Ratio of (a):(b)	<u>0.005</u>
(d)	Wetland attenuation factor: (c) x 10 = (Maximum allowable factor = 1)	<u>0.05</u>

Step 4.

Determination of Wetland Surface Form Factor (FF)

From the list below, select the surface form which best describes the wetland.

	Factor	
Flooded with little or no aquatic vegetation	<u>x</u>	0
Flooded but with submergent, emergent or floating vegetation	<u> </u>	0.2
Flat (lawn) vegetation (typical of fens)	<u> </u>	0.5
Hummock-depression microtopography	<u> </u>	0.7
Patterned (e.g., string bog, ribbed fen)	<u> </u>	1.0

Surface Form Factor (FF) 0

(Maximum allowable factor = 1)

Step 5. Calculation of Final Score

1. Wetland is entirely Isolated 100 points
2. Wetland is lacustrine and the ratio of wetland area:lake area is <0.1 0 points
3. Wetland is riverine along the St. Mary's River 0 points
4. For all other wetlands*, calculate as follows:

(a)	Upstream Detention Factor (DF) (Step2)	0.24
(b)	Wetland Attenuation Factor (AF) (Step 3)	0.05
(c)	Surface Form Factor (FF) (Step 4)	0

$$[(DF + AF + FF)/3] \times 100^* \quad \underline{\quad 9.7 \quad}$$

* Unless wetland is a complex including isolated portions -- see above

Total Flood Attenuation Score (maximum 100 points): 10

3.2 GROUND WATER RECHARGE

3.2.1 SITE TYPE

- 1) Wetland > 50% lacustrine (by area) or located on the St. Mary's River Score = 0
- 2) Wetland not as above. Calculate final score as follows:
(FA = area of site type/total area of wetland)

<u>1.0</u>	FA of isolated or palustrine wetland	x 20 = <u>20</u>
_____	FA of riverine wetland	x 5 = _____
_____	FA of lacustrine wetland (wetland <50% lacustrine)	x 0 = _____

Site Type Score: (maximum 20 points): 20

3.2.2 SOILS

EVALUATION:

Dominant Wetland Type	Sand, loam, gravel, till	Clay, bedrock
Lacustrine or on St. Mary's River	0	0
Isolated	10	5
Palustrine	7	4
Riverine (not on St. Mary's River)	5	2

Hydrological Soil Class Score (maximum 10 points): 4

3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

3.3.1 WATERSHED IMPROVEMENT FACTOR

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

<u>Site Type</u>	<u>Improvement Factor (IF)</u>
Isolated	FA _____ x 0.5 = _____
Riverine	FA _____ x 1.0 = _____
Palustrine with no inflow	FA _____ x 0.7 = _____
Palustrine with inflows	FA <u>1.0</u> x 1.0 = <u>1.0</u>
Lacustrine on lake shoreline	FA _____ x 0.2 = _____
Lacustrine at lake inflow or outflow	FA _____ x 1.0 = _____

(1.0 x 30)

Watershed Improvement Score (IF x 30) (maximum = 30): 30

3.3.2 ADJACENT AND WATERSHED LAND USE EVALUATION:

Step 1. Determination of Maximum Initial Score

_____ Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)

_____ x _____ All other wetlands (Go through steps 2, 3, 4, and 5b)

Step 2. Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in an extensive manner.

Choose one		
> 50% of catchment basin	_____	20
20-50% of catchment basin	_____	14
< 20% of catchment basin	_____ x _____	4

Score for BLU: 4

Step 3. Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

Choose the highest only

Major corridor ¹	_____	15
Secondary corridor	_____	11
Tertiary corridor	_____	6
Temporary or abandoned	_____	3
None	_____	0

Score for LUU: 0

¹ Major, secondary and tertiary roads are those that are indicated as such on the provincial highways map. Major hydro corridors are trunk lines coming directly from a generating station. Major pipelines are trans-continental lines. Secondary corridors are regional distribution lines (i.e. multi-cable hydro corridors not emanating directly from a generating station or regional gas distribution lines). Tertiary corridors are single hydro lines or local gas distribution lines (i.e. to domestic users).

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Step 4. Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits use for local road construction), etc. Score as 'present' only if a point source land use is located less than 1 km upstream from the wetland.

a) Present	_____	15
b) Absent	<u> x </u>	0

Score for PS: 0

Step 5. Calculation of total score for Adjacent and Watershed Land Use

	Score
a) Wetland on the Great Lakes or St. Mary's River	0
b) All other wetlands, calculate as follows:	

Final Score BLU + LUU + PS: 4

3.3.3 VEGETATION FORM

Choose the category that best describes the vegetation of the wetland

Trees, shrubs or herbs (h, c, ts, ls, gc)	<u> x </u>	8
Emergents, submergents (ne, re, be, f, ff, su)	_____	10
Little or no vegetation (u)	_____	0

Dominant Vegetation Form Score (maximum 10 points): 8

3.4 CARBON SINK

Choose the category that best describes the wetland.

1) Wetland a bog or fen with > 50% organic soils	_____	15
2) Wetland has organic soils occupying 10 to 50% of the area (i.e. mainly mineral or undesignated soil, any wetland type)	_____	6
3) Marshes and swamps with >50% organic soil	<u> x </u>	9
4) Wetland with <10% organic soils	_____	0

Carbon Sink Score (maximum 15 points): 9

3.5 SHORELINE EROSION CONTROL

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.

- Step 1.**
- | | | |
|---------------|---|------------|
| <u> x </u> | Wetland entirely isolated or palustrine | Score
0 |
| <u> </u> | Any part of the wetland riverine, or lacustrine (proceed to Step 2) | |

Step 2. Choose the one characteristic that best describes the shoreline vegetation.
(See text for the definition of shoreline.)

- | | | |
|----------------------------|-------|----|
| Trees and shrubs | _____ | 15 |
| Emergent vegetation | _____ | 8 |
| Submergent vegetation | _____ | 6 |
| Other shoreline vegetation | _____ | 3 |
| No vegetation | _____ | 0 |

Shoreline Erosion Control Score (maximum 15 points): 0

3.6 GROUNDWATER DISCHARGE

(Circle the characteristics that best describe the wetland being evaluated and sum the scores.)

Category	Catchment interaction		
Wetland type	Bog = 0	Swamp/Marsh = 2	Fen = 5
Basin topography	Flat/Rolling = 0	Hilly = 2	Major relief break = 5
Wetland area:Upslope catchment area	Large (>50%) = 0	Moderate (6 - 50%) = 2	Small (<5%) = 5
Lagg development	None found = 0	Minor = 2	Extensive = 5
Seeps at wetland edge	None found = 0	1 to 3 seeps = 5	4 or more seeps = 10
Iron precipitates evident at edge	None = 0	1-3 deposits = 2	4 or more deposits = 5
Surface marl deposits	None = 0	1-3 deposits = 2	> 3 = 5
Wetland pH	Low < 4.2 = 0	Moderate 4.2-5.7 = 5	High >5.7 = 10
Catchment soil coverage	Patchy = 0	Thin (<20 cm) = 2	Thick = 5
Catchment soil permeability	Low = 0	Moderate = 2	High = 5

(Scores are cumulative, maximum score 30 points)

Groundwater Discharge Score (maximum 30 points): 18

4.0 SPECIAL FEATURES COMPONENT

4.1 RARITY

4.1.1 WETLANDS

Hills Site Region and Site District (5E only): _____

Wetland type (check one or more)

- Bog
- Fen
- Swamp
- Marsh

Evaluation Table for Scoring Rarity of Wetland Type.

Unit Number	Site Region & District	Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	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
5E-1	Thessalon	10	0	30	20
5E-2	Gore Bay	20	0	20	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tomiko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E-12	Renfrew	0	0	30	10
5-S	Lake of the Woods	10	10	20	10

Rarity of Wetland Type Score (Maximum 70 points): 30

4.1.2 SPECIES

4.1.2.1 BREEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

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

Attach documentation

Scoring

For one species	250
For each additional species	250

(Score is cumulative, no maximum score)

Breeding Habitat for Endangered or Threatened Species Score (no maximum): 0

4.1.2.2 TRADITIONAL MIGRATION OR FEEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach documentation

Scoring

For one species	150 points
For each additional species	75

(Score is cumulative, no maximum score)

Traditional Habitat for Endangered or Threatened Species Score (no maximum): 0

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4.1.2.3 PROVINCIALY SIGNIFICANT ANIMAL SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant animal species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.) (no maximum score)

Provincially Significant Animal Species Score (no maximum): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.1.2.4 PROVINCIALY SIGNIFICANT PLANT SPECIES

(Scientific names must be recorded)

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant plant species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species Score (no maximum): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.1.2.5 REGIONALLY SIGNIFICANT SPECIES (SITE REGION)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

SIGNIFICANT IN SITE REGION:

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary; Attach documentation

** Score only if there is an approved list.

No. of species significant in Site Region

One species	=	20	6 species	=	55
2 species	=	30	7 species	=	58
3 species	=	40	8 species	=	61
4 species	=	45	9 species	=	64
5 species	=	50	10 species	=	67

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

Significant Species (Site Region) Score (no maximum): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.2.1.6 LOCALLY SIGNIFICANT SPECIES (SITE DISTRICT)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Source of information: _____

Attach separate list if necessary; Attach documentation.

Scoring

No. of species significant in Site District

One species	=	10	6 species	=	41
2 species	=	17	7 species	=	43
3 species	=	24	8 species	=	45
4 species	=	31	9 species	=	47
5 species	=	38	10 species	=	49

For each significant species over 10 in the wetland, add 1 point.

Locally Significant Species (Site District) Score (no maximum): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.1.2.7 SPECIES OF SPECIAL STATUS

Black Duck

Suitable breeding habitat present and within assessment range (Figure 17)

Assessment Category		
40 - 80 Indicated Pairs/100 km sq	_____	25
20 - 40 Indicated Pairs/100 km sq	_____	20
10 - 20 Indicated Pairs/100 km sq	_____	15
5 - 10 Indicated Pairs/100 km sq	_____	10
1 - 5 Indicated Pairs/100 km sq	_____	5
Habitat not suitable	_____	0
Out of assessment range	_____	0

Black Duck Score (maximum 25 points): 0

4.2 SIGNIFICANT FEATURES AND HABITATS

4.2.1 NESTING OF COLONIAL WATERBIRDS

Status	Name of species	Source of information	Score
Currently nesting			50 points
Known to have nested within past 5 years			25
Active feeding area (great blue heron excluded)			15
None known			0

Attach documentation (nest locations, etc., if known)

Colonial Waterbirds Score (maximum 50 points): 0

4.2.2. WINTER COVER FOR WILDLIFE

(Check only highest level of significance)		<u>Score</u> (one only)
1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	25
3) Locally significant	_____	10
4) Little or poor winter cover present	<u> x </u>	0

Source of information: _____

Winter cover for Wildlife Score (maximum 100 points): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.2.3 WATERFOWL STAGING AND/OR MOULTING

(Check only highest level of significance for both staging and moulting; score is cumulative across columns, maximum 150 points)

	<u>Staging</u>	Score (one only)	<u>Moulting</u>	Score (one only)
1) Nationally significant	_____	150	_____	150
2) Provincially significant	_____	100	_____	100
3) Regionally significant	_____	50	_____	50
4) Known to occur	_____	10	_____	10
5) Not possible	_____	0	_____	0
6) Not known	<u> x </u>	0	_____	0

Source of information: _____

Waterfowl Moulting and Staging Score (maximum 150 points): 0

4.2.4 WATERFOWL BREEDING

(Check only highest level of significance)

1) Provincially significant	_____	100
2) Regionally significant	_____	50
3) Habitat suitable	<u> x </u>	10
4) Habitat not suitable	_____	0

Source of information: permanent water – ring necked duck observation

Waterfowl Breeding Score (maximum 100 points): 10

4.2.5 MIGRATORY PASSERINE, SHOREBIRD OR RAPTOR STOPOVER AREA

(check highest applicable category)

1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	10
3) Not significant	<u> x </u>	0

Source of information: _____

Passerine, Shorebird or Raptor Stopover Score (maximum 100 points): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.2.6 UNGULATE HABITAT

EVALUATION:

Score (1) + (2) + one of (3) to (6)

(1) Ungulate summer cover	_____	15
(2) Mineral licks	_____	50
(3) Moose aquatic feeding area Class 1	<u> x </u>	0
(4) Moose aquatic feeding area Class 2	_____	10
(5) Moose aquatic feeding area Class 3	_____	20
(6) Moose aquatic feeding area Class 4	_____	35

(Score is cumulative for a maximum possible score of 100)

Ungulate Habitat Score (maximum 100 points): 0

4.2.7 FISH HABITAT

4.2.7.1 Spawning and Nursery Habitat

Table 5. Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5 - 4.9	0.2
5.0 - 9.9	0.4
10.0 - 14.9	0.6
15.0 - 19.9	0.8
20.0+ ha	1.0

Step 1:

_____ Fish habitat is not present within the wetland (Score = 0)

 x Fish habitat is present within the wetland (Go to Step 2)

Step 2: Choose only one option

1) _____ Significance of the spawning and nursery habitat within the wetland is known
(Go to Step3)

2) x **Significance of the spawning and nursery habitat within the wetland is not known (Go through Steps 4, 5, 6, and 7)**

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Step 3: Select the highest appropriate category below, attach documentation:

- 1) Significant in Site Region _____ 100
- 2) Significant in Site District _____ 50
- 3) Locally Significant Habitat (5.0+ ha) _____ 25
- 3) Locally Significant Habitat (<5.0 ha) _____ 15

Score for Spawning and Nursery Habitat (maximum score 100 points): 0

Step 4: Proceed to Steps 4 to 7 only if Step 3 was not scored

(**Low Marsh:** marsh area from the existing water line out to the outer boundary of the wetland)

- _____ Low marsh not present (Continue to Step 5)
- x Low marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community. Check the appropriate Vegetation Group (see Appendix 16) for each Low Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass				6	
2	Shortgrass-Sedge	x	0.1	0.1	11	1.1
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
5	Duckweed				2	
6	Smartweed-Waterwillow				6	
7	Waterlily-Lotus				11	
8	Waterweed-Watercress				9	
9	Ribbongrass				10	
10	Coontail-Naiad-Watermilfoil				13	
11	Narrowleaf Pondweed				5	
12	Broadleaf Pondweed					
Total Score (maximum 75 points)						

Step 5: High Marsh: area from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.

_____ High marsh not present (Continue to Step 6)
 x High marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community. Check the appropriate Vegetation Group for each High Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass	x	0.7	0.1	6	0.6
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
Total Score (maximum 25 points)						0.6

Step 6: Swamp: Swamp communities containing fish habitat, either seasonally or permanently. Determine the total area of seasonally flooded swamps and permanently flooded swamps containing fish habitat.

_____ Swamp containing fish habitat not present (Continue to Step 7)
 x Swamp containing fish habitat present (Score as follows)

Swamp containing fish habitat	Present (check)	Total area (ha)	Area Factor (see Table 5)	Score	TOTAL SCORE (factor x score)
seasonally flooded	x	0.7	0.2	10	2
permanently flooded				10	
SCORE (maximum 20 points)					2

Step 7: Calculation of final score

Score for Spawning and Nursery Habitat (Low Marsh) (maximum 75 points)	<u>1.1</u>
Score for Spawning and Nursery Habitat (High Marsh) (maximum 25 points)	<u>0.6</u>
Score for Swamp Containing Fish Habitat (maximum 20 points)	<u>2</u>

Sum (maximum score 100 points): 4

4.2.7.2 Migration and Staging Habitat**Step 1:**

- 1) Staging or Migration Habitat is not present in the wetland x (Score = 0)
- 2) Staging or Migration Habitat is present in the wetland, significance of the habitat is known
(Go to Step 2)
- 3) Staging or Migration Habitat is present in the wetland, significance of the habitat is not known
(Go to Step 3)

Only one of Step 2 or Step 3 is to be scored.

Step 2: Select the highest appropriate category below, attach documentation:

- 1) Significant in Site Region 25
- 2) Significant in Site District 15
- 3) Locally Significant 10
- 4) Fish staging and/or migration habitat present, but not as above 5

Score for Fish Migration and Staging Habitat (maximum score 25 points): 0

Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to be the dominant site type). Note name of river for 2) and 3).

- 1) Wetland is riverine at rivermouth or lacustrine at rivermouth 25
- 2) Wetland is riverine, within 0.75 km of rivermouth 15
- 3) Wetland is lacustrine, within 0.75 km of rivermouth 10
- 4) Fish staging and/or migration habitat present, but not as above 5

Score for Staging and Migration Habitat (maximum score 25 points): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.3 ECOSYSTEM AGE (Fractional Area = Area of wetland type/total area of wetland)

	Fractional Area		Scoring
Bog	_____	x 25	_____
Fen, treed to open on deep soils, floating mats or marl	_____	x 20	_____
Fen, on limestone rock	_____	x 5	_____
Swamp	<u>0.9</u>	x 3	_____
Marsh	<u>0.1</u>	x 0	_____

Ecosystem Age Score (maximum 25 points): 10

4.4 GREAT LAKES COASTAL WETLANDS

Score for coastal (see text for definition) wetlands only

Choose one only

wetland <10 ha	_____	10
wetland 10-50 ha	_____	25
wetland 51-100 ha	_____	50
wetland >100 ha	_____	75

Great Lakes Coastal Wetlands Score (maximum 75 points): 0

5.0 EXTRA INFORMATION

5.1 PURPLE LOOSESTRIFE

Absent/Not seen x

Present

- 1) One location in wetland
- Two to many locations

Abundance code

- a) < 20 plants
- b) 20-99 plants
- c) 100-999 plants
- d) > 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)
- Seasonal (1 to 3 months)
- Semi-permanent (>3 months) x
- No seasonal flooding

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
- Observed or heard on lake or river adjoining the wetland
- x not as above

Northern Ontario Wetlands Evaluation, Data and Scoring Record

INVESTIGATORS

Krista Prosser

AFFILIATION

DST Consulting engineers

DATES WETLAND VISITED

September 4, 2012

DATE THIS EVALUATION COMPLETED:

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

4

WEATHER CONDITIONS

i) at time of field work :18°C, overcast

ii) summer conditions in general : precipitation levels were high in June and August

OTHER POTENTIALLY USEFUL INFORMATION:

An additional site visit is recommended to occur during the spring or early summer to acquire a more complete list of all aquatic vegetation species and sedges. Also to better assess open water areas and aquatic habitat.

CHECKLIST OF PLANT AND ANIMAL SPECIES RECORDED IN THE WETLAND:

attach list of all flora and fauna observed in the wetland:

* Indicate if voucher specimens or photos have been obtained, where located, etc.)

Northern Ontario Wetlands Evaluation, Data and Scoring Record

SUMMARY OF EVALUATION RESULT

Wetland WLD3

TOTAL FOR 1.0 BIOLOGICAL COMPONENT 83

TOTAL FOR 2.0 SOCIAL COMPONENT 43

TOTAL FOR 3.0 HYDROLOGICAL COMPONENT 103

TOTAL FOR 4.0 SPECIAL FEATURES COMPONENT 74

WETLAND TOTAL 303

INVESTIGATORS

Krista Prosser

AFFILIATION

DST Consulting Engineers

DATE: March 28, 2013

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Wetland ID: wld3		Site Type: Palustrine		
Date Surveyed: September 4, 2012				
BIOLOGICAL COMPONENT				
Productivity		Growing Degree-Day/soils (max 30)	10	
	=	Wetland Type (max 15)	9	
		Site Type (max 5)	2	
Biodiversity		Number of Wetland types (max 30)	13	
		Vegetation Communities (max 45)	3	
		Diversity of Surrounding Habitat (max 7)	6	
		Proximity to other wetlands (max 8)	8	
		Interspersion (max 30)	9	
		Open water type (max 30)	14	
		Size (max 50)	9	
	Total Biological Component (not to exceed 250)		83	
SOCIAL COMPONENT				
Economically Valuable Products		Wood products (max 14)	0	
		Low Bush Cranberry (max 2)	0	
		Wild rice (max 10)	0	
		Commercial fish (max 12)	12	
		Furbearers (max 12)	3	
Recreational Activities		Hunting/Fishing/Nature (max 80)	0	
		Landscape Distinctness (max 3)	3	
		Absence of human disturbance (max 7)	4	
		Educational Uses (max 20)	0	
		Facilities and Programs (8)	0	
		Research and Studies (max 12)	5	
		Proximity to human settlement (max 40)	10	
		Ownership (max 10)	4	
		Size (max 20)	2	
		Aboriginal and cultural (max 30)	0	
	Total for Social Component (not to exceed 250)		43	
HYDROLOGICAL COMPONENT				
Ground Water Recharge		Flood attenuation (max 100)	10	
		Site type (20)	20	
		Hydrological Soils (max 10)	4	
Downstream Water Quality Improvement		Watershed Improvement (max 30)	30	
		Adjacent Watershed Land Use (max 60)	4	
		Vegetation form (max 10)	8	
		Carbon Sink (max 15)	9	
		Shoreline erosion control (max 15)	0	
		Groundwater Discharge (max 30)	18	
	Total for Hydrological Component (not to exceed 250)		103	
SPECIAL FEATURES				
Rarity		Wetlands (max 70)	30	
		Endangered/Threatened spp. breeding habitat (no max)	0	
		Traditional use by endanger/threatend spp. (no max)	0	
		Provincially significant animals (no max)	0	
		Provincially significant plants (no max)	0	
		Regionally significant spp. (no max)	0	
		Locally significant spp. (no max)	0	
		Species of Special Status (Black Duck) (max 25)	0	
	Significant Features and Habitats		Colonial Waterbirds (max 50)	0
			Winter Cover for Wildlife (max 100)	0
		Waterfowl Staging/Moultling (max 150)	0	
		Waterfowl Breeding (max 100)	10	
		Migratory Passerine, Shorebird or Raptor stopover (max 100)	0	
		Ungulate Habitat (max 100)	0	
		Fish Nursery Habitat (max 100)	4	
		Fish Staging/Migration Habitat Present (max 25)	0	
		Ecosystem Age (max 25)	30	
		Great Lake Coastal Wetlands (max 75)	0	
	Total for Special features (not to exceed 250)		74	
TOTAL			303	

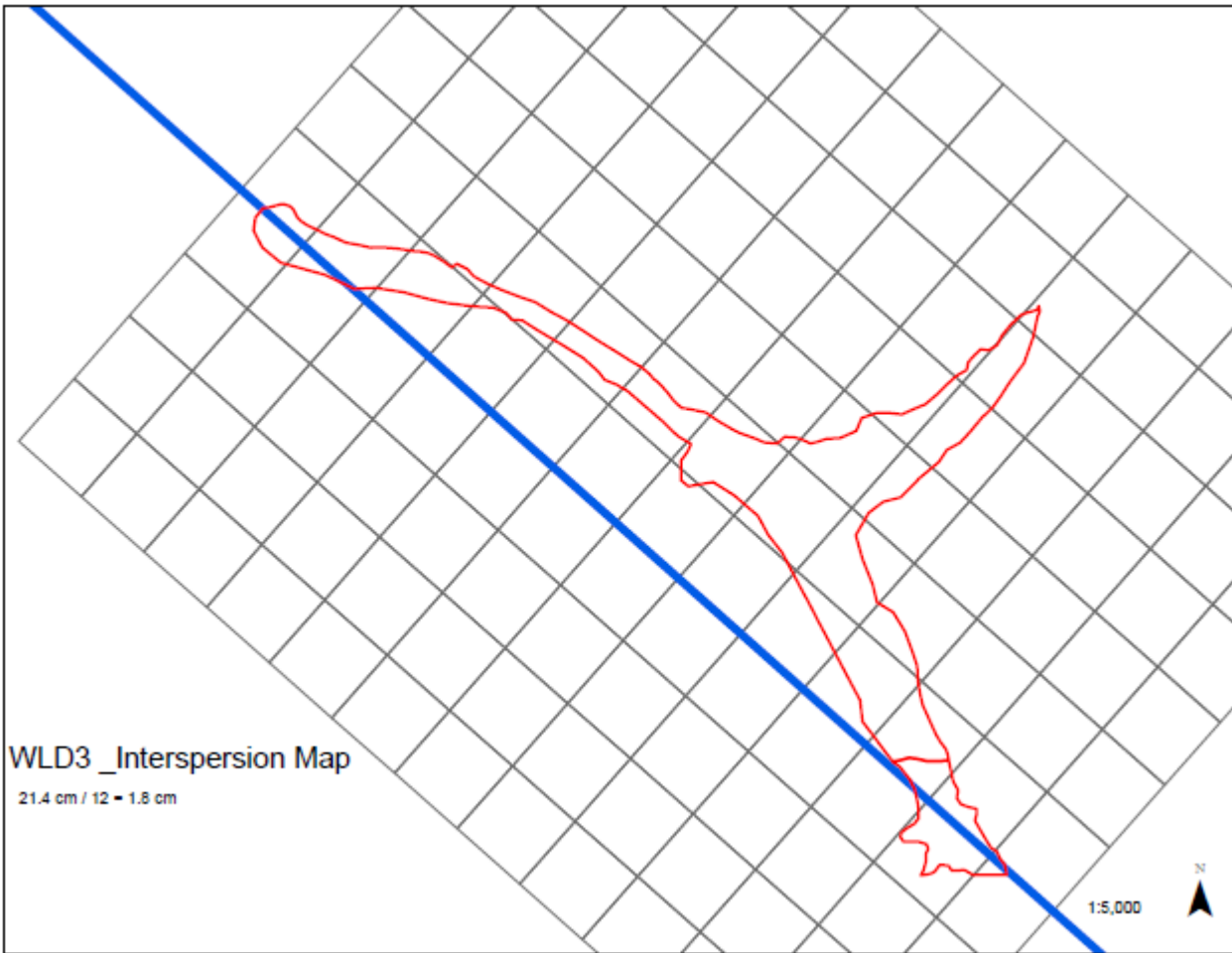
Northern Ontario Wetlands Evaluation, Data and Scoring Record

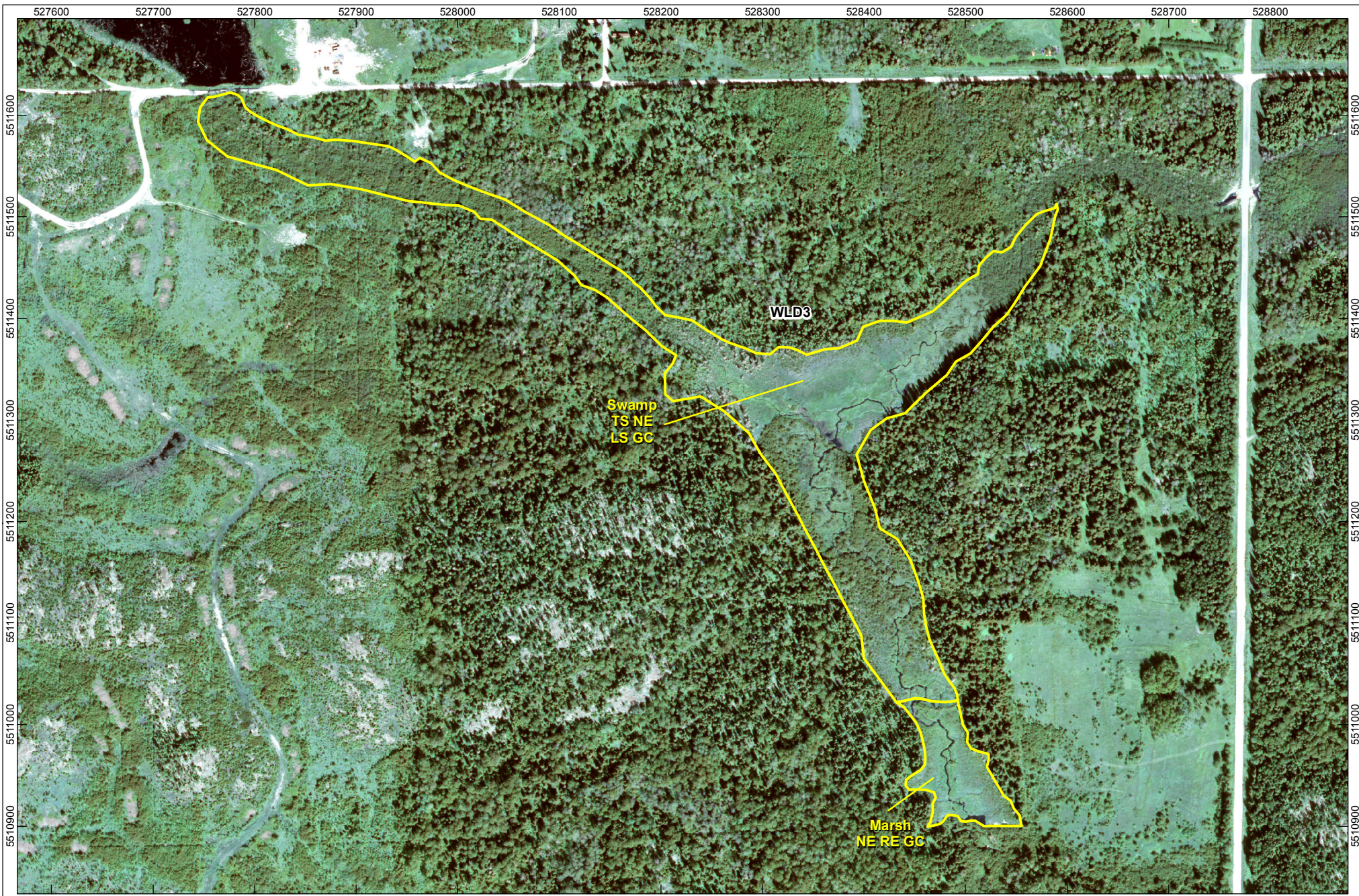
Scientific Name	Common Name
<i>Abies balsamea</i>	Balsam fir
<i>Agrostis scabra</i>	Tickle grass
<i>Alisma plantago-aquatica</i>	Water plantain - <25%
<i>Alnus incana</i>	Speckled Alder
<i>Aster borealis</i>	Rush aster
<i>Aster lanceolatus</i>	Lance-leaved aster
<i>Aster puniceus</i>	Purple stemmed aster
<i>Aster spp.</i>	Aster
<i>Athyrium filix-femina</i>	Lady fern
<i>biden cernua</i>	Nodding bur-marigold
<i>Bidens frondosa</i>	Devil's Beggar-ticks
<i>Calamagrostis canadensis</i>	Canada Bluejoint
<i>Carex utriculata</i>	Beaked Sedge
<i>Cirsium multicum</i>	Swamp thistle
<i>Climacium dendroides</i>	Tree moss
<i>Cornus stolonifera</i>	Red-Osier dogwood
<i>Dicranum undulatum</i>	Wavy moss
<i>Galium triflorum</i>	Fragrant bedstraw
<i>Glyceria borealis</i>	Northern mann grass
<i>Glyceria grandis</i>	Tall manna grass
<i>Gymnocarpium dryopteris</i>	Oak fern
<i>Impatiens capensis</i>	Jewelweed
<i>Juncus tenuis</i>	Canada rush
<i>Myriophyllum sibiricum</i>	Northern Water Milfoil - <25%
<i>Poa palustris</i>	Fowl blue grass
<i>Potamogeton pusillus</i>	Slender pondweed - <25%
<i>Ribes spp.</i>	Currant
<i>Rubus pubescens</i>	Dwarf raspberry
<i>Scirpus cyperinus</i>	Wool grass
<i>Solidago uliginosa</i>	Northern bog goldenrod
<i>Sparganium emersum</i>	Common burreed
<i>Sparganium eurycarpum</i>	Large-Fruited Burreed
<i>Viburnum opulus</i>	Highbush cranberry
<i>Viola spp.</i>	Viola






Wildlife Observed

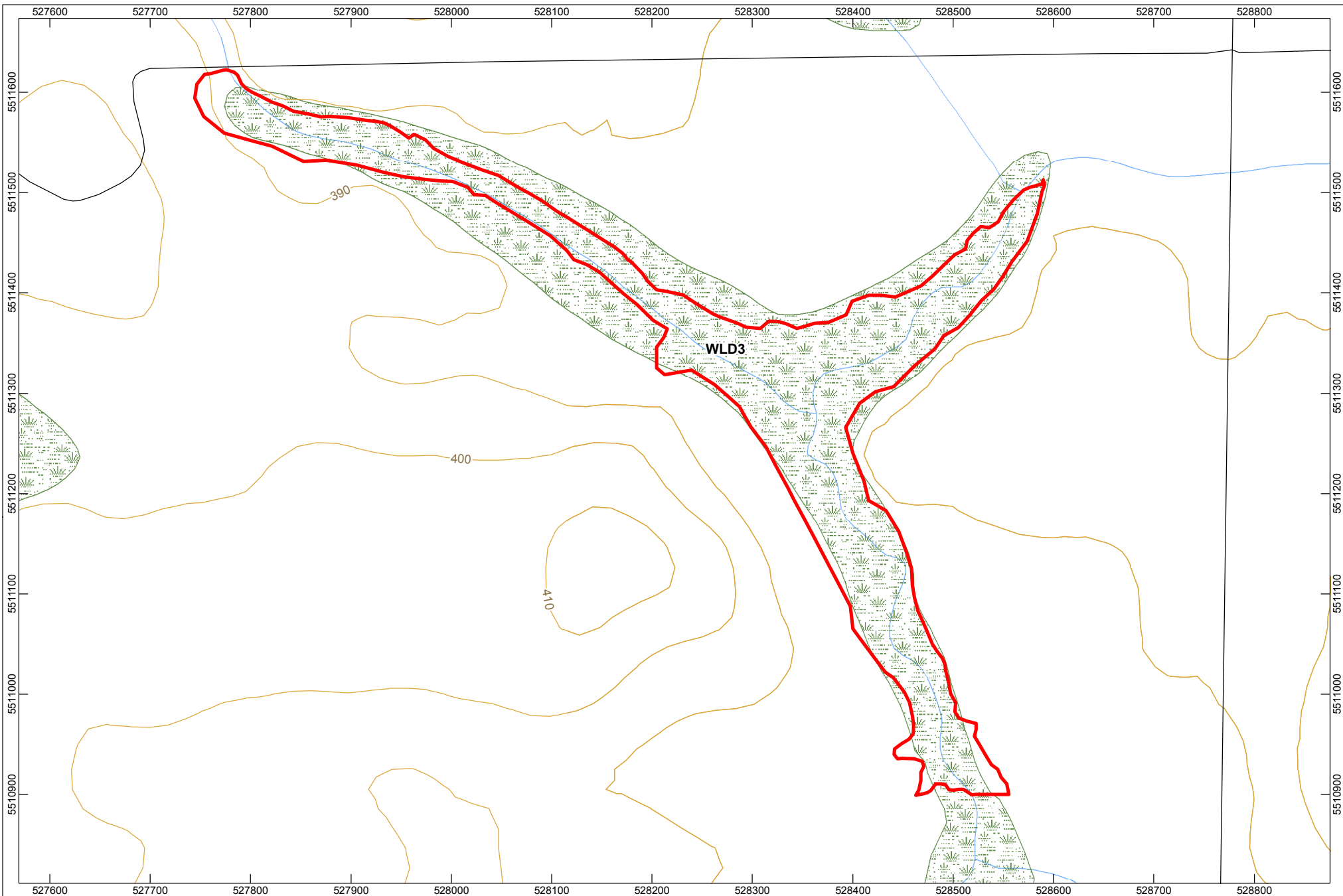
Piliated Woodpecker
 White-winged Crossbill
 Red Breasted Nuthatch
 Black Cappd Chickadee
 Leopard Frog
 American Crow
 Beaver Evidence

* Ring-necked Duck observed in July





GOLIATH GOLD PROJECT DRYDEN, ONTARIO, CANADA		SCALE: 5000 TREASURY METALS INC.		LEGEND  Vegetation Community	GC - Herbs and Ground Cover LS - Low Shrubs NE - Narrow Leaved Emergents RE - Robust Emergents TS - Tall Shrubs	 
Vegetation Communities						
Wetland - WLD3	REV.01					



GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Wetland Boundary Map

Wetland - WLD3 REV.00

SCALE: 5000

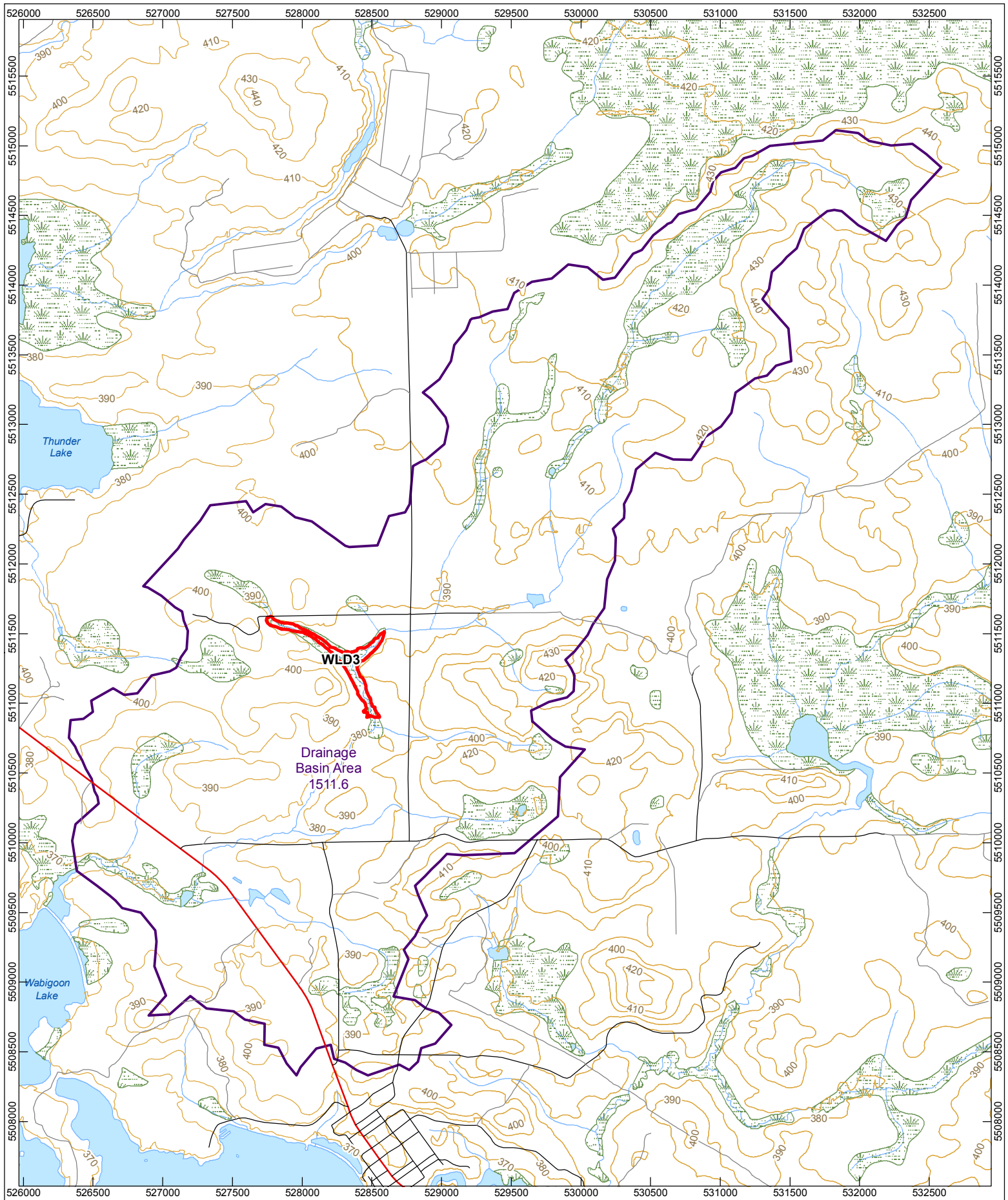
TREASURY METALS INC.

0 50 100 150
 Meters



- LEGEND**
- Expressway / Highway
 - Local Roadway
 - Resource / Recreational Road
 - Elevation Contour
 - Wetland Boundary: Ontario Wetland Evaluation System
 - Wetland: Land Information Data Set
 - Waterbody
 - Watercourse





GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Wetland Drainage Basin Map

Wetland - WLD3 REV.00

SCALE: 35000
 TREASURY METALS INC.

0 300 600
 Meters



- Expressway / Highway
- Local Roadway
- Resource / Recreational Road
- Elevation Contour

- Wetland Boundary: Ontario
- Wetland Evaluation System
- Drainage Basin

- Wetland: Land Information Data Set
- Waterbody
- Watercourse



viii) WETLAND SIZE AND BOUNDARIES

a) Single contiguous wetland area: 5.8 hectares

b) Wetland complex comprised of ___ individual wetlands:

Wetland Unit Number (for reference)	Size of each wetland unit
Wetland Unit No. 1	_____ ha
Wetland Unit No. 2	_____ ha
Wetland Unit No. 3	_____ ha
Wetland Unit No. 4	_____ ha
Wetland Unit No. 5	_____ 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

(Attach additional sheets if necessary)

TOTAL WETLAND SIZE 5.8 ha

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

N/A

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 Fractional Area
_____ <1600	_____ clay/loam
_____ 1600-2000	_____ silt/marl
<u> x </u> 2000-2400	_____ limestone
_____ 2400-2800	_____ sand
_____ 2800-3000	_____ humic/mesic
_____ >3000	<u> 1.0 </u> fibric
	_____ granite

SCORING:

Growing Degree Days	Clay/Loam	Silt/Marl	Lime-stone	Sand	Humic/Mesic	Fibric	Granite
<1600	12	11	9	7	7	6	4
1600-2000	15	13	11	9	8	7	5
2000-2400	18	15	13	11	9	8*1.0	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

(maximum score 30; if wetland contains more than one soil type, evaluate based on the fractional area)

Steps required for evaluation: (maximum score 30 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.

Growing Degree Days/Soils Score (maximum 30 points): 8

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.1.2 WETLAND TYPE (Fractional Area = area of wetland type/ total wetland area)

Fractional Area Score

Bog	_____	x 3 =	_____
Fen	_____	x 6 =	_____
Swamp	<u>0.3</u>	x 8 =	<u>2.4</u>
Marsh	<u>0.7</u>	x 15 =	<u>10.5</u>

Wetland Type Score (maximum 15 points): 13

1.1.3 SITE TYPE (Fractional Area = area of site type/ total wetland area)

Fractional Area Score

Isolated	_____	x 1 =	_____
Palustrine (permanent or Intermittent flow)	<u>1.0</u>	x 2 =	<u>2</u>
Riverine	_____	x 4 =	_____
Riverine (at rivermouth)	_____	x 5 =	_____
Lacustrine (at rivermouth)	_____	x 5 =	_____
Lacustrine (on enclosed bay, with barrier beach)	_____	x 3 =	_____
Lacustrine (exposed to lake)	_____	x 2 =	_____

Site Type Score (maximum 5 points): 2

1.2 BIODIVERSITY

1.2.1 NUMBER OF WETLAND TYPES

(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 points): 13

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1.2.2 VEGETATION COMMUNITIES

Attach a separate sheet listing community (map) codes, vegetation forms and dominant species. Use the form on the following page to record percent area by dominant vegetation form. This information will be used in other parts of the evaluation.

Communities should be grouped by number of forms. For example, 2 form communities might appear as follows:

2 forms

<u>Code</u>	<u>Forms</u>	<u>Dominant Species</u>
M6	re, ff	re, <i>Typha latifolia</i> ; ff, <i>Lemna minor</i> , <i>Wolffia</i>
S1	ts, gc	ts, <i>Salix discolor</i> ; gc, <i>Impatiens capensis</i> , <i>Thelypteris palustris</i>

Note that the dominant species for each form are separated by a semicolon. The dominant species (maximum of 2) within a form are separated by commas.

Scoring:

Total # of communities with 1-3 forms	Total # of communities with 4-5 forms	Total # of communities with 6 or more forms
1 = 1.5 points	1 = 2 points	1 = 3 points
2 = 2.5	2 = 3.5	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	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	+0.5 each additional community	+1 each additional community

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

$$6 + 13.5 + 15 = 34.5 = 35 \text{ points}$$

Vegetation Communities Score (maximum 45 points): 5

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Wetland Name: WLD4

Wetland Size (ha): 7.1

Vegetation Form % area in which form is dominant

h —

c —

dh —

dc —

ts 0.2

ls —

ds —

gc —

m —

ne —

be —

re 1.0

ff —

f —

su —

u (unvegetated) —

Total = **100%**

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1.2.3 DIVERSITY OF SURROUNDING HABITAT

(Check all appropriate items)

<input type="checkbox"/>	recent burn (< 5yr)
<input type="checkbox"/>	abandoned agricultural land
<input checked="" type="checkbox"/>	utility corridor
<input checked="" type="checkbox"/>	deciduous forest
<input checked="" type="checkbox"/>	recent cutover or clearcut (<5 yr)
<input checked="" type="checkbox"/>	coniferous forest
<input checked="" type="checkbox"/>	mixed forest (at least 25% conifer and 75% deciduous or vice versa)
<input type="checkbox"/>	crops
<input type="checkbox"/>	abandoned pits or quarries
<input checked="" type="checkbox"/>	pasture
<input type="checkbox"/>	ravine
<input type="checkbox"/>	fence rows
<input checked="" type="checkbox"/>	open lake or deep river
<input type="checkbox"/>	creek floodplain
<input checked="" type="checkbox"/>	rock outcrop

Diversity of Surrounding Habitat Score (1 for each, maximum 7 points): 7

1.2.4 PROXIMITY TO OTHER WETLANDS

(Check first appropriate category only)

Scoring

1) <input checked="" type="checkbox"/>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river within 1.5 km	8 points
2) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
3) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river from 1.5 to 4 km away	5
4) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
5) <input type="checkbox"/>	Within 0.75 km of other wetlands (different dominant wetland type) or open lake or river, but not hydrologically connected by surface water	5
6) <input type="checkbox"/>	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
7) <input type="checkbox"/>	No wetland within 1 km	0

Proximity to other Wetlands Score (Choose one only, maximum 8 points): 8

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1.2.5 INTERSPERSION

Number of Intersections (check one)

- | | | |
|---------------|--------------|----|
| 1) 26 or less | _____ | 3 |
| 2) 27 to 40 | _____ | 6 |
| 3) 41 to 60 | _____ | 9 |
| 4) 61 to 80 | <u> x </u> | 12 |
| 5) 81 to 100 | _____ | 15 |
| 6) 101 to 125 | _____ | 18 |
| 7) 126 to 150 | _____ | 21 |
| 8) 151 to 175 | _____ | 24 |
| 9) 176 to 200 | _____ | 27 |
| 10) >200 | _____ | 30 |

Interspersion Score (Choose one only, maximum 30 points):
(62 intersections)

1.2.6 OPEN WATER TYPES

Permanently flooded (Check one)

- | | | |
|------------------|--------------|----|
| 1) No open water | _____ | 0 |
| 2) Type 1 | _____ | 8 |
| 3) Type 2 | _____ | 8 |
| 4) Type 3 | _____ | 14 |
| 5) Type 4 | <u> x </u> | 20 |
| 6) Type 5 | _____ | 30 |
| 7) Type 6 | _____ | 8 |
| 8) Type 7 | _____ | 14 |
| 9) Type 8 | _____ | 3 |

Open Water Score (Choose one only, maximum 30 points): 20

1.3 SIZE

5.2 hectares

Size Score (Biological Component) (maximum 50 points): 17

Table 2. Evaluation Table for Size Score (Biological Component)

Wetland size (ha)	Total Score for Biodiversity Subcomponent									
	<37	37-47	48-60	61-72	73-84	85-96	97-108	109-120	121-132	>132
<20 ha	1	5	7	8	9	17	25	34	43	50
20-40	5	7	8	9	10	19	28	37	46	50
41-60	6	8	9	10	11	21	31	40	49	50
61-80	7	9	10	11	13	23	34	43	50	50
81-100	8	10	11	13	15	25	37	46	50	50
101-120	9	11	13	15	18	28	40	49	50	50
121-140	10	13	15	17	21	31	43	50	50	50
141-160	11	15	17	19	23	34	46	50	50	50
161-180	13	17	19	21	25	37	49	50	50	50
181-200	15	19	21	23	28	40	50	50	50	50
201-400	17	21	23	25	31	43	50	50	50	50
401-600	19	23	25	28	34	46	50	50	50	50
601-800	21	25	28	31	37	49	50	50	50	50
801-1000	23	28	31	34	40	50	50	50	50	50
1001-1200	25	31	34	37	43	50	50	50	50	50
1201-1400	28	34	37	40	46	50	50	50	50	50
1401-1600	31	37	40	43	49	50	50	50	50	50
1601-1800	34	40	43	46	50	50	50	50	50	50
1801-2000	37	43	47	49	50	50	50	50	50	50
>2000	40	46	50	50	50	50	50	50	50	50

2.0 SOCIAL COMPONENT

2.1 ECONOMICALLY VALUABLE PRODUCTS

2.1.1 WOOD PRODUCTS

Area of wetland forested (ha); not wetland size

1) <5 ha	<u> x </u>	0
2) 5 – 25 ha	<u> </u>	4
3) 26 – 50 ha	<u> </u>	6
4) 51 – 100 ha	<u> </u>	8
5) 101-200 ha	<u> </u>	11
6) > 200 ha	<u> </u>	14

Source of information: Forest Resource Inventory (FRI – GIS data)

Wood Products Score (Score one only, maximum 14 points): 0

2.1.2 LOWBUSH CRANBERRY

1) Present	<u> </u>	2
2) Absent	<u> x </u>	0

Source of information: Field observation

Lowbush Cranberry Score (maximum 2 points): 0

2.1.3 WILD RICE

1) Present	<u> </u>	10
2) Absent	<u> x </u>	0

Source of information: Field observation

Wild Rice Score (maximum 10 points): 0

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

- | | | |
|------------|-------------------|----|
| 1) Present | <u> x </u> | 12 |
| 2) Absent | <u> </u> | 0 |

Source of information: Field observation

Commercial Fish Score (maximum 12 points): 12

2.1.5 FURBEARERS

(Consult Appendix 9)

	<u>Name of furbearer</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	<u>beaver</u>	<u><i>Castor canadensis</i></u>	<u>old lodge and dam</u>
2)	<u> </u>	<u> </u>	<u> </u>
3)	<u> </u>	<u> </u>	<u> </u>
4)	<u> </u>	<u> </u>	<u> </u>
5)	<u> </u>	<u> </u>	<u> </u>

Scoring: 3 points for each species, maximum 12

Furbearer Score (maximum 12 points): 3

2.2 RECREATIONAL ACTIVITIES

Type of Wetland-Associated Use			
Intensity of Use	Hunting	Nature Enjoyment/ Ecosystem Study	Fishing
High	40 points	40 points	40 points
Moderate	20	20	20
Low	8	8	8
Not Possible	0	0	0

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

Sources of information:

- Hunting: Field observation
- Nature: Field observation
- Fishing: Field observation

Recreational Activities Score (maximum 80 points): 0

2.3 LANDSCAPE AESTHETICS

2.3.1 DISTINCTNESS

- | | | |
|---------------------|---------------|---|
| 1) Clearly distinct | <u> x </u> | 3 |
| 2) Indistinct | <u> </u> | 0 |

Landscape Distinctness Score (maximum 3 points): 3

2.3.2 ABSENCE OF HUMAN DISTURBANCE

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

Source of information: Field observation-road, fuelwood operation

Absence of Human Disturbance Score (maximum 7 points): 4

2.4 EDUCATION AND PUBLIC AWARENESS

2.4.1 EDUCATIONAL USES

- | | | |
|---------------|---------------|----|
| 1) Frequent | <u> </u> | 20 |
| 2) Infrequent | <u> </u> | 12 |
| 3) No Visits | <u> x </u> | 0 |

Source of information: _____

Educational Uses Score (maximum 20 points): 0

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2.4.2 FACILITIES AND PROGRAMS

1) Staffed interpretation centre with shelters, trails, literature	_____	8
2) No interpretation centre or staff, but a system of self-guided trails and observation points, or brochures available	_____	4
3) Facilities such as maintained paths (e.g., wood chips) Boardwalks, boat launches, or observation towers	_____	2
4) No facilities or programs	<u> x </u>	0

Source of information: _____

Facilities and Programs Score (maximum 8 points): 0

2.4.3 RESEARCH AND STUDIES

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

Attach list of known reports by above categories:

- *DST Consulting Engineers Terrestrial and Aquatic Baseline Environmental Reports 2014 (2012 data), Reference Number OE-KN-018101*

Research and Studies Score (Score is cumulative, maximum 12 points): 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	16
0.5 to 10 km from settlement	26	16	10
10 to 60 km from settlement	12	8	4
>60 km from settlement	5	2	0
>100 km from settlement	0	0	0

Name of settlement: Wabigoon Lake Ojibway Nation (WLON)

Proximity to Human Settlement Score (maximum 40 points): 10

2.6 OWNERSHIP (FA = fractional area)

Wetland in public or private ownership, held under contract or in trust for wetland protection

Fractional Area Score

_____ x 10 = _____

Wetland in public ownership, not as above

1.0 x 8 = 8.0

Wetland in private ownership, not as above

_____ x 4 = _____

Source of information: Treasury Resources Inc.

Ownership Score (maximum 10 points): 8

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2.7 SIZE (See size table -- Social Component)

7.1 hectares

Size Score (Social Component) (maximum 20 points): 2

Table 3. Evaluation Table for Size Score (Social Component)

Wetland size (ha)	Total for Size Dependent Score									
	<30	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
2-4	1	2	4	8	12	13	14	14	15	16
5-8	2	2	5	9	13	14	15	15	16	16
9-12	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	18	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	19	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	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.

2.8.1 ABORIGINAL VALUES

Full documentation of sources must be attached to the data record.

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

2.8.2 CULTURAL HERITAGE

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

Aboriginal Values/Cultural Heritage Score (maximum 30 points): 0

3.0 HYDROLOGICAL COMPONENT

3.1 FLOOD ATTENUATION

If the wetland is a complex including isolated wetlands, apportion the 100 points according to area. For example, if 10 ha of a 100 ha complex is isolated, the isolated portion receives the maximum proportional score of 10. The remainder of the wetland is then evaluated out of the remaining 90 points.

Step 1.

If wetland is entirely Isolated, go directly to Step 5.

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 5.

All other wetlands, go through steps 2, 3, 4 and 5.

Step 2.

Determination of Upstream Detention Factor (DF)

(a)	Wetland area (ha)	<u>5.2</u>
(b)	Total area (ha) of <u>upstream</u> detention areas (include the wetland itself)	<u>57.8</u>
(c)	Ratio of (a):(b)	<u>0.09</u>
(d)	Upstream detention factor: (c) x 2 = (Maximum allowable factor = 1)	<u>0.18</u>

Step 3.

Determination of Peak Flow Attenuation Factor (AF)

(a)	Wetland area (ha)	<u>5.2</u>
(b)	Size of catchment basin (ha) <u>upstream</u> of wetland (include wetland itself in catchment area)	<u>1511.6</u>
(c)	Ratio of (a):(b)	<u>0.003</u>
(d)	Wetland attenuation factor: (c) x 10 = (Maximum allowable factor = 1)	<u>0.03</u>

Step 4.

Determination of Wetland Surface Form Factor (FF)

From the list below, select the surface form which best describes the wetland.

	Factor	
Flooded with little or no aquatic vegetation	_____	0
Flooded but with submergent, emergent or floating vegetation	<u>x</u>	0.2
Flat (lawn) vegetation (typical of fens)	_____	0.5
Hummock-depression microtopography	_____	0.7
Patterned (e.g., string bog, ribbed fen)	_____	1.0
Surface Form Factor (FF)		<u>0.2</u>

(Maximum allowable factor = 1)

Step 5. Calculation of Final Score

- 1. Wetland is entirely Isolated 100 points
- 2. Wetland is lacustrine and the ratio of wetland area:lake area is <0.1 0 points
- 3. Wetland is riverine along the St. Mary's River 0 points
- 4. For all other wetlands*, calculate as follows:
 - (a) Upstream Detention Factor (DF) (Step2) 0.18
 - (b) Wetland Attenuation Factor (AF) (Step 3) 0.03
 - (c) Surface Form Factor (FF) (Step 4) 0.2

$[(DF + AF + FF)/3] \times 100^*$ 8.3

* Unless wetland is a complex including isolated portions -- see above

Total Flood Attenuation Score (maximum 100 points): 14

3.2 GROUND WATER RECHARGE

3.2.1 SITE TYPE

- 1) Wetland > 50% lacustrine (by area) or located on the St. Mary's River Score = 0
- 2) Wetland not as above. Calculate final score as follows:
(FA = area of site type/total area of wetland)

<u>1.0</u>	FA of isolated or palustrine wetland	x 20 = <u>20</u>
<u> </u>	FA of riverine wetland	x 5 = <u> </u>
<u> </u>	FA of lacustrine wetland (wetland <50% lacustrine)	x 0 = <u> </u>

Site Type Score: (maximum 20 points): 20

3.2.2 SOILS

EVALUATION:

Dominant Wetland Type	Sand, loam, gravel, till	Clay, bedrock
Lacustrine or on St. Mary's River	0	0
Isolated	10	5
Palustrine	7	4
Riverine (not on St. Mary's River)	5	2

Hydrological Soil Class Score (maximum 10 points): 4

3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

3.3.1 WATERSHED IMPROVEMENT FACTOR

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

<u>Site Type</u>	<u>Improvement Factor (IF)</u>
Isolated	FA _____ x 0.5 = _____
Riverine	FA _____ x 1.0 = _____
Palustrine with no inflow	FA _____ x 0.7 = _____
Palustrine with inflows	FA <u>1.0</u> x 1.0 = <u>1.0</u>
Lacustrine on lake shoreline	FA _____ x 0.2 = _____
Lacustrine at lake inflow or outflow	FA _____ x 1.0 = _____

(1.0 x 30)

Watershed Improvement Score (IF x 30) (maximum = 30): 30

3.3.2 ADJACENT AND WATERSHED LAND USE EVALUATION:

Step 1. Determination of Maximum Initial Score

_____ Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)

_____ x _____ All other wetlands (Go through steps 2, 3, 4, and 5b)

Step 2. Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in an extensive manner.

Choose one		
> 50% of catchment basin	_____	20
20-50% of catchment basin	_____	14
< 20% of catchment basin	_____ x _____	4

Score for BLU: 4

Step 3. Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

Choose the highest only

Major corridor ¹	_____	15
Secondary corridor	_____	11
Tertiary corridor	_____	6
Temporary or abandoned	_____	3
None	_____ x _____	0

Score for LUU: 0

¹ Major, secondary and tertiary roads are those that are indicated as such on the provincial highways map. Major hydro corridors are trunk lines coming directly from a generating station. Major pipelines are trans-continental lines. Secondary corridors are regional distribution lines (i.e. multi-cable hydro corridors not emanating directly from a generating station or regional gas distribution lines). Tertiary corridors are single hydro lines or local gas distribution lines (i.e. to domestic users).

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Step 4. Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits use for local road construction), etc. Score as 'present' only if a point source land use is located less than 1 km upstream from the wetland.

a) Present	_____	15
b) Absent	_____ x _____	0

Score for PS: 0

Step 5. Calculation of total score for Adjacent and Watershed Land Use

	Score
a) Wetland on the Great Lakes or St. Mary's River	0
b) All other wetlands, calculate as follows:	

Final Score BLU + LUU + PS: 4

3.3.3 VEGETATION FORM

Choose the category that best describes the vegetation of the wetland

Trees, shrubs or herbs (h, c, ts, ls, gc)	_____	8
Emergents, submergents (ne, re, be, f, ff, su)	_____ x _____	10
Little or no vegetation (u)	_____	0

Dominant Vegetation Form Score (maximum 10 points): 10

3.4 CARBON SINK

Choose the category that best describes the wetland.

1) Wetland a bog or fen with > 50% organic soils	_____	15
2) Wetland has organic soils occupying 10 to 50% of the area (i.e. mainly mineral or undesignated soil, any wetland type)	_____	6
3) Marshes and swamps with >50% organic soil	_____ x _____	9
4) Wetland with <10% organic soils	_____	0

Carbon Sink Score (maximum 15 points): 9

3.5 SHORELINE EROSION CONTROL

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.

- Step 1.
- | | |
|---|------------|
| <u> x </u> Wetland entirely isolated or palustrine | Score
0 |
| <u> </u> Any part of the wetland riverine, or lacustrine (proceed to Step 2) | |

Step 2. Choose the one characteristic that best describes the shoreline vegetation.
(See text for the definition of shoreline.)

- | | | |
|----------------------------|---------------|----|
| Trees and shrubs | <u> </u> | 15 |
| Emergent vegetation | <u> </u> | 8 |
| Submergent vegetation | <u> </u> | 6 |
| Other shoreline vegetation | <u> </u> | 3 |
| No vegetation | <u> </u> | 0 |

Shoreline Erosion Control Score (maximum 15 points): 0

3.6 GROUNDWATER DISCHARGE

(Circle the characteristics that best describe the wetland being evaluated and sum the scores.)

Category	Catchment interaction		
Wetland type	Bog = 0	Swamp/Marsh = 2	Fen = 5
Basin topography	Flat/Rolling = 0	Hilly = 2	Major relief break = 5
Wetland area:Upslope catchment area	Large (>50%) = 0	Moderate (6 - 50%) = 2	Small (<5%) = 5
Lagg development	None found = 0	Minor = 2	Extensive = 5
Seeps at wetland edge	None found = 0	1 to 3 seeps = 5	4 or more seeps = 10
Iron precipitates evident at edge	None = 0	1-3 deposits = 2	4 or more deposits = 5
Surface marl deposits	None = 0	1-3 deposits = 2	> 3 = 5
Wetland pH	Low < 4.2 = 0	Moderate 4.2-5.7 = 5	High >5.7 = 10
Catchment soil coverage	Patchy = 0	Thin (<20 cm) = 2	Thick = 5
Catchment soil permeability	Low = 0	Moderate = 2	High = 5

(Scores are cumulative, maximum score 30 points)

Groundwater Discharge Score (maximum 30 points): 17

4.0 SPECIAL FEATURES COMPONENT

4.1 RARITY

4.1.1 WETLANDS

Hills Site Region and Site District (5E only): _____

Wetland type (check one or more)

- Bog
- Fen
- Swamp
- Marsh

Evaluation Table for Scoring Rarity of Wetland Type.

Unit Number	Site Region & District	Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	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
5E-1	Thessalon	10	0	30	20
5E-2	Gore Bay	20	0	20	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tomiko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E-12	Renfrew	0	0	30	10
5-S	Lake of the Woods	10	10	20	10

Rarity of Wetland Type Score (Maximum 70 points): 30

4.1.2 SPECIES

4.1.2.1 BREEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

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

Attach documentation

Scoring

For one species	250
For each additional species	250

(Score is cumulative, no maximum score)

Breeding Habitat for Endangered or Threatened Species Score (no maximum): 0

4.1.2.2 TRADITIONAL MIGRATION OR FEEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach documentation

Scoring

For one species	150 points
For each additional species	75

(Score is cumulative, no maximum score)

Traditional Habitat for Endangered or Threatened Species Score (no maximum): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.1.2.3 PROVINCIALY SIGNIFICANT ANIMAL SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	<u>Little Brown Bat</u>	<u><i>Myotis lucifugus</i></u>	<u>bat monitor -recording</u>
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant animal species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.) (no maximum score)

Provincially Significant Animal Species Score (no maximum): 50

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.1.2.4 PROVINCIALY SIGNIFICANT PLANT SPECIES

(Scientific names must be recorded)

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant plant species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species Score (no maximum): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.1.2.5 REGIONALLY SIGNIFICANT SPECIES (SITE REGION)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

SIGNIFICANT IN SITE REGION:

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary; Attach documentation

** Score only if there is an approved list.

No. of species significant in Site Region

One species	=	20	6 species	=	55
2 species	=	30	7 species	=	58
3 species	=	40	8 species	=	61
4 species	=	45	9 species	=	64
5 species	=	50	10 species	=	67

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

Significant Species (Site Region) Score (no maximum): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.2.1.6 LOCALLY SIGNIFICANT SPECIES (SITE DISTRICT)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Source of information: _____

Attach separate list if necessary; Attach documentation.

Scoring

No. of species significant in Site District

One species	=	10	6 species	=	41
2 species	=	17	7 species	=	43
3 species	=	24	8 species	=	45
4 species	=	31	9 species	=	47
5 species	=	38	10 species	=	49

For each significant species over 10 in the wetland, add 1 point.

Locally Significant Species (Site District) Score (no maximum): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.1.2.7 SPECIES OF SPECIAL STATUS

Black Duck

Suitable breeding habitat present and within assessment range (Figure 17)

Assessment Category		
40 - 80 Indicated Pairs/100 km sq	_____	25
20 - 40 Indicated Pairs/100 km sq	_____	20
10 - 20 Indicated Pairs/100 km sq	_____	15
5 - 10 Indicated Pairs/100 km sq	<u> x </u>	10
1 - 5 Indicated Pairs/100 km sq	_____	5
Habitat not suitable	_____	0
Out of assessment range	_____	0

Black Duck Score (maximum 25 points): 10

4.2 SIGNIFICANT FEATURES AND HABITATS

4.2.1 NESTING OF COLONIAL WATERBIRDS

Status	Name of species	Source of information	Score
Currently nesting			50 points
Known to have nested within past 5 years			25
Active feeding area (great blue heron excluded)			15
None known			0

Attach documentation (nest locations, etc., if known)

Colonial Waterbirds Score (maximum 50 points): 0

4.2.2. WINTER COVER FOR WILDLIFE

(Check only highest level of significance)		<u>Score</u> (one only)
1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	25
3) Locally significant	_____	10
4) Little or poor winter cover present	<u> x </u>	0

Source of information: _____

Winter cover for Wildlife Score (maximum 100 points): 0

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4.2.3 WATERFOWL STAGING AND/OR MOULTING

(Check only highest level of significance for both staging and moulting; score is cumulative across columns, maximum 150 points)

	<u>Staging</u>	Score (one only)	<u>Moulting</u>	Score (one only)
1) Nationally significant	_____	150	_____	150
2) Provincially significant	_____	100	_____	100
3) Regionally significant	_____	50	_____	50
4) Known to occur	_____	10	_____	10
5) Not possible	_____	0	_____	0
6) Not known	<u> x </u>	0	_____	0

Source of information: _____

Waterfowl Moulting and Staging Score (maximum 150 points): 0

4.2.4 WATERFOWL BREEDING

(Check only highest level of significance)

1) Provincially significant	_____	100
2) Regionally significant	_____	50
3) Habitat suitable	<u> x </u>	10
4) Habitat not suitable	_____	0

Source of information: _____

Waterfowl Breeding Score (maximum 100 points): 10

4.2.5 MIGRATORY PASSERINE, SHOREBIRD OR RAPTOR STOPOVER AREA

(check highest applicable category)

1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	10
3) Not significant	<u> x </u>	0

Source of information: _____

Passerine, Shorebird or Raptor Stopover Score (maximum 100 points): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.2.6 UNGULATE HABITAT

EVALUATION:

Score (1) + (2) + <u>one</u> of (3) to (6)		
(1) Ungulate summer cover	_____	15
(2) Mineral licks	_____	50
(3) Moose aquatic feeding area Class 1	<u> x </u>	0
(4) Moose aquatic feeding area Class 2	_____	10
(5) Moose aquatic feeding area Class 3	_____	20
(6) Moose aquatic feeding area Class 4	_____	35

(Score is cumulative for a maximum possible score of 100)

Ungulate Habitat Score (maximum 100 points): 0

4.2.7 FISH HABITAT

4.2.7.1 Spawning and Nursery Habitat

Table 5. Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5 - 4.9	0.2
5.0 - 9.9	0.4
10.0 - 14.9	0.6
15.0 - 19.9	0.8
20.0+ ha	1.0

Step 1:

_____ Fish habitat is not present within the wetland (Score = 0)

 x Fish habitat is present within the wetland (Go to Step 2)

Step 2: Choose only one option

1) _____ Significance of the spawning and nursery habitat within the wetland is known
(Go to Step3)

2) x **Significance of the spawning and nursery habitat within the wetland is not known (Go through Steps 4, 5, 6, and 7)**

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Step 3: Select the highest appropriate category below, attach documentation:

- 1) Significant in Site Region _____ 100
- 2) Significant in Site District _____ 50
- 3) Locally Significant Habitat (5.0+ ha) _____ 25
- 3) Locally Significant Habitat (<5.0 ha) _____ 15

Score for Spawning and Nursery Habitat (maximum score 100 points): 0

Step 4: Proceed to Steps 4 to 7 only if Step 3 was not scored

(**Low Marsh:** marsh area from the existing water line out to the outer boundary of the wetland)

- _____ Low marsh not present (Continue to Step 5)
- x Low marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community. Check the appropriate Vegetation Group (see Appendix 16) for each Low Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass				6	
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed	x	1.9	0.2	5	1.0
4	Arrowhead-Pickerelweed				5	
5	Duckweed				2	
6	Smartweed-Waterwillow				6	
7	Waterlily-Lotus				11	
8	Waterweed-Watercress				9	
9	Ribbongrass				10	
10	Coontail-Naiad-Watermilfoil				13	
11	Narrowleaf Pondweed				5	
12	Broadleaf Pondweed					
Total Score (maximum 75 points)						1.0

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Step 5: High Marsh: area from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.

 High marsh not present (Continue to Step 6)
 x High marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community. Check the appropriate Vegetation Group for each High Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass				6	
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed	x	1.7	0.2	5	1.0
4	Arrowhead-Pickerelweed				5	
Total Score (maximum 25 points)						1.0

Step 6: Swamp: Swamp communities containing fish habitat, either seasonally or permanently. Determine the total area of seasonally flooded swamps and permanently flooded swamps containing fish habitat.

 x Swamp containing fish habitat not present (Continue to Step 7)
 Swamp containing fish habitat present (Score as follows)

Swamp containing fish habitat	Present (check)	Total area (ha)	Area Factor (see Table 5)	Score	TOTAL SCORE (factor x score)
seasonally flooded				10	
permanently flooded				10	
SCORE (maximum 20 points)					

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Step 7: Calculation of final score

Score for Spawning and Nursery Habitat (Low Marsh) (maximum 75 points) 1

Score for Spawning and Nursery Habitat (High Marsh) (maximum 25 points) 1

Score for Swamp Containing Fish Habitat (maximum 20 points) 0

Sum (maximum score 100 points): 2

4.2.7.2 Migration and Staging Habitat

Step 1:

1) Staging or Migration Habitat is not present in the wetland x (Score = 0)

2) Staging or Migration Habitat is present in the wetland, significance of the habitat is known _____
(Go to Step 2)

3) Staging or Migration Habitat is present in the wetland, significance of the habitat is not known _____
(Go to Step 3)

Only one of Step 2 or Step 3 is to be scored.

Step 2: Select the highest appropriate category below, attach documentation:

1) Significant in Site Region _____ 25

2) Significant in Site District _____ 15

3) Locally Significant _____ 10

4) Fish staging and/or migration habitat present, but not as above _____ 5

Score for Fish Migration and Staging Habitat (maximum score 25 points): 0

Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to be the dominant site type). Note name of river for 2) and 3).

1) Wetland is riverine at rivermouth or lacustrine at rivermouth _____ 25

2) Wetland is riverine, within 0.75 km of rivermouth _____ 15

3) Wetland is lacustrine, within 0.75 km of rivermouth _____ 10

4) Fish staging and/or migration habitat present, but not as above _____ 5

Score for Staging and Migration Habitat (maximum score 25 points): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

4.3 ECOSYSTEM AGE (Fractional Area = Area of wetland type/total area of wetland)

	Fractional Area		Scoring
Bog	_____	x 25	_____
Fen, treed to open on deep soils, floating mats or marl	_____	x 20	_____
Fen, on limestone rock	_____	x 5	_____
Swamp	<u>0.3</u>	x 3	<u>0.9</u>
Marsh	<u>0.7</u>	x 0	<u>0</u>

Ecosystem Age Score (maximum 25 points): 1

4.4 GREAT LAKES COASTAL WETLANDS

Score for coastal (see text for definition) wetlands only

Choose one only

wetland <10 ha	_____	10
wetland 10-50 ha	_____	25
wetland 51-100 ha	_____	50
wetland >100 ha	_____	75

Great Lakes Coastal Wetlands Score (maximum 75 points): 0

5.0 EXTRA INFORMATION

5.1 PURPLE LOOSESTRIFE

Absent/Not seen x

Present

- 1) One location in wetland
- Two to many locations

Abundance code

- a) < 20 plants
- b) 20-99 plants
- c) 100-999 plants
- d) > 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)
- Seasonal (1 to 3 months) x
- Semi-permanent (>3 months)
- No seasonal flooding

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
- Observed or heard on lake or river adjoining the wetland
- x not as above

Northern Ontario Wetlands Evaluation, Data and Scoring Record

INVESTIGATORS

Krista Prosser

AFFILIATION

DST Consulting engineers

DATES WETLAND VISITED

September 4, 2012

DATE THIS EVALUATION COMPLETED:

February 12, 2013

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

4

WEATHER CONDITIONS

i) at time of field work :18°C, overcast

ii) summer conditions in general : precipitation levels were high in June and August

OTHER POTENTIALLY USEFUL INFORMATION:

An additional site visit is recommended to occur during the spring or early summer to acquire a more complete list of all aquatic vegetation species and sedges. Also to better assess open water areas and aquatic habitat.

CHECKLIST OF PLANT AND ANIMAL SPECIES RECORDED IN THE WETLAND:

attach list of all flora and fauna observed in the wetland:

* Indicate if voucher specimens or photos have been obtained, where located, etc.)

Northern Ontario Wetlands Evaluation, Data and Scoring Record

SUMMARY OF EVALUATION RESULT

Wetland WLD4

TOTAL FOR 1.0 BIOLOGICAL COMPONENT 106

TOTAL FOR 2.0 SOCIAL COMPONENT 47

TOTAL FOR 3.0 HYDROLOGICAL COMPONENT 108

TOTAL FOR 4.0 SPECIAL FEATURES COMPONENT 103

WETLAND TOTAL 364

INVESTIGATORS

Krista Prosser

AFFILIATION

DST Consulting Engineers

DATE: February 14, 2013

Northern Ontario Wetlands Evaluation, Data and Scoring Record

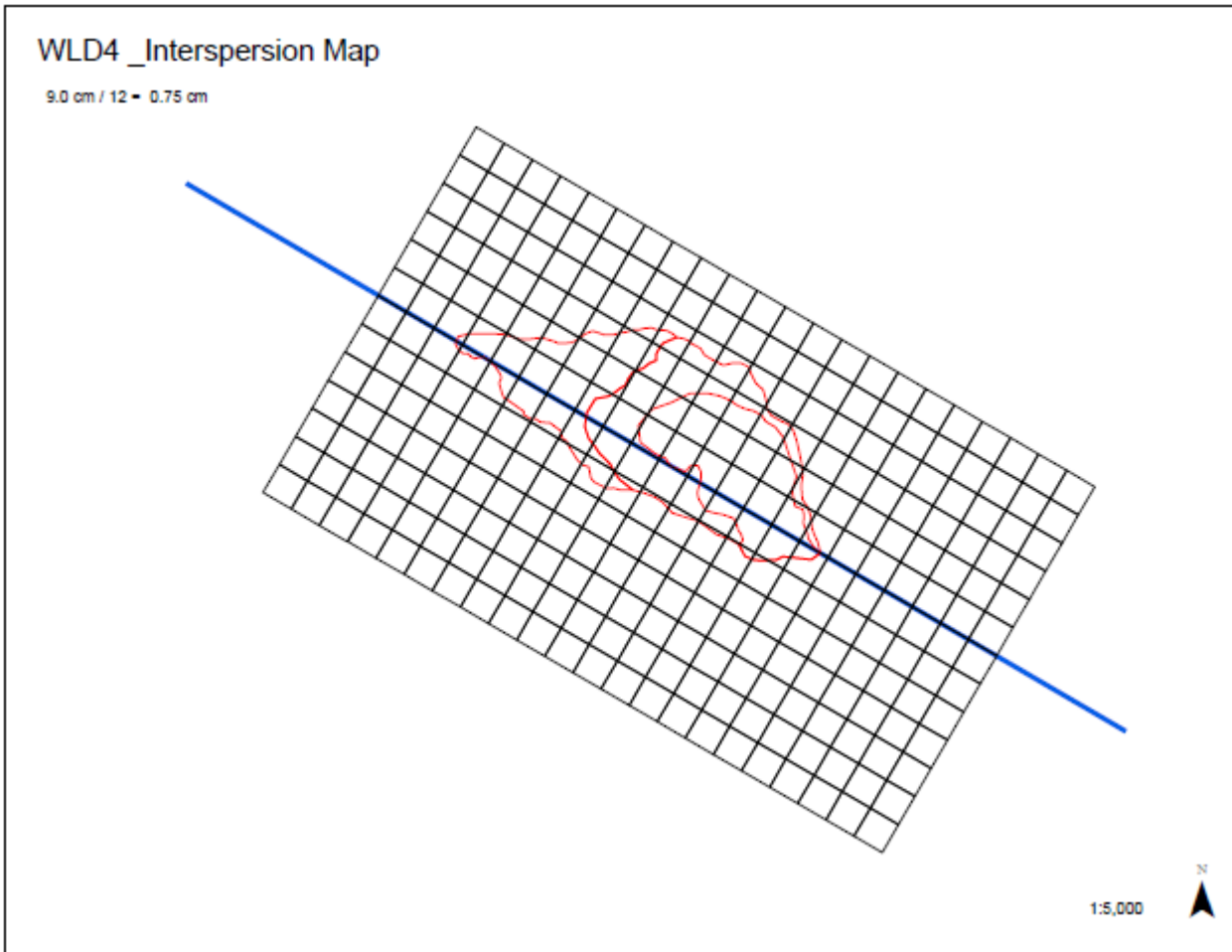
Wetland ID: wid4	Site Type: Palustrine		
Date Surveyed: September 4, 2012			
<u>BIOLOGICAL COMPONENT</u>			
Productivity	Growing Degree-Day/soils (max 30)	9	
	Wetland Type (max 15)	13	
Biodiversity	Site Type (max 5)	2	
	Number of Wetland types (max 30)	13	
	Vegetation Communities (max 45)	5	
	Diversity of Surrounding Habitat (max 7)	7	
	Proximity to other wetlands (max 8)	8	
	Interspersion (max 30)	12	
	Open water type (max 30)	20	
	Size (max 50)	17	
Total Biological Component (not to exceed 250)		106	
<u>SOCIAL COMPONENT</u>			
Economically Valuable Products	Wood products (max 14)	0	
	Low Bush Cranberry (max 2)	0	
	Wild rice (max 10)	0	
	Commercial fish (max 12)	12	
	Furbearers (max 12)	3	
Recreational Activities	Hunting/Fishing/Nature (max 80)	0	
	Landscape Distinctness (max 3)	3	
	Absence of human disturbance (max 7)	4	
	Educational Uses (max 20)	0	
	Facilities and Programs (8)	0	
	Research and Studies (max 12)	5	
	Proximity to human settlement (max 40)	10	
	Ownership (max 10)	8	
	Size (max 20)	2	
	Aboriginal and cultural (max 30)	0	
Total for Social Component (not to exceed 250)		47	
<u>HYDROLOGICAL COMPONENT</u>			
Ground Water Recharge	Flood attenuation (max 100)	14	
	Site type (20)	20	
	Hydrological Soils (max 10)	4	
Downstream Water Quality Improvement	Watershed Improvement (max 30)	30	
	Adjacent Watershed Land Use (max 60)	4	
	Vegetation form (max 10)	10	
	Carbon Sink (max 15)	9	
	Shoreline erosion control (max 15)	0	
	Groundwater Discharge (max 30)	17	
Total for Hydrological Component (not to exceed 250)		108	
<u>SPECIAL FEATURES</u>			
Rarity	Wetlands (max 70)	30	
	Endangered/Threatened spp. breeding habitat (no max)	0	
	Traditional use by endanger/threatend spp. (no max)	0	
	Provincially significant animals (no max)	50	
	Provincially significant plants (no max)	0	
	Regionally significant spp. (no max)	0	
	Locally significant spp. (no max)	0	
	Species of Special Status (Black Duck) (max 25)	10	
	Significant Features and Habitats	Colonial Waterbirds (max 50)	0
		Winter Cover for Wildlife (max 100)	0
Waterfowl Staging/Moutling (max 150)		0	
Waterfowl Breeding (max 100)		10	
Migratory Passerine, Shorebird or Raptor stopover (max 100)		0	
Ungulate Habitat (max 100)		0	
Fish Nursery Habitat (max 100)		1	
Fish Staging/Migration Habitat Present (max 25)		1	
Ecosystem Age (max 25)		1	
Great Lake Coastal Wetlands (max 75)		0	
Total for Special features (not to exceed 250)		103	
TOTAL		364	

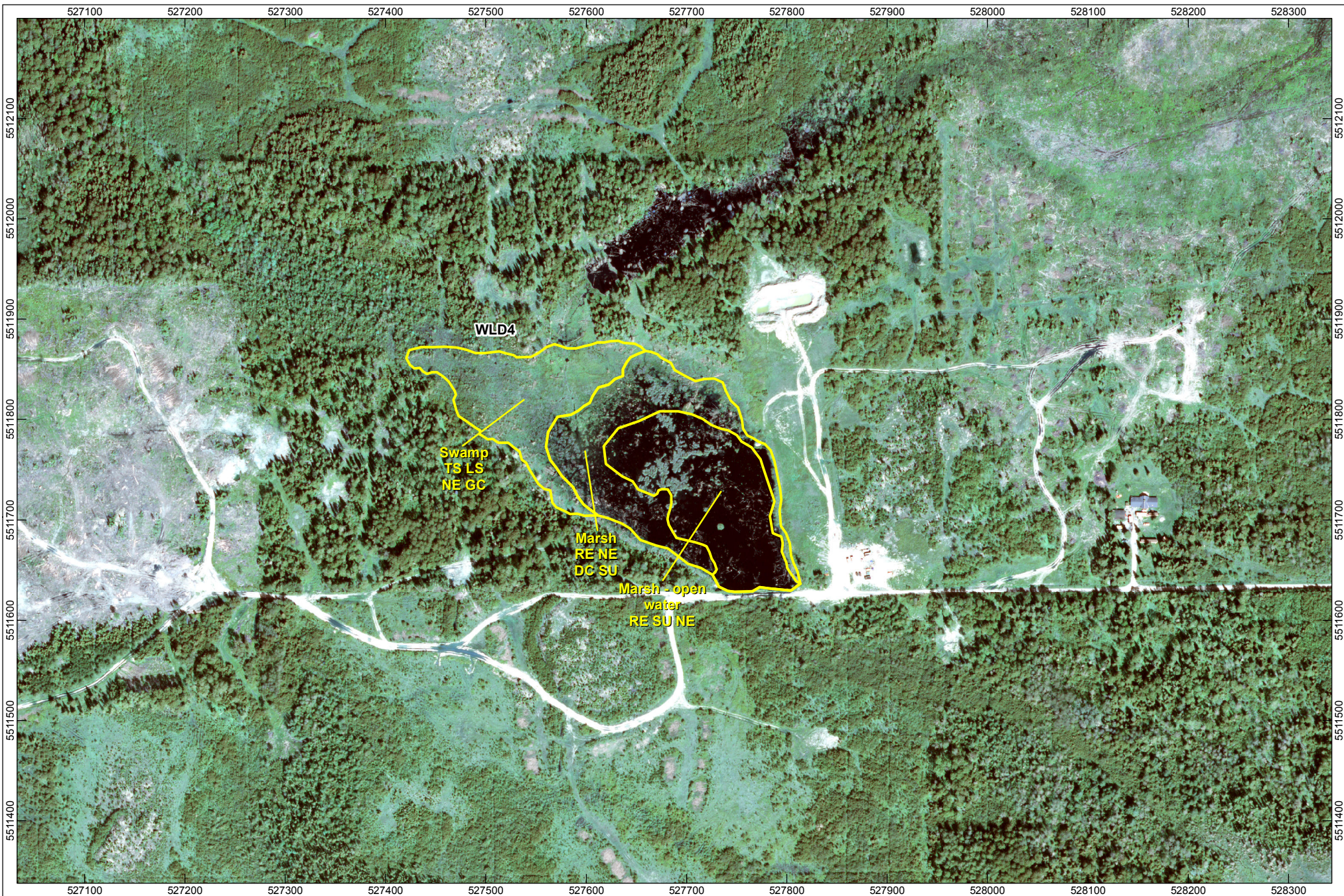
Northern Ontario Wetlands Evaluation, Data and Scoring Record

<u>Scientific Name</u>	<u>Common Name</u>
<i>Agrostis scabra</i>	Tickle grass
<i>Alnus incana</i>	Speckled Alder
<i>Alnus incana</i>	Speckled Alder
<i>Athyrium filix-femina</i>	Lady fern
<i>Bidens cernua</i>	Nodding bur marigold
<i>Calla palustris</i>	Water arum
<i>Carex intumescens</i>	Bladder sedge
<i>Carex spp.</i>	Sedges
<i>Carex utriculata</i>	Beaked sedge
<i>Cornus canadensis</i>	Bunch Berry
<i>Cornus stolonifera</i>	Red-Osier dogwood
<i>Drepanocladus spp.</i>	sickle moss
<i>Equisetum sylvaticum</i>	Wood horsetail
<i>Fragaria virginiana</i>	Common strawberry
<i>Galium trifidum</i>	Small bedstraw
<i>Galium triflorum</i>	Fragrant Bedstraw
<i>Lemna spp.</i>	Duckweed
<i>Maianthemum trifolium</i>	Three-Leaved Solomon's Seal
<i>Petasites frigidus</i>	Northern sweet coltsfoot
<i>Phragmites australis</i>	Common Reed
<i>Polygonum periscaria</i>	Lady's thumb
<i>Populus balsamifera</i>	Balsam poplar
<i>Potamogeton natans</i>	Floating-leaved pondweed
<i>Rhytidiadelphus triquetrus</i>	Electrified cat's tail moss
<i>Ribes spp.</i>	Currant
<i>Rosa acicularis</i>	Prickly wild rose
<i>Rubus idaeus</i>	Red raspberry
<i>Rubus pubescens</i>	Dwarf raspberry
<i>Salix spp.</i>	Willow
<i>Scirpus cyperinus</i>	Wool grass
<i>Sparganium eurycarpum</i>	Large-Fruited Burreed
<i>Typha latifolia</i>	Common Cattail
<i>Vallisneria americana</i>	Tape grass
<i>Viola spp.</i>	Viola

Wildlife Species Observed

Blue Jay
Belted Kingfisher
Swamp Sparrow
Red-breasted Nuthatch
Pine Sisken
Leopard frog
Wood frog
old beaver pond/lodge
Minnows

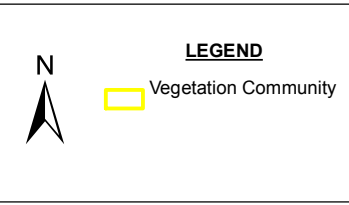
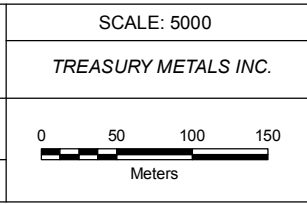




GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

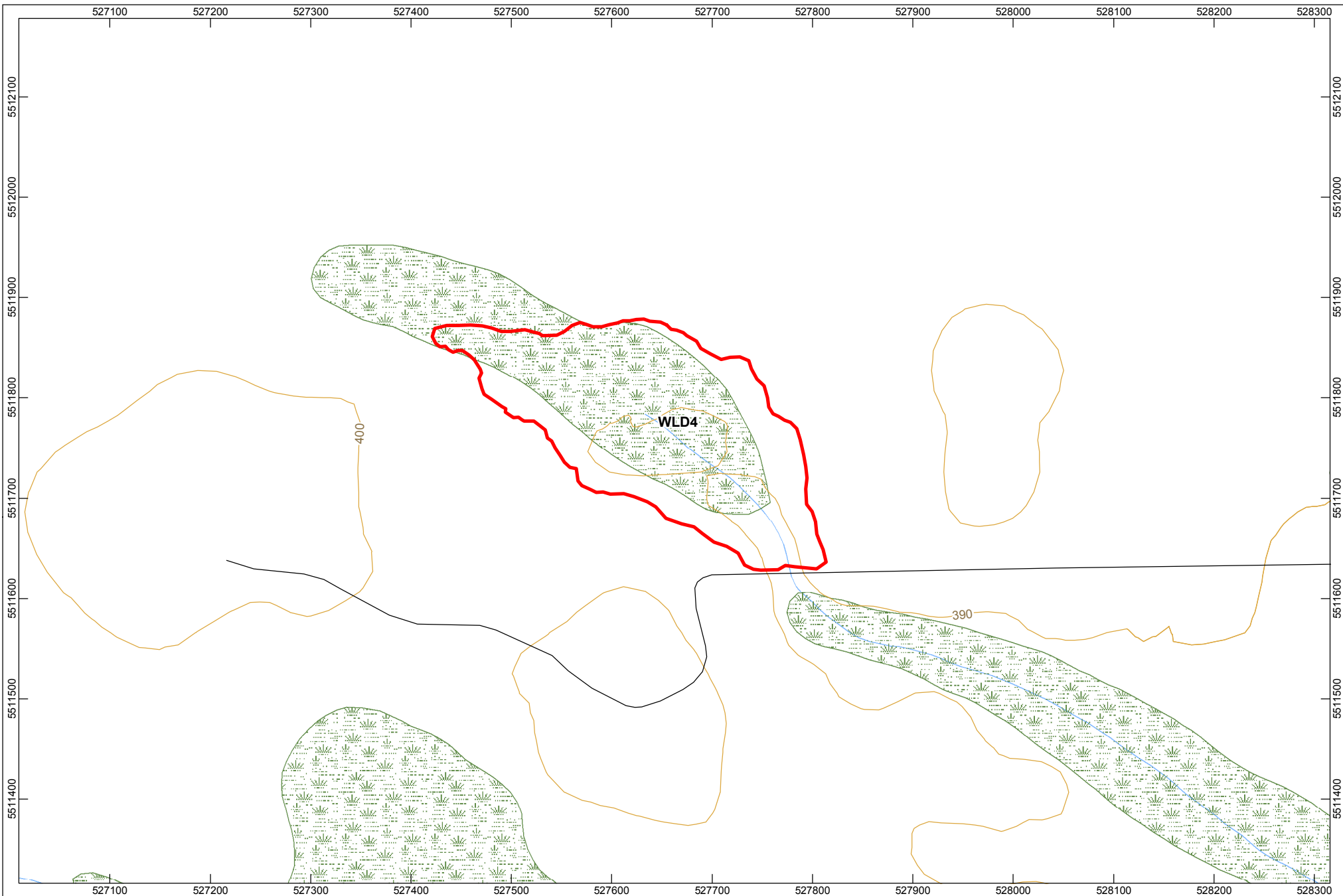
Vegetation Communities

Wetland - WLD4 REV.01



- DC - Dead Conifers
- GC - Herbs and Ground Cover
- LS - Low Shrubs
- NE - Narrow Leaved Emergents
- RE - Robust Emergents
- TS - Tall Shrubs
- SU - Submerged Vegetation





GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Wetland Boundary Map

Wetland - WLD4 REV.00

SCALE: 5000

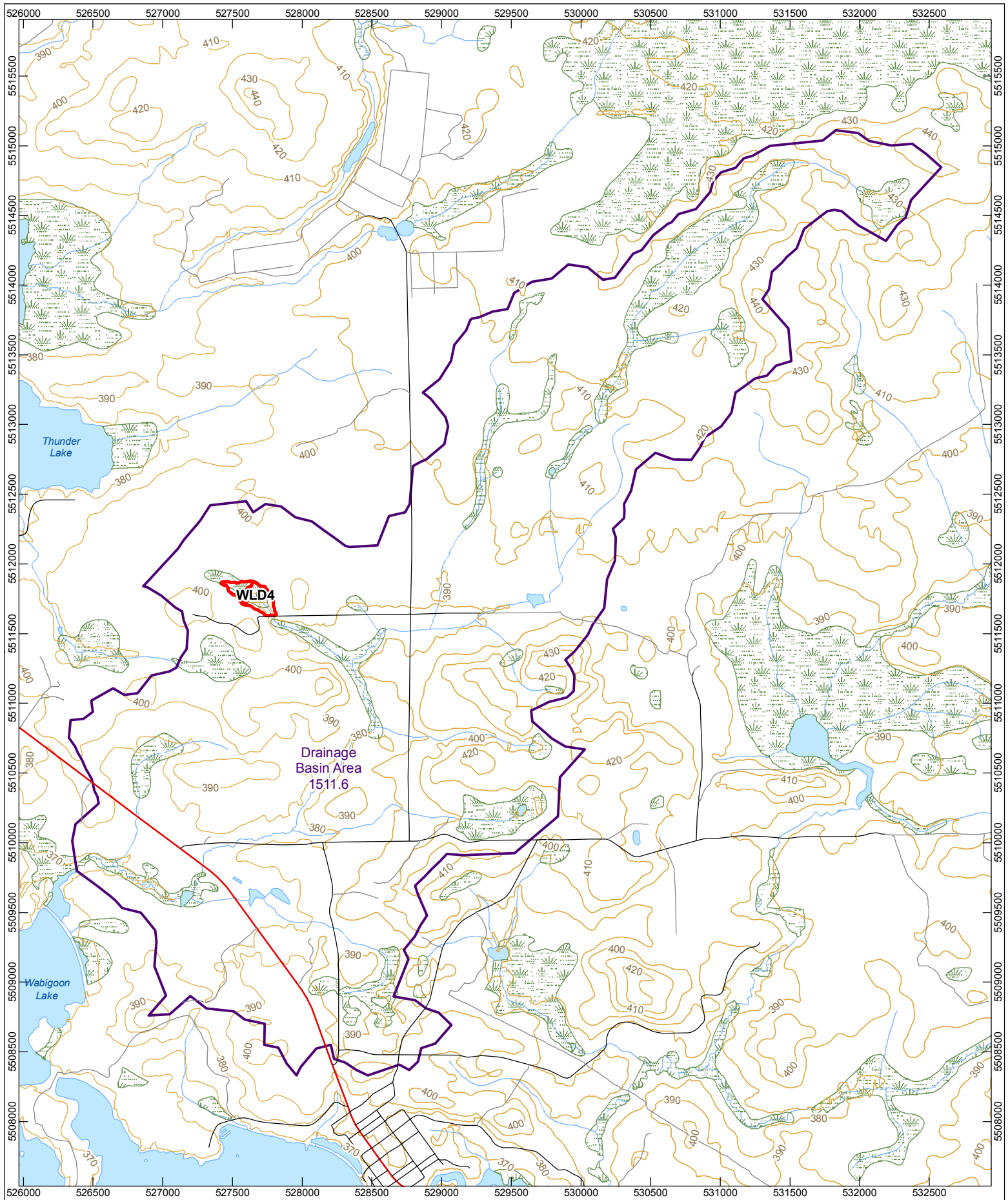
TREASURY METALS INC.

0 50 100 150
 Meters



- LEGEND**
- Expressway / Highway
 - Local Roadway
 - Resource / Recreational Road
 - Elevation Contour
 - Wetland Boundary: Ontario Wetland Evaluation System
 - Wetland: Land Information Data Set
 - Waterbody
 - Watercourse





GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Wetland Drainage Basin Map

Wetland - WLD4 REV.00

SCALE: 35000
 TREASURY METALS INC.

0 300 600
 Meters



- Expressway / Highway
- Local Roadway
- Resource / Recreational Road
- Elevation Contour

- Wetland Boundary: Ontario
- Wetland Evaluation System
- Drainage Basin

- Wetland: Land Information Data Set
- Waterbody
- Watercourse



WETLAND DATA AND SCORING RECORD

- i) **WETLAND NAME:** WLD5
- ii) **MNR ADMINISTRATIVE REGION:** Northwest **DISTRICT:** Dryden
AREA OFFICE (if different from District): _____
- iii) **CONSERVATION AUTHORITY JURISDICTION:** N/A
(If not within a designated CA, check here: X)
- iv) **COUNTY OR REGIONAL MUNICIPALITY:** N/A
- v) **TOWNSHIP:** Zealand
- vi) **LOTS & CONCESSIONS:** Lots 4 and 5, Concession 3
(attach separate sheet if necessary)
- vii) **MAP AND AIR PHOTO REFERENCES**
- a) Latitude: 49°44'35 Longitude: 92 °35'27"
- b) UTM grid reference: Zone: 15
Grid: E 529459 N 5510159
- c) Ontario Ministry of Natural Resources Data:
Lands Information Data
Lands Information Ontario
- d) Digital Orthoimagery: Date photos taken: summer 2010

Supplied by: Treasury Metals Inc.
Scale of mapping: 1:5000
- e) Ontario Base Map numbers & scale 2015520055100, 2015520055000
1:10,000

viii) WETLAND SIZE AND BOUNDARIES

a) Single contiguous wetland area: 14.4 hectares

b) Wetland complex comprised of ___ individual wetlands:

Wetland Unit Number (for reference)	Size of each wetland unit
Wetland Unit No. 1	_____ ha
Wetland Unit No. 2	_____ ha
Wetland Unit No. 3	_____ ha
Wetland Unit No. 4	_____ ha
Wetland Unit No. 5	_____ 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

(Attach additional sheets if necessary)

TOTAL WETLAND SIZE _____ ha

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

N/A

1.0 BIOLOGICAL COMPONENT

1.1 PRODUCTIVITY

1.1.1 GROWING DEGREE-DAYS/SOILS

GROWING DEGREE DAYS SOILS

(check one)	Estimated Fractional Area
_____ <1600	_____ clay/loam
_____ 1600-2000	_____ silt/marl
<u> x </u> 2000-2400	_____ limestone
_____ 2400-2800	_____ sand
_____ 2800-3000	_____ humic/mesic
_____ >3000	<u> 1.0 </u> fibric
	_____ granite

SCORING:

Growing Degree Days	Clay/Loam	Silt/Marl	Lime-stone	Sand	Humic/Mesic	Fibric	Granite
<1600	12	11	9	7	7	6	4
1600-2000	15	13	11	9	8	7	5
2000-2400	18	15	13	11	9	8*1.0	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

(maximum score 30; if wetland contains more than one soil type, evaluate based on the fractional area)

Steps required for evaluation: (maximum score 30 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.

Growing Degree Days/Soils Score (maximum 30 points): 8

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.1.2 WETLAND TYPE (Fractional Area = area of wetland type/ total wetland area)

Fractional Area Score

Bog	_____	x 3 =	_____
Fen	<u>0.9</u>	x 6 =	<u>5.4</u>
Swamp	_____	x 8 =	_____
Marsh	<u>0.1</u>	x 15 =	<u>1.5</u>

Wetland Type Score (maximum 15 points): 7

1.1.3 SITE TYPE (Fractional Area = area of site type/ total wetland area)

Fractional Area Score

Isolated	_____	x 1 =	_____
Palustrine (permanent or Intermittent flow)	<u>1.0</u>	x 2 =	<u>2</u>
Riverine	_____	x 4 =	_____
Riverine (at rivermouth)	_____	x 5 =	_____
Lacustrine (at rivermouth)	_____	x 5 =	_____
Lacustrine (on enclosed bay, with barrier beach)	_____	x 3 =	_____
Lacustrine (exposed to lake)	_____	x 2 =	_____

Site Type Score (maximum 5 points): 2

1.2 BIODIVERSITY

1.2.1 NUMBER OF WETLAND TYPES

(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 points): 13

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1.2.2 VEGETATION COMMUNITIES

Attach a separate sheet listing community (map) codes, vegetation forms and dominant species. Use the form on the following page to record percent area by dominant vegetation form. This information will be used in other parts of the evaluation.

Communities should be grouped by number of forms. For example, 2 form communities might appear as follows:

2 forms

<u>Code</u>	<u>Forms</u>	<u>Dominant Species</u>
M6	re, ff	re, <i>Typha latifolia</i> ; ff, <i>Lemna minor</i> , <i>Wolffia</i>
S1	ts, gc	ts, <i>Salix discolor</i> ; gc, <i>Impatiens capensis</i> , <i>Thelypteris palustris</i>

Note that the dominant species for each form are separated by a semicolon. The dominant species (maximum of 2) within a form are separated by commas.

Scoring:

Total # of communities with 1-3 forms	Total # of communities with 4-5 forms	Total # of communities with 6 or more forms
1 = 1.5 points	1 = 2 points	1 = 3 points
2 = 2.5	2 = 3.5	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	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
+.5 each additional community	+.5 each additional community	+1 each additional community

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

$$6 + 13.5 + 15 = 34.5 = 35 \text{ points}$$

Vegetation Communities Score (maximum 45 points): 5

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Wetland Name: WLD5

Wetland Size (ha): 14.4

Vegetation Form % area in which form is dominant

h —

c —

dh —

dc —

ts —

ls 0.7

ds —

gc —

m 0.2

ne —

be —

re —

ff —

f 0.1

su —

u (unvegetated) —

Total = **100%**

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.3 DIVERSITY OF SURROUNDING HABITAT

(Check all appropriate items)

<u> </u>	recent burn (< 5yr)
<u> </u>	abandoned agricultural land
<u> x </u>	utility corridor
<u> x </u>	deciduous forest
<u> x </u>	recent cutover or clearcut (<5 yr)
<u> x </u>	coniferous forest
<u> x </u>	mixed forest (at least 25% conifer and 75% deciduous or vice versa)
<u> </u>	crops
<u> x </u>	abandoned pits or quarries
<u> </u>	pasture
<u> </u>	ravine
<u> </u>	fence rows
<u> </u>	open lake or deep river
<u> </u>	creek floodplain
<u> x </u>	rock outcrop

Diversity of Surrounding Habitat Score (1 for each, maximum 7 points): 7

1.2.4 PROXIMITY TO OTHER WETLANDS

(Check first appropriate category only)

Scoring

1) <u> x </u>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river within 1.5 km	8 points
2) <u> </u>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
3) <u> </u>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river from 1.5 to 4 km away	5
4) <u> </u>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
5) <u> </u>	Within 0.75 km of other wetlands (different dominant wetland type) or open lake or river, but not hydrologically connected by surface water	5
6) <u> </u>	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
7) <u> </u>	No wetland within 1 km	0

Proximity to other Wetlands Score (Choose one only, maximum 8 points): 8

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.5 INTERSPERSION

Number of Intersections (check one)

- | | | |
|---------------|--------------|----|
| 1) 26 or less | _____ | 3 |
| 2) 27 to 40 | _____ | 6 |
| 3) 41 to 60 | _____ | 9 |
| 4) 61 to 80 | <u> x </u> | 12 |
| 5) 81 to 100 | _____ | 15 |
| 6) 101 to 125 | _____ | 18 |
| 7) 126 to 150 | _____ | 21 |
| 8) 151 to 175 | _____ | 24 |
| 9) 176 to 200 | _____ | 27 |
| 10) >200 | _____ | 30 |

Interspersion Score (Choose one only, maximum 30 points): 12
(74 intersections)

1.2.6 OPEN WATER TYPES

Permanently flooded (Check one)

- | | | |
|------------------|--------------|----|
| 1) No open water | _____ | 0 |
| 2) Type 1 | _____ | 8 |
| 3) Type 2 | <u> x </u> | 8 |
| 4) Type 3 | _____ | 14 |
| 5) Type 4 | _____ | 20 |
| 6) Type 5 | _____ | 30 |
| 7) Type 6 | _____ | 8 |
| 8) Type 7 | _____ | 14 |
| 9) Type 8 | _____ | 3 |

Open Water Score (Choose one only, maximum 30 points): 8

1.3 SIZE

14.4 hectares

Size Score (Biological Component) (maximum 50 points): 8

Table 2. Evaluation Table for Size Score (Biological Component)

Wetland size (ha)	Total Score for Biodiversity Subcomponent									
	<37	37-47	48-60	61-72	73-84	85-96	97-108	109-120	121-132	>132
<20 ha	1	5	7	8	9	17	25	34	43	50
20-40	5	7	8	9	10	19	28	37	46	50
41-60	6	8	9	10	11	21	31	40	49	50
61-80	7	9	10	11	13	23	34	43	50	50
81-100	8	10	11	13	15	25	37	46	50	50
101-120	9	11	13	15	18	28	40	49	50	50
121-140	10	13	15	17	21	31	43	50	50	50
141-160	11	15	17	19	23	34	46	50	50	50
161-180	13	17	19	21	25	37	49	50	50	50
181-200	15	19	21	23	28	40	50	50	50	50
201-400	17	21	23	25	31	43	50	50	50	50
401-600	19	23	25	28	34	46	50	50	50	50
601-800	21	25	28	31	37	49	50	50	50	50
801-1000	23	28	31	34	40	50	50	50	50	50
1001-1200	25	31	34	37	43	50	50	50	50	50
1201-1400	28	34	37	40	46	50	50	50	50	50
1401-1600	31	37	40	43	49	50	50	50	50	50
1601-1800	34	40	43	46	50	50	50	50	50	50
1801-2000	37	43	47	49	50	50	50	50	50	50
>2000	40	46	50	50	50	50	50	50	50	50

2.0 SOCIAL COMPONENT

2.1 ECONOMICALLY VALUABLE PRODUCTS

2.1.1 WOOD PRODUCTS

Area of wetland forested (ha); not wetland size

1) <5 ha	<u> x </u>	0
2) 5 – 25 ha	<u> </u>	4
3) 26 – 50 ha	<u> </u>	6
4) 51 – 100 ha	<u> </u>	8
5) 101-200 ha	<u> </u>	11
6) > 200 ha	<u> </u>	14

Source of information: Forest Resource Inventory (FRI – GIS data)

Wood Products Score (Score one only, maximum 14 points): 0

2.1.2 LOWBUSH CRANBERRY

1) Present	<u> x </u>	2
2) Absent	<u> </u>	0

Source of information: Field observation

Lowbush Cranberry Score (maximum 2 points): 2

2.1.3 WILD RICE

1) Present	<u> </u>	10
2) Absent	<u> x </u>	0

Source of information: Field observation

Wild Rice Score (maximum 10 points): 0

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

- | | | |
|------------|--------------|----|
| 1) Present | _____ | 12 |
| 2) Absent | <u> x </u> | 0 |

Source of information: Field observation

Commercial Fish Score (maximum 12 points): 0

2.1.5 FURBEARERS

(Consult Appendix 9)

	<u>Name of furbearer</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Scoring: 3 points for each species, maximum 12

Furbearer Score (maximum 12 points): 0

2.2 RECREATIONAL ACTIVITIES

Type of Wetland-Associated Use			
Intensity of Use	Hunting	Nature Enjoyment/ Ecosystem Study	Fishing
High	40 points	40 points	40 points
Moderate	20	20	20
Low	8	8	8
Not Possible	0	0	0

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

Sources of information:

- Hunting: Field observation
- Nature: Field observation
- Fishing: Field observation

Recreational Activities Score (maximum 80 points): 0

2.3 LANDSCAPE AESTHETICS

2.3.1 DISTINCTNESS

- | | | |
|---------------------|---------------|---|
| 1) Clearly distinct | <u> x </u> | 3 |
| 2) Indistinct | <u> </u> | 0 |

Landscape Distinctness Score (maximum 3 points): 3

2.3.2 ABSENCE OF HUMAN DISTURBANCE

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

Source of information: Field observation-road, fuelwood operation

Absence of Human Disturbance Score (maximum 7 points): 7

2.4 EDUCATION AND PUBLIC AWARENESS

2.4.1 EDUCATIONAL USES

- | | | |
|---------------|---------------|----|
| 1) Frequent | <u> </u> | 20 |
| 2) Infrequent | <u> </u> | 12 |
| 3) No Visits | <u> x </u> | 0 |

Source of information: _____

Educational Uses Score (maximum 20 points): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

2.4.2 FACILITIES AND PROGRAMS

1) Staffed interpretation centre with shelters, trails, literature	_____	8
2) No interpretation centre or staff, but a system of self-guided trails and observation points, or brochures available	_____	4
3) Facilities such as maintained paths (e.g., wood chips) Boardwalks, boat launches, or observation towers	_____	2
4) No facilities or programs	<u> x </u>	0

Source of information: _____

Facilities and Programs Score (maximum 8 points): 0

2.4.3 RESEARCH AND STUDIES

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

Attach list of known reports by above categories

Research and Studies Score (Score is cumulative, maximum 12 points): 0

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	16
0.5 to 10 km from settlement	26	16	10
10 to 60 km from settlement	12	8	4
>60 km from settlement	5	2	0
>100 km from settlement	0	0	0

Name of settlement: Wabigoon Lake Ojibway Nation (WLON)

Proximity to Human Settlement Score (maximum 40 points): 10

2.6 OWNERSHIP (FA = fractional area)

Wetland in public or private ownership, held under contract or in trust for wetland protection

Fractional Area Score

_____ x 10 = _____

Wetland in public ownership, not as above

_____ x 8 = _____

Wetland in private ownership, not as above

1.0 x 4 = 4

Source of information: Treasury Resources Inc.

Ownership Score (maximum 10 points): 4

Northern Ontario Wetlands Evaluation, Data and Scoring Record

2.7 SIZE (See size table -- Social Component)

14.4 hectares

Size Score (Social Component) (maximum 20 points): 3

Table 3. Evaluation Table for Size Score (Social Component)

Wetland size (ha)	Total for Size Dependent Score									
	<30	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
2-4	1	2	4	8	12	13	14	14	15	16
5-8	2	2	5	9	13	14	15	15	16	16
9-12	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	18	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	19	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	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.

2.8.1 ABORIGINAL VALUES

Full documentation of sources must be attached to the data record.

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

2.8.2 CULTURAL HERITAGE

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

Aboriginal Values/Cultural Heritage Score (maximum 30 points): 0

3.0 HYDROLOGICAL COMPONENT

3.1 FLOOD ATTENUATION

If the wetland is a complex including isolated wetlands, apportion the 100 points according to area. For example, if 10 ha of a 100 ha complex is isolated, the isolated portion receives the maximum proportional score of 10. The remainder of the wetland is then evaluated out of the remaining 90 points.

Step 1.

If wetland is entirely Isolated, go directly to Step 5.

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 5.

All other wetlands, go through steps 2, 3, 4 and 5.

Step 2.

Determination of Upstream Detention Factor (DF)

(a)	Wetland area (ha)	<u>14.4</u>
(b)	Total area (ha) of <u>upstream</u> detention areas (include the wetland itself)	<u>14.4</u>
(c)	Ratio of (a):(b)	<u>1</u>
(d)	Upstream detention factor: (c) x 2 = (Maximum allowable factor = 1)	<u>2</u>

Step 3.

Determination of Peak Flow Attenuation Factor (AF)

(a)	Wetland area (ha)	<u>14.4</u>
(b)	Size of catchment basin (ha) <u>upstream</u> of wetland (include wetland itself in catchment area)	<u>1511.6</u>
(c)	Ratio of (a):(b)	<u>0.001</u>
(d)	Wetland attenuation factor: (c) x 10 = (Maximum allowable factor = 1)	<u>0.01</u>

Step 4.

Determination of Wetland Surface Form Factor (FF)

From the list below, select the surface form which best describes the wetland.

Flooded with little or no aquatic vegetation	<u>x</u>	0
Flooded but with submergent, emergent or floating vegetation	<u> </u>	0.2
Flat (lawn) vegetation (typical of fens)	<u> </u>	0.5
Hummock-depression microtopography	<u> </u>	0.7
Patterned (e.g., string bog, ribbed fen)	<u> </u>	1.0

Surface Form Factor (FF) 0

(Maximum allowable factor = 1)

Step 5. Calculation of Final Score

1. Wetland is entirely Isolated 100 points
2. Wetland is lacustrine and the ratio of wetland area:lake area is <0.1 0 points
3. Wetland is riverine along the St. Mary's River 0 points
4. For all other wetlands*, calculate as follows:

(a)	Upstream Detention Factor (DF) (Step2)	1
(b)	Wetland Attenuation Factor (AF) (Step 3)	0.01
(c)	Surface Form Factor (FF) (Step 4)	0

$$[(DF + AF + FF)/3] \times 100^* \quad \underline{\quad 34 \quad}$$

* Unless wetland is a complex including isolated portions -- see above

Total Flood Attenuation Score (maximum 100 points): 34

3.2 GROUND WATER RECHARGE

3.2.1 SITE TYPE

- 1) Wetland > 50% lacustrine (by area) or located on the St. Mary's River Score = 0
- 2) Wetland not as above. Calculate final score as follows:
(FA = area of site type/total area of wetland)

1.0	FA of isolated or palustrine wetland	x 20 = 20
_____	FA of riverine wetland	x 5 = _____
_____	FA of lacustrine wetland (wetland <50% lacustrine)	x 0 = _____

Site Type Score: (maximum 20 points): 20

3.2.2 SOILS

EVALUATION:

Dominant Wetland Type	Sand, loam, gravel, till	Clay, bedrock
Lacustrine or on St. Mary's River	0	0
Isolated	10	5
Palustrine	7	4
Riverine (not on St. Mary's River)	5	2

Hydrological Soil Class Score (maximum 10 points): 4

3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

3.3.1 WATERSHED IMPROVEMENT FACTOR

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

<u>Site Type</u>	<u>Improvement Factor (IF)</u>
Isolated	FA _____ x 0.5 = _____
Riverine	FA _____ x 1.0 = _____
Palustrine with no inflow	FA <u>1.0</u> x 0.7 = <u>0.7</u>
Palustrine with inflows	FA _____ x 1.0 = _____
Lacustrine on lake shoreline	FA _____ x 0.2 = _____
Lacustrine at lake inflow or outflow	FA _____ x 1.0 = _____

Watershed Improvement Score (IF x 30) (maximum = 30): 21

3.3.2 ADJACENT AND WATERSHED LAND USE EVALUATION:

Step 1. Determination of Maximum Initial Score

_____ Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)

_____ x _____ All other wetlands (Go through steps 2, 3, 4, and 5b)

Step 2. Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in an extensive manner.

Choose one		
> 50% of catchment basin	_____	20
20-50% of catchment basin	_____ x _____	14
< 20% of catchment basin	_____	4

Score for BLU: 14

Step 3. Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

Choose the highest only

Major corridor ¹	_____	15
Secondary corridor	_____	11
Tertiary corridor	_____	6
Temporary or abandoned	_____	3
None	_____ x _____	0

Score for LUU: 0

¹ Major, secondary and tertiary roads are those that are indicated as such on the provincial highways map. Major hydro corridors are trunk lines coming directly from a generating station. Major pipelines are trans-continental lines. Secondary corridors are regional distribution lines (i.e. multi-cable hydro corridors not emanating directly from a generating station or regional gas distribution lines). Tertiary corridors are single hydro lines or local gas distribution lines (i.e. to domestic users).

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Step 4. Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits use for local road construction), etc. Score as 'present' only if a point source land use is located less than 1 km upstream from the wetland.

a) Present	_____	15
b) Absent	_____x_____	0

Score for PS: 0

Step 5. Calculation of total score for Adjacent and Watershed Land Use

	Score
a) Wetland on the Great Lakes or St. Mary's River	0
b) All other wetlands, calculate as follows:	

Final Score BLU + LUU + PS: 14

3.3.3 VEGETATION FORM

Choose the category that best describes the vegetation of the wetland

Trees, shrubs or herbs (h, c, ts, ls, gc)	_____x_____	8
Emergents, submergents (ne, re, be, f, ff, su)	_____	10
Little or no vegetation (u)	_____	0

Dominant Vegetation Form Score (maximum 10 points): 8

3.4 CARBON SINK

Choose the category that best describes the wetland.

1) Wetland a bog or fen with > 50% organic soils	_____x_____	15
2) Wetland has organic soils occupying 10 to 50% of the area (i.e. mainly mineral or undesignated soil, any wetland type)	_____	6
3) Marshes and swamps with >50% organic soil	_____	9
4) Wetland with <10% organic soils	_____	0

Carbon Sink Score (maximum 15 points): 15

3.5 SHORELINE EROSION CONTROL

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.

- Step 1.
- | | |
|---|------------|
| ___x___ Wetland entirely isolated or palustrine | Score
0 |
| _____ Any part of the wetland riverine, or lacustrine (proceed to Step 2) | |

Step 2. Choose the one characteristic that best describes the shoreline vegetation.
(See text for the definition of shoreline.)

- | | | |
|----------------------------|-------|----|
| Trees and shrubs | _____ | 15 |
| Emergent vegetation | _____ | 8 |
| Submergent vegetation | _____ | 6 |
| Other shoreline vegetation | _____ | 3 |
| No vegetation | _____ | 0 |

Shoreline Erosion Control Score (maximum 15 points): 0

3.6 GROUNDWATER DISCHARGE

(Circle the characteristics that best describe the wetland being evaluated and sum the scores.)

Category	Catchment interaction		
Wetland type	Bog = 0	Swamp/Marsh = 2	Fen = 5
Basin topography	Flat/Rolling = 0	Hilly = 2	Major relief break = 5
Wetland area:Upslope catchment area	Large (>50%) = 0	Moderate (6 - 50%) = 2	Small (<5%) = 5
Lagg development	None found = 0	Minor = 2	Extensive = 5
Seeps at wetland edge	None found = 0	1 to 3 seeps = 5	4 or more seeps = 10
Iron precipitates evident at edge	None = 0	1-3 deposits = 2	4 or more deposits = 5
Surface marl deposits	None = 0	1-3 deposits = 2	> 3 = 5
Wetland pH	Low < 4.2 = 0	Moderate 4.2-5.7 = 5	High >5.7 = 10
Catchment soil coverage	Patchy = 0	Thin (<20 cm) = 2	Thick = 5
Catchment soil permeability	Low = 0	Moderate = 2	High = 5

(Scores are cumulative, maximum score 30 points)

Groundwater Discharge Score (maximum 30 points): 12

4.0 SPECIAL FEATURES COMPONENT

4.1 RARITY

4.1.1 WETLANDS

Hills Site Region and Site District (5E only): _____

Wetland type (check one or more)

- Bog
- Fen
- Swamp
- Marsh

Evaluation Table for Scoring Rarity of Wetland Type.

Unit Number	Site Region & District	Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	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
5E-1	Thessalon	10	0	30	20
5E-2	Gore Bay	20	0	20	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tomiko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E-12	Renfrew	0	0	30	10
5-S	Lake of the Woods	10	10	20	10

Rarity of Wetland Type Score (Maximum 70 points): 40

4.1.2 SPECIES

4.1.2.1 BREEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

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

Attach documentation

Scoring

For one species	250
For each additional species	250

(Score is cumulative, no maximum score)

Breeding Habitat for Endangered or Threatened Species Score (no maximum): 0

4.1.2.2 TRADITIONAL MIGRATION OR FEEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach documentation

Scoring

For one species	150 points
For each additional species	75

(Score is cumulative, no maximum score)

Traditional Habitat for Endangered or Threatened Species Score (no maximum): 0

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4.1.2.3 PROVINCIALY SIGNIFICANT ANIMAL SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant animal species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.) (no maximum score)

Provincially Significant Animal Species Score (no maximum): 0

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4.1.2.4 PROVINCIALY SIGNIFICANT PLANT SPECIES

(Scientific names must be recorded)

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant plant species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species Score (no maximum): 0

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4.1.2.5 REGIONALLY SIGNIFICANT SPECIES (SITE REGION)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

SIGNIFICANT IN SITE REGION:

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary; Attach documentation

** Score only if there is an approved list.

No. of species significant in Site Region

One species	=	20	6 species	=	55
2 species	=	30	7 species	=	58
3 species	=	40	8 species	=	61
4 species	=	45	9 species	=	64
5 species	=	50	10 species	=	67

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

Significant Species (Site Region) Score (no maximum): 0

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4.2.1.6 LOCALLY SIGNIFICANT SPECIES (SITE DISTRICT)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Source of information: _____

Attach separate list if necessary; Attach documentation.

Scoring

No. of species significant in Site District

One species	=	10	6 species	=	41
2 species	=	17	7 species	=	43
3 species	=	24	8 species	=	45
4 species	=	31	9 species	=	47
5 species	=	38	10 species	=	49

For each significant species over 10 in the wetland, add 1 point.

Locally Significant Species (Site District) Score (no maximum): 0

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4.1.2.7 SPECIES OF SPECIAL STATUS

Black Duck

Suitable breeding habitat present and within assessment range (Figure 17)

Assessment Category		
40 - 80 Indicated Pairs/100 km sq	_____	25
20 - 40 Indicated Pairs/100 km sq	_____	20
10 - 20 Indicated Pairs/100 km sq	_____	15
5 - 10 Indicated Pairs/100 km sq	_____	10
1 - 5 Indicated Pairs/100 km sq	_____	5
Habitat not suitable	<u> x </u>	0
Out of assessment range	_____	0

Black Duck Score (maximum 25 points): 0

4.2 SIGNIFICANT FEATURES AND HABITATS

4.2.1 NESTING OF COLONIAL WATERBIRDS

Status	Name of species	Source of information	Score
Currently nesting			50 points
Known to have nested within past 5 years			25
Active feeding area (great blue heron excluded)			15
None known			0

Attach documentation (nest locations, etc., if known)

Colonial Waterbirds Score (maximum 50 points): 0

4.2.2. WINTER COVER FOR WILDLIFE

(Check only highest level of significance)		<u>Score</u> (one only)
1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	25
3) Locally significant	_____	10
4) Little or poor winter cover present	<u> x </u>	0

Source of information: _____

Winter cover for Wildlife Score (maximum 100 points): 0

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4.2.3 WATERFOWL STAGING AND/OR MOULTING

(Check only highest level of significance for both staging and moulting; score is cumulative across columns, maximum 150 points)

	<u>Staging</u>	Score (one only)	<u>Moulting</u>	Score (one only)
1) Nationally significant	_____	150	_____	150
2) Provincially significant	_____	100	_____	100
3) Regionally significant	_____	50	_____	50
4) Known to occur	_____	10	_____	10
5) Not possible	_____	0	_____	0
6) Not known	<u> x </u>	0	_____	0

Source of information: _____

Waterfowl Moulting and Staging Score (maximum 150 points): 0

4.2.4 WATERFOWL BREEDING

(Check only highest level of significance)

1) Provincially significant	_____	100
2) Regionally significant	_____	50
3) Habitat suitable	_____	10
4) Habitat not suitable	<u> x </u>	0

Source of information: _____

Waterfowl Breeding Score (maximum 100 points): 0

4.2.5 MIGRATORY PASSERINE, SHOREBIRD OR RAPTOR STOPOVER AREA

(check highest applicable category)

1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	10
3) Not significant	<u> x </u>	0

Source of information: _____

Passerine, Shorebird or Raptor Stopover Score (maximum 100 points): 0

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4.2.6 UNGULATE HABITAT

EVALUATION:

Score (1) + (2) + one of (3) to (6)

(1) Ungulate summer cover	_____	15
(2) Mineral licks	_____	50
(3) Moose aquatic feeding area Class 1	<u> x </u>	0
(4) Moose aquatic feeding area Class 2	_____	10
(5) Moose aquatic feeding area Class 3	_____	20
(6) Moose aquatic feeding area Class 4	_____	35

(Score is cumulative for a maximum possible score of 100)

Ungulate Habitat Score (maximum 100 points): 0

4.2.7 FISH HABITAT

4.2.7.1 Spawning and Nursery Habitat

Table 5. Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5 - 4.9	0.2
5.0 - 9.9	0.4
10.0 - 14.9	0.6
15.0 - 19.9	0.8
20.0+ ha	1.0

Step 1:

_____ Fish habitat is not present within the wetland (Score = 0)

 x Fish habitat is present within the wetland (Go to Step 2)

Step 2: Choose only one option

1) _____ Significance of the spawning and nursery habitat within the wetland is known
(Go to Step3)

2) x **Significance of the spawning and nursery habitat within the wetland is not known (Go through Steps 4, 5, 6, and 7)**

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Step 3: Select the highest appropriate category below, attach documentation:

- 1) Significant in Site Region _____ 100
- 2) Significant in Site District _____ 50
- 3) Locally Significant Habitat (5.0+ ha) _____ 25
- 3) Locally Significant Habitat (<5.0 ha) _____ 15

Score for Spawning and Nursery Habitat (maximum score 100 points): 0

Step 4: Proceed to Steps 4 to 7 only if Step 3 was not scored

(**Low Marsh:** marsh area from the existing water line out to the outer boundary of the wetland)

- _____ Low marsh not present (Continue to Step 5)
- x Low marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community. Check the appropriate Vegetation Group (see Appendix 16) for each Low Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass				6	
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
5	Duckweed				2	
6	Smartweed-Waterwillow				6	
7	Waterlily-Lotus	x	1.0	0.1	11	1.1
8	Waterweed-Watercress				9	
9	Ribbongrass				10	
10	Coontail-Naiad-Watermilfoil				13	
11	Narrowleaf Pondweed				5	
12	Broadleaf Pondweed				8	
Total Score (maximum 75 points)						1.1

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Step 5: High Marsh: area from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.

 x High marsh not present (Continue to Step 6)
 High marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community. Check the appropriate Vegetation Group for each High Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass				6	
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
Total Score (maximum 25 points)						

Step 6: Swamp: Swamp communities containing fish habitat, either seasonally or permanently. Determine the total area of seasonally flooded swamps and permanently flooded swamps containing fish habitat.

 x Swamp containing fish habitat not present (Continue to Step 7)
 Swamp containing fish habitat present (Score as follows)

Swamp containing fish habitat	Present (check)	Total area (ha)	Area Factor (see Table 5)	Score	TOTAL SCORE (factor x score)
seasonally flooded				10	
permanently flooded				10	
SCORE (maximum 20 points)					

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Step 7: Calculation of final score

Score for Spawning and Nursery Habitat (Low Marsh) (maximum 75 points)	<u>1.1</u>
Score for Spawning and Nursery Habitat (High Marsh) (maximum 25 points)	<u>0</u>
Score for Swamp Containing Fish Habitat (maximum 20 points)	<u>0</u>

Sum (maximum score 100 points): 1

4.2.7.2 Migration and Staging Habitat

Step 1:

- 1) Staging or Migration Habitat is not present in the wetland x (Score = 0)
- 2) Staging or Migration Habitat is present in the wetland, significance of the habitat is known _____
(Go to Step 2)
- 3) Staging or Migration Habitat is present in the wetland, significance of the habitat is not known _____
(Go to Step 3)

Only one of Step 2 or Step 3 is to be scored.

Step 2: Select the highest appropriate category below, attach documentation:

- 1) Significant in Site Region _____ 25
- 2) Significant in Site District _____ 15
- 3) Locally Significant _____ 10
- 4) Fish staging and/or migration habitat present, but not as above _____ 5

Score for Fish Migration and Staging Habitat (maximum score 25 points): 0

Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to be the dominant site type). Note name of river for 2) and 3).

- 1) Wetland is riverine at rivermouth or lacustrine at rivermouth _____ 25
- 2) Wetland is riverine, within 0.75 km of rivermouth _____ 15
- 3) Wetland is lacustrine, within 0.75 km of rivermouth _____ 10
- 4) Fish staging and/or migration habitat present, but not as above _____ 5

Score for Staging and Migration Habitat (maximum score 25 points): 0

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4.3 ECOSYSTEM AGE (Fractional Area = Area of wetland type/total area of wetland)

	Fractional Area		Scoring
Bog	_____	x 25	_____
Fen, treed to open on deep soils, floating mats or marl	<u>0.9</u>	x 20	<u>18</u>
Fen, on limestone rock	_____	x 5	_____
Swamp	_____	x 3	_____
Marsh	<u>0.1</u>	x 0	<u>0</u>

Ecosystem Age Score (maximum 25 points): 18

4.4 GREAT LAKES COASTAL WETLANDS

Score for coastal (see text for definition) wetlands only

Choose one only

wetland <10 ha	_____	10
wetland 10-50 ha	_____	25
wetland 51-100 ha	_____	50
wetland >100 ha	_____	75

Great Lakes Coastal Wetlands Score (maximum 75 points): 0

5.0 EXTRA INFORMATION

5.1 PURPLE LOOSESTRIFE

Absent/Not seen x

Present

- 1) One location in wetland
- Two to many locations

Abundance code

- a) < 20 plants
- b) 20-99 plants
- c) 100-999 plants
- d) > 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)
- Seasonal (1 to 3 months) x
- 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
- Observed or heard on lake or river adjoining the wetland
- x not as above

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INVESTIGATORS

Krista Prosser

AFFILIATION

DST Consulting engineers

DATES WETLAND VISITED

September 4, 2012

DATE THIS EVALUATION COMPLETED:

February 12, 2013

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

5

WEATHER CONDITIONS

i) at time of field work : 18°C, sunny with clouds

ii) summer conditions in general : precipitation levels were high in June and August

OTHER POTENTIALLY USEFUL INFORMATION:

CHECKLIST OF PLANT AND ANIMAL SPECIES RECORDED IN THE WETLAND:

attach list of all flora and fauna observed in the wetland:

* Indicate if voucher specimens or photos have been obtained, where located, etc.)

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SUMMARY OF EVALUATION RESULT

Wetland WLD5

TOTAL FOR 1.0 BIOLOGICAL COMPONENT 78

TOTAL FOR 2.0 SOCIAL COMPONENT 29

TOTAL FOR 3.0 HYDROLOGICAL COMPONENT 113

TOTAL FOR 4.0 SPECIAL FEATURES COMPONENT 59

WETLAND TOTAL 279

INVESTIGATORS

Krista Prosser,

AFFILIATION

DST Consulting Engineers

DATE: **February 12, 2014**

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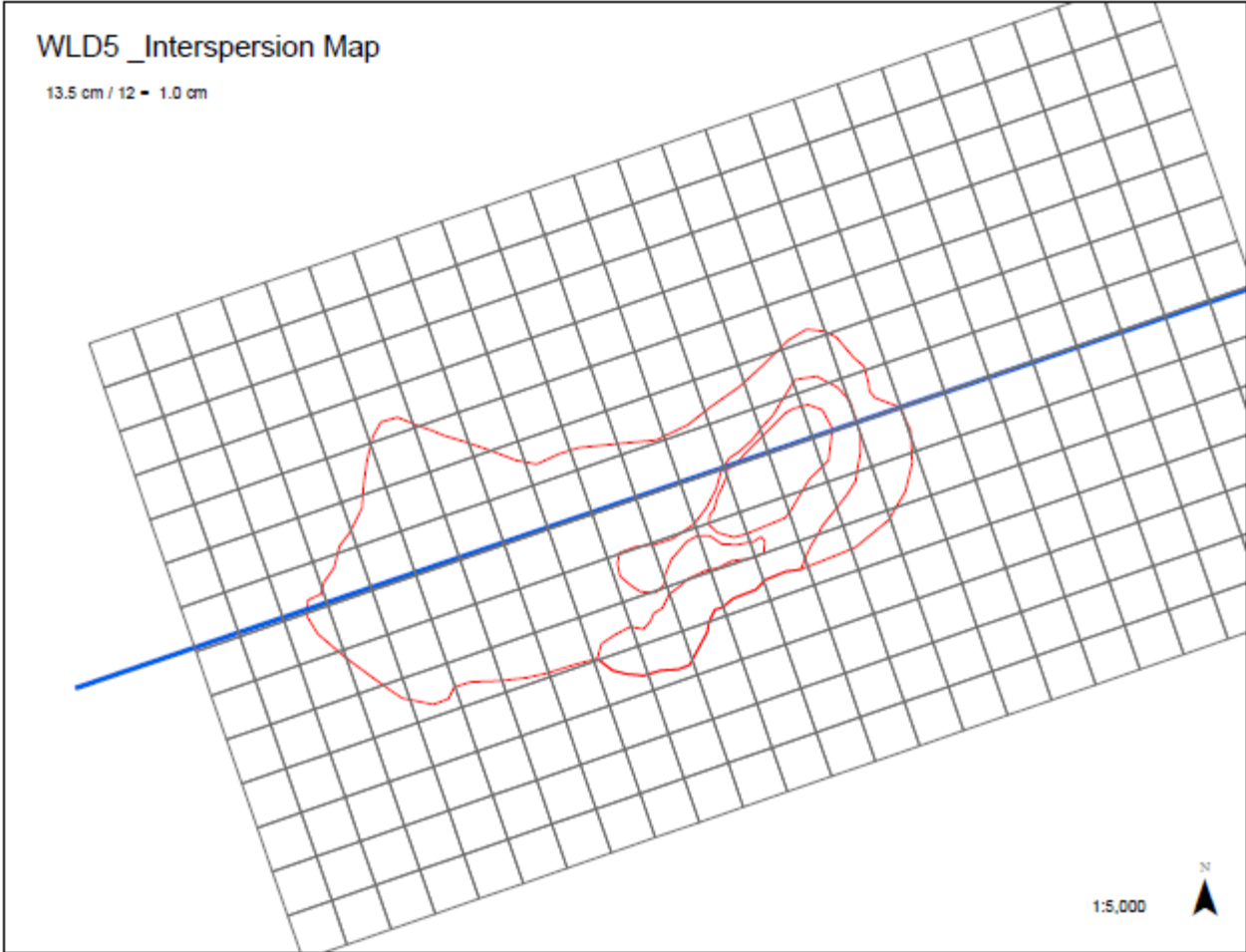
Wetland ID: wld5	Site Type: Palustrine	
Date Surveyed: September 4, 2012		
<u>BIOLOGICAL COMPONENT</u>		
Productivity	Growing Degree-Day/soils (max 30)	8
	Wetland Type (max 15)	7
	Site Type (max 5)	2
Biodiversity =	Number of Wetland types (max 30)	13
	Vegetation Communities (max 45)	5
	Diversity of Surrounding Habitat (max 7)	7
	Proximity to other wetlands (max 8)	8
	Interspersion (max 30)	12
	Open water type (max 30)	8
	Size (max 50)	8
	Total Biological Component (not to exceed 250)	78
<u>SOCIAL COMPONENT</u>		
Economically Valuable Products	Wood products (max 14)	0
	Low Bush Cranberry (max 2)	2
	Wild rice (max 10)	0
	Commercial fish (max 12)	0
	Furbearers (max 12)	0
Recreational Activities	Hunting/Fishing/Nature (max 80)	0
	Landscape Distinctness (max 3)	3
	Absence of human disturbance (max 7)	7
	Educational Uses (max 20)	0
	Facilities and Programs (8)	0
	Research and Studies (max 12)	0
	Proximity to human settlement (max 40)	10
	Ownership (max 10)	4
	Size (max 20)	3
	Aboriginal and cultural (max 30)	0
	Total for Social Component (not to exceed 250)	29
<u>HYDROLOGICAL COMPONENT</u>		
	Flood attenuation (max 100)	34
Ground Water Recharge	Site type (20)	20
	Hydrological Soils (max 10)	4
Downstream Water Quality Improvement	Watershed Improvement (max 30)	21
	Adjacent Watershed Land Use (max 60)	14
	Vegetation form (max 10)	8
	Carbon Sink (max 15)	0
	Shoreline erosion control (max 15)	0
	Groundwater Discharge (max 30)	12
	Total for Hydrological Component (not to exceed 250)	113
<u>SPECIAL FEATURES</u>		
Rarity	Wetlands (max 70)	40
	Endangered/Threatened spp. breeding habitat (no max)	0
	Traditional use by endanger/threatend spp. (no max)	0
	Provincially significant animals (no max)	0
	Provincially significant plants (no max)	0
	Regionally significant spp. (no max)	0
	Locally significant spp. (no max)	0
	Species of Special Status (Black Duck) (max 25)	0
Significant Features and Habitats	Colonial Waterbirds (max 50)	0
	Winter Cover for Wildlife (max 100)	0
	Waterfowl Staging/Moutling (max 150)	0
	Waterfowl Breeding (max 100)	0
	Migratory Passerine, Shorebird or Raptor stopover (max 100)	0
	Ungulate Habitat (max 100)	0
	Fish Nursery Habitat (max 100)	1
	Fish Staging/Migration Habitat Present (max 25)	0
	Ecosystem Age (max 25)	18
	Great Lake Coastal Wetlands (max 75)	0
	Total for Special features (not to exceed 250)	59
TOTAL		279

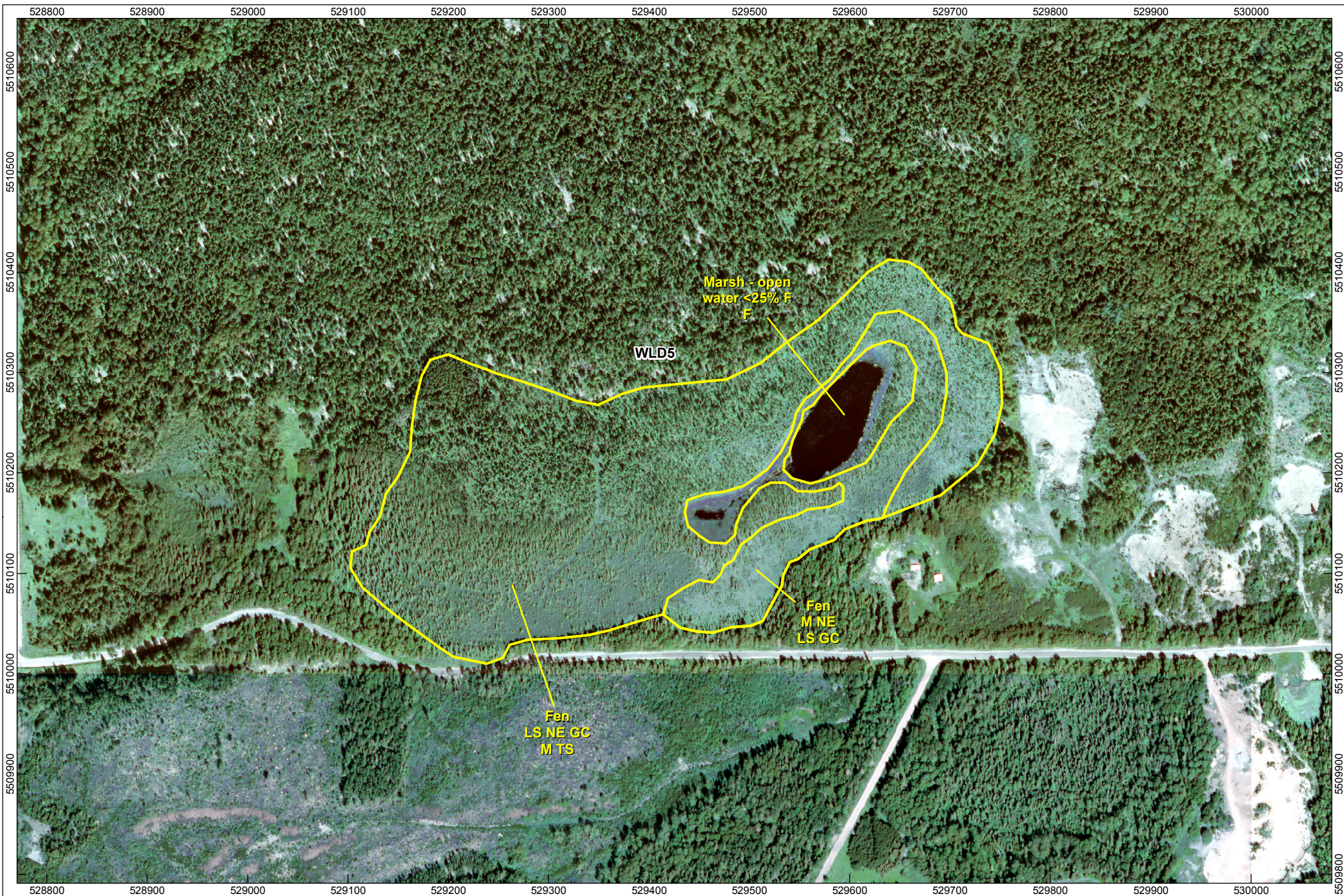
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Scientific Name	Common Name
<i>Andromeda glaucophylla</i>	Bog rosemary
<i>Carex brunnescens</i>	Brownish sedge
<i>Carex lasiocarpa</i>	Wire Sedge
<i>Carex oligosperma</i>	Few-seeded sedge
<i>Chamaedaphne calyculata</i>	Leather Leaf
<i>Cladina rangiferina</i>	Reindeer lichen/moss
<i>Eriophorum vaginatum</i>	Dense cottongrass
<i>Larix laricina</i>	Tamarack
<i>Maianthemum trifolium</i>	Three-Leaved Solomon's Seal
<i>Nymphaeaceae</i>	Pond Lily
<i>Picea mariana</i>	Black Spruce ¹
<i>Picea mariana</i>	Black Spruce
<i>Polytrichum spp.</i>	Haircap moss
<i>Rhododendron groenlandicum</i>	Labrador Tea
<i>Sarracenia purpurea</i>	Pitcher-plant
<i>Sphagnum girgensohnii</i>	Common green peat moss
<i>Sphagnum russowii</i>	Wide-tounged Peat Moss
<i>Sphagnum spp.</i>	Common peat
<i>Sphagnum spp.</i>	Common Peat Moss
<i>Vaccinium oxycoccos</i>	Small Cranberry ¹

Wildlife Observed

Whiskey Jack
Wood Frog





GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Vegetation Communities

Wetland - WLD5 REV.01

SCALE: 5000

TREASURY METALS INC.

0 50 100 150
 Meters

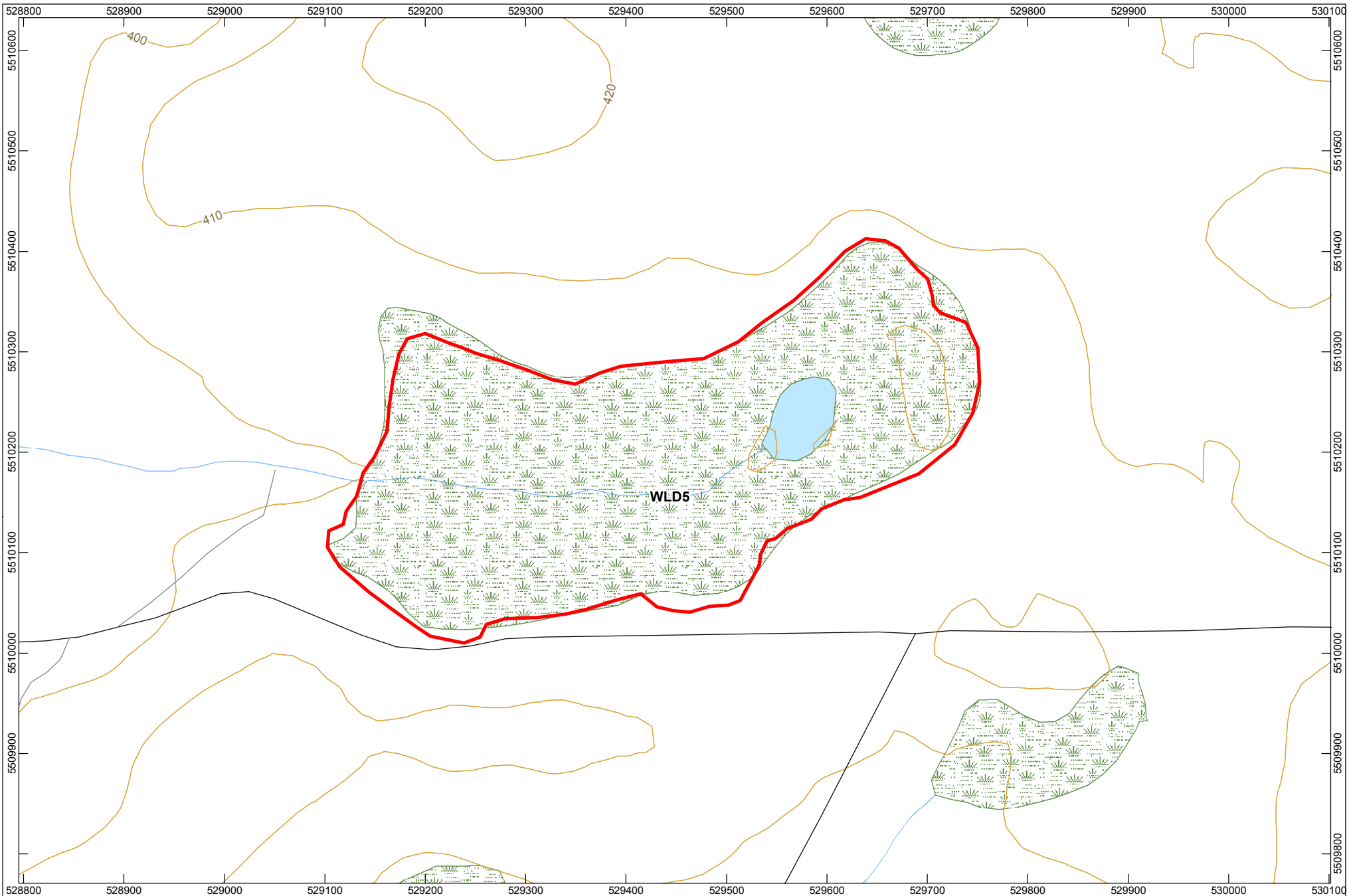
N

LEGEND

Vegetation Community

- F - Floating Vegetation
- GC - Herbs and Ground Cover
- LS - Low Shrubs
- M - Moss and Lichens
- NE - Narrow Leaved Emergents
- TS - Tall Shrubs





GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

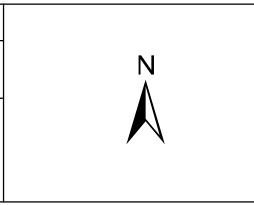
Wetland Boundary Map

Wetland - WLD5 REV.00

SCALE: 5000

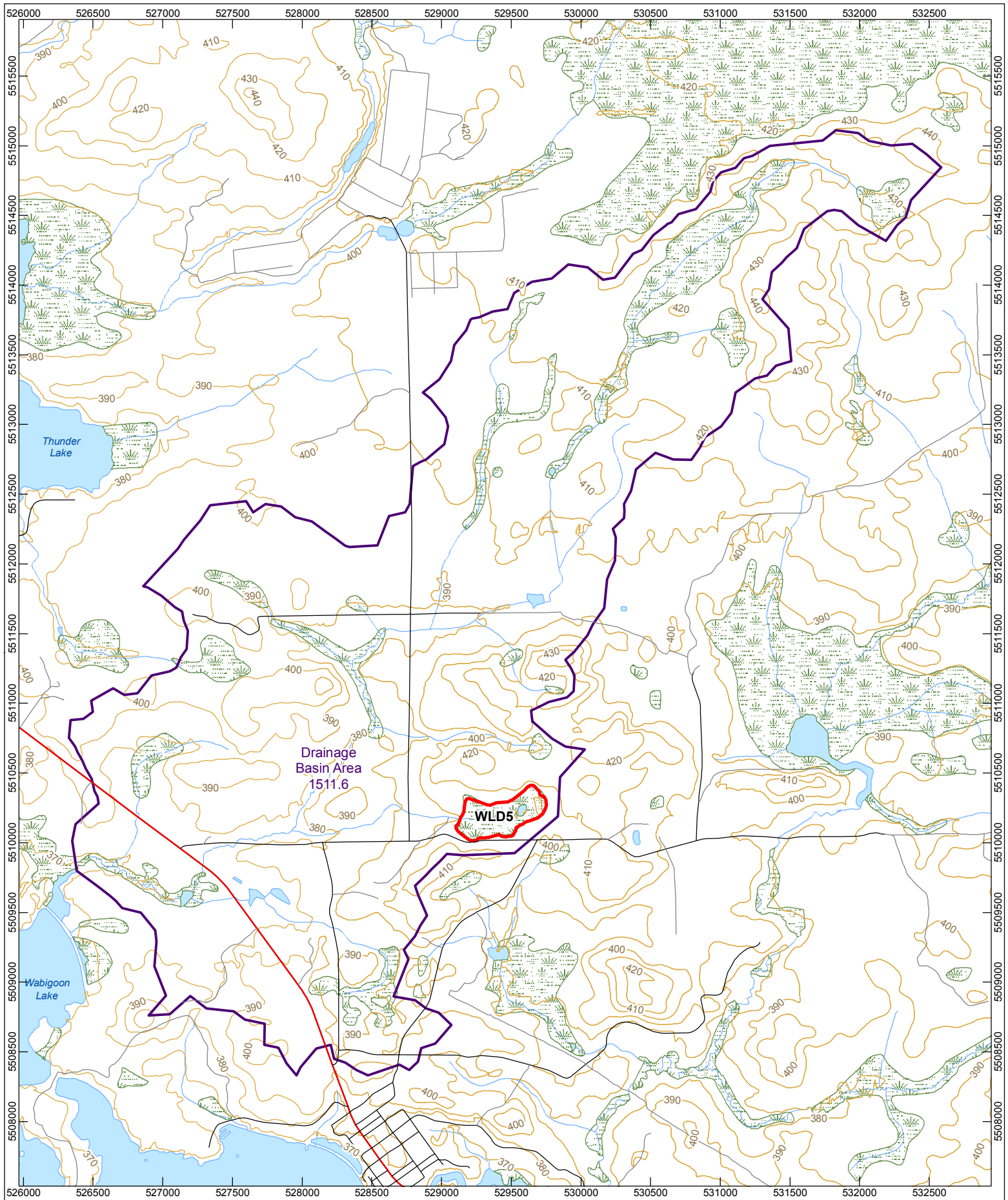
TREASURY METALS INC.

0 50 100 150
 Meters



- LEGEND**
- Expressway / Highway
 - Local Roadway
 - Resource / Recreational Road
 - Elevation Contour
 - Wetland Boundary: Ontario Wetland Evaluation System
 - Wetland: Land Information Data Set
 - Waterbody
 - Watercourse





GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Wetland Drainage Basin Map

Wetland - WLD5 REV.00

SCALE: 35000
 TREASURY METALS INC.

0 300 600
 Meters



- Expressway / Highway
- Local Roadway
- Resource / Recreational Road
- Elevation Contour

- Wetland Boundary: Ontario
- Wetland Evaluation System
- Drainage Basin

- Wetland: Land Information Data Set
- Waterbody
- Watercourse



WETLAND DATA AND SCORING RECORD

- i) **WETLAND NAME:** WLD6
- ii) **MNR ADMINISTRATIVE REGION:** Northwest **DISTRICT:** Dryden
AREA OFFICE (if different from District): _____
- iii) **CONSERVATION AUTHORITY JURISDICTION:** N/A
(If not within a designated CA, check here: X)
- iv) **COUNTY OR REGIONAL MUNICIPALITY:** N/A
- v) **TOWNSHIP:** Zealand
- vi) **LOTS & CONCESSIONS:** Lot 8, Concession 2
(attach separate sheet if necessary)
- vii) **MAP AND AIR PHOTO REFERENCES**
 - a) Latitude: 49°44'24" Longitude: 92 °38'02"
 - b) UTM grid reference: Zone: 15
 Grid: E 526287 N 5509751
 - c) Ontario Ministry of Natural Resources Data:
 Lands Information Data
 Lands Information Ontario
 - d) Digital Orthoimagery: Date photos taken: summer 2010

 Supplied by: Treasury Metals Inc.
 Scale of mapping: 1:10,000
 - e) Ontario Base Map numbers & scale 2015530055100 1:10,000

viii) WETLAND SIZE AND BOUNDARIES

a) Single contiguous wetland area: 8.3 hectares

b) Wetland complex comprised of ___ individual wetlands:

Wetland Unit Number (for reference)	Size of each wetland unit
Wetland Unit No. 1	_____ ha
Wetland Unit No. 2	_____ ha
Wetland Unit No. 3	_____ ha
Wetland Unit No. 4	_____ ha
Wetland Unit No. 5	_____ 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

(Attach additional sheets if necessary)

TOTAL WETLAND SIZE _____ ha

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

Mapping was done at 1:5000 scale

1.0 BIOLOGICAL COMPONENT

1.1 PRODUCTIVITY

1.1.1 GROWING DEGREE-DAYS/SOILS

GROWING DEGREE DAYS SOILS

(check one)	Estimated Fractional Area
_____ <1600	<u>1.0</u> clay/loam
_____ 1600-2000	_____ silt/marl
<u>x</u> _____ 2000-2400	_____ limestone
_____ 2400-2800	_____ sand
_____ 2800-3000	_____ humic/mesic
_____ >3000	_____ fibric
	_____ granite

SCORING:

Growing Degree Days	Clay/Loam	Silt/Marl	Lime-stone	Sand	Humic/Mesic	Fibric	Granite
<1600	12	11	9	7	7	6	4
1600-2000	15	13	11	9	8	7	5
2000-2400	18*1.0	15	13	11	9	8	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

(maximum score 30; if wetland contains more than one soil type, evaluate based on the fractional area)

Steps required for evaluation: (maximum score 30 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.

Growing Degree Days/Soils Score (maximum 30 points): 18

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.1.2 WETLAND TYPE (Fractional Area = area of wetland type/ total wetland area)

Fractional Area Score

Bog	_____	x 3 =	_____
Fen	_____	x 6 =	_____
Swamp	_____	x 8 =	_____
Marsh	<u>1.0</u>	x 15 =	<u>15</u>

Wetland Type Score (maximum 15 points): 15

1.1.3 SITE TYPE (Fractional Area = area of site type/ total wetland area)

Fractional Area Score

Isolated	_____	x 1 =	_____
Palustrine (permanent or Intermittent flow)	_____	x 2 =	_____
Riverine	_____	x 4 =	_____
Riverine (at rivermouth)	_____	x 5 =	_____
Lacustrine (at rivermouth)	<u>1.0</u>	x 5 =	<u>5</u>
Lacustrine (on enclosed bay, with barrier beach)	_____	x 3 =	_____
Lacustrine (exposed to lake)	_____	x 2 =	_____

Site Type Score (maximum 5 points): 5

1.2 BIODIVERSITY

1.2.1 NUMBER OF WETLAND TYPES

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

Number of Wetland Types Score (Maximum 30 points): 9

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.2 VEGETATION COMMUNITIES

Attach a separate sheet listing community (map) codes, vegetation forms and dominant species. Use the form on the following page to record percent area by dominant vegetation form. This information will be used in other parts of the evaluation.

Communities should be grouped by number of forms. For example, 2 form communities might appear as follows:

2 forms

<u>Code</u>	<u>Forms</u>	<u>Dominant Species</u>
M6	re, ff	re, <i>Typha latifolia</i> ; ff, <i>Lemna minor</i> , <i>Wolffia</i>
S1	ts, gc	ts, <i>Salix discolor</i> ; gc, <i>Impatiens capensis</i> , <i>Thelypteris palustris</i>

Note that the dominant species for each form are separated by a semicolon. The dominant species (maximum of 2) within a form are separated by commas.

Scoring:

Total # of communities
with 1-3 forms

Total # of communities
with 4-5 forms

Total # of communities
with 6 or more forms

1 = 1.5 points

2 = 2.5

3 = 3.5

4 = 4.5

5 = 5

6 = 5.5

7 = 6

8 = 6.5

9 = 7

10 = 7.5

11 = 8

+0.5 each additional
community

1 = 2 points

2 = 3.5

3 = 5

4 = 6.5

5 = 7.5

6 = 8.5

7 = 9.5

8 = 10.5

9 = 11.5

10 = 12.5

11 = 13

+0.5 each additional
community

1 = 3 points

2 = 5

3 = 7

4 = 9

5 = 10.5

6 = 12

7 = 13.5

8 = 15

9 = 16.5

10 = 18

11 = 19

+1 each additional
community

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

$$6 + 13.5 + 15 = 34.5 = 35 \text{ points}$$

Vegetation Communities Score (maximum 45 points): 3

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Wetland Name: WLD6

Wetland Size (ha): 8.3

Vegetation Form % area in which form is dominant

h	—
c	—
dh	—
dc	—
ts	—
ls	—
ds	—
gc	—
m	—
ne	—
be	—
re	<u>0.5</u>
ff	—
f	<u>0.5</u>
su	—
u (unvegetated)	—
Total =	100%

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.3 DIVERSITY OF SURROUNDING HABITAT

(Check all appropriate items)

<input type="checkbox"/>	recent burn (< 5yr)
<input type="checkbox"/>	abandoned agricultural land
<input checked="" type="checkbox"/>	utility corridor
<input checked="" type="checkbox"/>	deciduous forest
<input checked="" type="checkbox"/>	recent cutover or clearcut (<5 yr)
<input checked="" type="checkbox"/>	coniferous forest
<input checked="" type="checkbox"/>	mixed forest (at least 25% conifer and 75% deciduous or vice versa)
<input type="checkbox"/>	crops
<input type="checkbox"/>	abandoned pits or quarries
<input checked="" type="checkbox"/>	pasture
<input type="checkbox"/>	ravine
<input type="checkbox"/>	fence rows
<input checked="" type="checkbox"/>	open lake or deep river
<input type="checkbox"/>	creek floodplain
<input type="checkbox"/>	rock outcrop

Diversity of Surrounding Habitat Score (1 for each, maximum 7 points): 7

1.2.4 PROXIMITY TO OTHER WETLANDS

(Check first appropriate category only)

Scoring

1) <input checked="" type="checkbox"/>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river within 1.5 km	8 points
2) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
3) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river from 1.5 to 4 km away	5
4) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
5) <input type="checkbox"/>	Within 0.75 km of other wetlands (different dominant wetland type) or open lake or river, but not hydrologically connected by surface water	5
6) <input type="checkbox"/>	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
7) <input type="checkbox"/>	No wetland within 1 km	0

Proximity to other Wetlands Score (Choose one only, maximum 8 points): 8

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.5 INTERSPERSION

Number of Intersections (check one)

- | | | |
|---------------|--------------|----|
| 1) 26 or less | _____ | 3 |
| 2) 27 to 40 | _____ | 6 |
| 3) 41 to 60 | _____ | 9 |
| 4) 61 to 80 | _____ | 12 |
| 5) 81 to 100 | <u> x </u> | 15 |
| 6) 101 to 125 | _____ | 18 |
| 7) 126 to 150 | _____ | 21 |
| 8) 151 to 175 | _____ | 24 |
| 9) 176 to 200 | _____ | 27 |
| 10) >200 | _____ | 30 |

Interspersion Score (Choose one only, maximum 30 points): 15
(86 intersections)

1.2.6 OPEN WATER TYPES

Permanently flooded (Check one)

- | | | |
|------------------|--------------|----|
| 1) No open water | _____ | 0 |
| 2) Type 1 | _____ | 8 |
| 3) Type 2 | _____ | 8 |
| 4) Type 3 | _____ | 14 |
| 5) Type 4 | _____ | 20 |
| 6) Type 5 | <u> x </u> | 30 |
| 7) Type 6 | _____ | 8 |
| 8) Type 7 | _____ | 14 |
| 9) Type 8 | _____ | 3 |

Open Water Score (Choose one only, maximum 30 points): 30

1.3 SIZE

8.3 hectares

Size Score (Biological Component) (maximum 50 points):

Table 2. Evaluation Table for Size Score (Biological Component)

Wetland size (ha)	Total Score for Biodiversity Subcomponent									
	<37	37-47	48-60	61-72	73-84	85-96	97-108	109-120	121-132	>132
<20 ha	1	5	7	8	9	17	25	34	43	50
20-40	5	7	8	9	10	19	28	37	46	50
41-60	6	8	9	10	11	21	31	40	49	50
61-80	7	9	10	11	13	23	34	43	50	50
81-100	8	10	11	13	15	25	37	46	50	50
101-120	9	11	13	15	18	28	40	49	50	50
121-140	10	13	15	17	21	31	43	50	50	50
141-160	11	15	17	19	23	34	46	50	50	50
161-180	13	17	19	21	25	37	49	50	50	50
181-200	15	19	21	23	28	40	50	50	50	50
201-400	17	21	23	25	31	43	50	50	50	50
401-600	19	23	25	28	34	46	50	50	50	50
601-800	21	25	28	31	37	49	50	50	50	50
801-1000	23	28	31	34	40	50	50	50	50	50
1001-1200	25	31	34	37	43	50	50	50	50	50
1201-1400	28	34	37	40	46	50	50	50	50	50
1401-1600	31	37	40	43	49	50	50	50	50	50
1601-1800	34	40	43	46	50	50	50	50	50	50
1801-2000	37	43	47	49	50	50	50	50	50	50
>2000	40	46	50	50	50	50	50	50	50	50

2.0 SOCIAL COMPONENT

2.1 ECONOMICALLY VALUABLE PRODUCTS

2.1.1 WOOD PRODUCTS

Area of wetland forested (ha); not wetland size

1) <5 ha	<u> x </u>	0
2) 5 – 25 ha	<u> </u>	4
3) 26 – 50 ha	<u> </u>	6
4) 51 – 100 ha	<u> </u>	8
5) 101-200 ha	<u> </u>	11
6) > 200 ha	<u> </u>	14

Source of information: Forest Resource Inventory (FRI – GIS data)

Wood Products Score (Score one only, maximum 14 points): 0

2.1.2 LOWBUSH CRANBERRY

1) Present	<u> </u>	2
2) Absent	<u> </u>	0

Source of information: Field observation

Lowbush Cranberry Score (maximum 2 points): 0

2.1.3 WILD RICE

1) Present	<u> x </u>	10
2) Absent	<u> </u>	0

Source of information: Field observation

Wild Rice Score (maximum 10 points): 10

Northern Ontario Wetlands Evaluation, Data and Scoring Record

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

- | | | |
|------------|-------------------|----|
| 1) Present | <u> x </u> | 12 |
| 2) Absent | <u> </u> | 0 |

Source of information: Field observation

Commercial Fish Score (maximum 12 points): 12

2.1.5 FURBEARERS

(Consult Appendix 9)

	<u>Name of furbearer</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	<u>North American Beaver</u>	<u>Castor canadensis</u>	<u>field observation</u>
2)	<u> </u>	<u> </u>	<u> </u>
3)	<u> </u>	<u> </u>	<u> </u>
4)	<u> </u>	<u> </u>	<u> </u>
5)	<u> </u>	<u> </u>	<u> </u>

Scoring: 3 points for each species, maximum 12

Furbearer Score (maximum 12 points): 3

2.2 RECREATIONAL ACTIVITIES

Type of Wetland-Associated Use			
Intensity of Use	Hunting	Nature Enjoyment/ Ecosystem Study	Fishing
High	40 points	40 points	40 points
Moderate	20	20	20
Low	8	8	8
Not Possible	0	0	0

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

Sources of information:

- Hunting: Field observation
- Nature: Field observation
- Fishing: Field observation, local sources

Recreational Activities Score (maximum 80 points): 8

Northern Ontario Wetlands Evaluation, Data and Scoring Record

2.4.2 FACILITIES AND PROGRAMS

1) Staffed interpretation centre with shelters, trails, literature	_____	8
2) No interpretation centre or staff, but a system of self-guided trails and observation points, or brochures available	_____	4
3) Facilities such as maintained paths (e.g., wood chips) Boardwalks, boat launches, or observation towers	_____	2
4) No facilities or programs	<u> x </u>	0

Source of information: _____

Facilities and Programs Score (maximum 8 points): 0

2.4.3 RESEARCH AND STUDIES

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

Attach list of known reports by above categories

- *DST Consulting Engineers Aquatic Baseline Environmental Reports 2014 (2012 data), Reference Number OE-KN-018101*

Research and Studies Score (Score is cumulative, maximum 12 points): 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	16
0.5 to 10 km from settlement	26	16	10
10 to 60 km from settlement	12	8	4
>60 km from settlement	5	2	0
>100 km from settlement	0	0	0

Name of settlement: Wabigoon Lake Ojibway Nation (WLON)

Proximity to Human Settlement Score (maximum 40 points): 10

2.6 OWNERSHIP (FA = fractional area)

Wetland in public or private ownership, held under contract or in trust for wetland protection

Fractional Area Score

_____ x 10 = _____

Wetland in public ownership, not as above

_____ x 8 = _____

Wetland in private ownership, not as above

1.0 x 4 = 4

Source of information: Treasury Resources Inc.

Ownership Score (maximum 10 points): 4

Northern Ontario Wetlands Evaluation, Data and Scoring Record

2.7 SIZE (See size table -- Social Component)

8.3 hectares

Size Score (Social Component) (maximum 20 points): 5

Table 3. Evaluation Table for Size Score (Social Component)

Wetland size (ha)	Total for Size Dependent Score									
	<30	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
2-4	1	2	4	8	12	13	14	14	15	16
5-8	2	2	5	9	13	14	15	15	16	16
9-12	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	18	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	19	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	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.

2.8.1 ABORIGINAL VALUES

Full documentation of sources must be attached to the data record.

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

2.8.2 CULTURAL HERITAGE

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

Aboriginal Values/Cultural Heritage Score (maximum 30 points): 0

3.0 HYDROLOGICAL COMPONENT

3.1 FLOOD ATTENUATION

If the wetland is a complex including isolated wetlands, apportion the 100 points according to area. For example, if 10 ha of a 100 ha complex is isolated, the isolated portion receives the maximum proportional score of 10. The remainder of the wetland is then evaluated out of the remaining 90 points.

Step 1.

If wetland is entirely Isolated, go directly to Step 5.

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 5.

All other wetlands, go through steps 2, 3, 4 and 5.

Step 2.

Determination of Upstream Detention Factor (DF)

- (a) Wetland area (ha) _____
- (b) Total area (ha) of upstream detention areas _____
(include the wetland itself)
- (c) Ratio of (a):(b) _____
- (d) Upstream detention factor: (c) x 2 = _____
(Maximum allowable factor = 1)

Step 3.

Determination of Peak Flow Attenuation Factor (AF)

- (a) Wetland area (ha) _____
- (b) Size of catchment basin (ha) upstream of wetland _____
(include wetland itself in catchment area)
- (c) Ratio of (a):(b) _____
- (d) Wetland attenuation factor: (c) x 10 = _____
(Maximum allowable factor = 1)

Step 4.

Determination of Wetland Surface Form Factor (FF)

From the list below, select the surface form which best describes the wetland.

	Factor	
Flooded with little or no aquatic vegetation	_____	0
Flooded but with submergent, emergent or floating vegetation	_____	0.2
Flat (lawn) vegetation (typical of fens)	_____	0.5
Hummock-depression microtopography	_____	0.7
Patterned (e.g., string bog, ribbed fen)	_____	1.0

Surface Form Factor (FF) _____

(Maximum allowable factor = 1)

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Step 5. Calculation of Final Score

- 1. Wetland is entirely Isolated 100 points
- 2. Wetland is lacustrine and the ratio of wetland area:lake area is <0.1 0 points
- 3. Wetland is riverine along the St. Mary's River 0 points
- 4. For all other wetlands*, calculate as follows:
 - (a) Upstream Detention Factor (DF) (Step2) _____
 - (b) Wetland Attenuation Factor (AF) (Step 3) _____
 - (c) Surface Form Factor (FF) (Step 4) _____

$[(DF + AF + FF)/3] \times 100^*$ _____

* Unless wetland is a complex including isolated portions -- see above

Total Flood Attenuation Score (maximum 100 points): 0

3.2 GROUND WATER RECHARGE

3.2.1 SITE TYPE

- 1) Wetland > 50% lacustrine (by area) or located on the St. Mary's River Score = 0
- 2) Wetland not as above. Calculate final score as follows:
(FA = area of site type/total area of wetland)
 - _____ FA of isolated or palustrine wetland x 20 = _____
 - _____ FA of riverine wetland x 5 = _____
 - _____ FA of lacustrine wetland (wetland <50% lacustrine) x 0 = _____

Site Type Score: (maximum 20 points): 0

3.2.2 SOILS

EVALUATION:

Dominant Wetland Type	Sand, loam, gravel, till	Clay, bedrock
Lacustrine or on St. Mary's River	0	0
Isolated	10	5
Palustrine	7	4
Riverine (not on St. Mary's River)	5	2

Hydrological Soil Class Score (maximum 10 points): 0

3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

3.3.1 WATERSHED IMPROVEMENT FACTOR

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

<u>Site Type</u>	<u>Improvement Factor (IF)</u>
Isolated	FA _____ x 0.5 = _____
Riverine	FA _____ x 1.0 = _____
Palustrine with no inflow	FA _____ x 0.7 = _____
Palustrine with inflows	FA _____ x 1.0 = _____
Lacustrine on lake shoreline	FA _____ x 0.2 = _____
Lacustrine at lake inflow or outflow	FA <u>1.0</u> x 1.0 = <u>1</u>

Watershed Improvement Score (IF x 30) (maximum = 30): 30

3.3.2 ADJACENT AND WATERSHED LAND USE EVALUATION:

Step 1. Determination of Maximum Initial Score

_____ Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)

_____ x _____ All other wetlands (Go through steps 2, 3, 4, and 5b)

Step 2. Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in an extensive manner.

Choose one		
> 50% of catchment basin	_____	20
20-50% of catchment basin	_____ x _____	14
< 20% of catchment basin	_____	4

Score for BLU: 14

Step 3. Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

Choose the highest only

Major corridor ¹	_____ x _____	15
Secondary corridor	_____	11
Tertiary corridor	_____	6
Temporary or abandoned	_____	3
None	_____	0

Score for LUU: 15

¹ Major, secondary and tertiary roads are those that are indicated as such on the provincial highways map. Major hydro corridors are trunk lines coming directly from a generating station. Major pipelines are trans-continental lines. Secondary corridors are regional distribution lines (i.e. multi-cable hydro corridors not emanating directly from a generating station or regional gas distribution lines). Tertiary corridors are single hydro lines or local gas distribution lines (i.e. to domestic users).

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Step 4. Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits use for local road construction), etc. Score as 'present' only if a point source land use is located less than 1 km upstream from the wetland.

a) Present	_____	15
b) Absent	_____x_____	0

Score for PS: 0

Step 5. Calculation of total score for Adjacent and Watershed Land Use

	Score
a) Wetland on the Great Lakes or St. Mary's River	0
b) All other wetlands, calculate as follows:	

Final Score BLU + LUU + PS: 29

3.3.3 VEGETATION FORM

Choose the category that best describes the vegetation of the wetland

Trees, shrubs or herbs (h, c, ts, ls, gc)	_____	8
Emergents, submergents (ne, re, be, f, ff, su)	_____x_____	10
Little or no vegetation (u)	_____	0

Dominant Vegetation Form Score (maximum 10 points): 10

3.4 CARBON SINK

Choose the category that best describes the wetland.

1) Wetland a bog or fen with > 50% organic soils	_____	15
2) Wetland has organic soils occupying 10 to 50% of the area (i.e. mainly mineral or undesignated soil, any wetland type)	_____	6
3) Marshes and swamps with >50% organic soil	_____x_____	9
4) Wetland with <10% organic soils	_____	0

Carbon Sink Score (maximum 15 points): 9

3.5 SHORELINE EROSION CONTROL

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.

- Step 1.
- | | | |
|--------------|---|------------|
| <u> </u> | Wetland entirely isolated or palustrine | Score
0 |
| <u> x </u> | Any part of the wetland riverine, or lacustrine (proceed to Step 2) | |

Step 2. Choose the one characteristic that best describes the shoreline vegetation.
(See text for the definition of shoreline.)

- | | | |
|----------------------------|--------------|----|
| Trees and shrubs | <u> </u> | 15 |
| Emergent vegetation | <u> x </u> | 8 |
| Submergent vegetation | <u> </u> | 6 |
| Other shoreline vegetation | <u> </u> | 3 |
| No vegetation | <u> </u> | 0 |

Shoreline Erosion Control Score (maximum 15 points): 8

3.6 GROUNDWATER DISCHARGE

(Circle the characteristics that best describe the wetland being evaluated and sum the scores.)

Category	Catchment interaction		
Wetland type	Bog = 0	Swamp/Marsh = 2	Fen = 5
Basin topography	Flat/Rolling = 0	Hilly = 2	Major relief break = 5
Wetland area:Upslope catchment area	Large (>50%) = 0	Moderate (6 - 50%) = 2	Small (<5%) = 5
Lagg development	None found = 0	Minor = 2	Extensive = 5
Seeps at wetland edge	None found = 0	1 to 3 seeps = 5	4 or more seeps = 10
Iron precipitates evident at edge	None = 0	1-3 deposits = 2	4 or more deposits = 5
Surface marl deposits	None = 0	1-3 deposits = 2	> 3 = 5
Wetland pH	Low < 4.2 = 0	Moderate 4.2-5.7 = 5	High >5.7 = 10
Catchment soil coverage	Patchy = 0	Thin (<20 cm) = 2	Thick = 5
Catchment soil permeability	Low = 0	Moderate = 2	High = 5

(Scores are cumulative, maximum score 30 points)

Groundwater Discharge Score (maximum 30 points): 22

4.0 SPECIAL FEATURES COMPONENT

4.1 RARITY

4.1.1 WETLANDS

Hills Site Region and Site District (5E only): _____

Wetland type (check one or more)

- Bog
- Fen
- Swamp
- Marsh

Evaluation Table for Scoring Rarity of Wetland Type.

Unit Number	Site Region & District	Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	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
5E-1	Thessalon	10	0	30	20
5E-2	Gore Bay	20	0	20	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tomiko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E-12	Renfrew	0	0	30	10
5-S	Lake of the Woods	10	10	20	10

Rarity of Wetland Type Score (Maximum 70 points): 20

4.1.2 SPECIES

4.1.2.1 BREEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

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

Attach documentation

Scoring

For one species	250
For each additional species	250

(Score is cumulative, no maximum score)

Breeding Habitat for Endangered or Threatened Species Score (no maximum): 0

4.1.2.2 TRADITIONAL MIGRATION OR FEEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach documentation

Scoring

For one species	150 points
For each additional species	75

(Score is cumulative, no maximum score)

Traditional Habitat for Endangered or Threatened Species Score (no maximum): 0

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4.1.2.3 PROVINCIALY SIGNIFICANT ANIMAL SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	<u>Bald Eagle</u>	<u><i>Haliaeetus leucocephalus</i></u>	<u>Field Observation</u>
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant animal species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.) (no maximum score)

Provincially Significant Animal Species Score (no maximum): 50

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4.1.2.4 PROVINCIALY SIGNIFICANT PLANT SPECIES

(Scientific names must be recorded)

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant plant species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species Score (no maximum): 0

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4.1.2.5 REGIONALLY SIGNIFICANT SPECIES (SITE REGION)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

SIGNIFICANT IN SITE REGION:

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary; Attach documentation

** Score only if there is an approved list.

No. of species significant in Site Region

One species	=	20	6 species	=	55
2 species	=	30	7 species	=	58
3 species	=	40	8 species	=	61
4 species	=	45	9 species	=	64
5 species	=	50	10 species	=	67

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

Significant Species (Site Region) Score (no maximum): 0

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4.2.1.6 LOCALLY SIGNIFICANT SPECIES (SITE DISTRICT)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Source of information: _____

Attach separate list if necessary; Attach documentation.

Scoring

No. of species significant in Site District

One species	=	10	6 species	=	41
2 species	=	17	7 species	=	43
3 species	=	24	8 species	=	45
4 species	=	31	9 species	=	47
5 species	=	38	10 species	=	49

For each significant species over 10 in the wetland, add 1 point.

Locally Significant Species (Site District) Score (no maximum): 0

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4.1.2.7 SPECIES OF SPECIAL STATUS

Black Duck

Suitable breeding habitat present and within assessment range (Figure 17)

Assessment Category		
40 - 80 Indicated Pairs/100 km sq	_____	25
20 - 40 Indicated Pairs/100 km sq	_____	20
10 - 20 Indicated Pairs/100 km sq	_____	15
5 - 10 Indicated Pairs/100 km sq	<u> x </u>	10
1 - 5 Indicated Pairs/100 km sq	_____	5
Habitat not suitable	_____	0
Out of assessment range	_____	0

Black Duck Score (maximum 25 points): 10

4.2 SIGNIFICANT FEATURES AND HABITATS

4.2.1 NESTING OF COLONIAL WATERBIRDS

Status	Name of species	Source of information	Score
Currently nesting			50 points
Known to have nested within past 5 years			25
Active feeding area (great blue heron excluded)			15
None known			0

Attach documentation (nest locations, etc., if known)

Colonial Waterbirds Score (maximum 50 points): 0

4.2.2. WINTER COVER FOR WILDLIFE

(Check only highest level of significance)		<u>Score</u> (one only)
1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	25
3) Locally significant	_____	10
4) Little or poor winter cover present	<u> x </u>	0

Source of information: _____

Winter cover for Wildlife Score (maximum 100 points): 0

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4.2.3 WATERFOWL STAGING AND/OR MOULTING

(Check only highest level of significance for both staging and moulting; score is cumulative across columns, maximum 150 points)

	<u>Staging</u>	Score (one only)	<u>Moulting</u>	Score (one only)
1) Nationally significant	_____	150	_____	150
2) Provincially significant	_____	100	_____	100
3) Regionally significant	_____	50	_____	50
4) Known to occur	_____	10	_____	10
5) Not possible	_____	0	_____	0
6) Not known	<u> x </u>	0	_____	0

Source of information: _____

Waterfowl Moulting and Staging Score (maximum 150 points): 0

4.2.4 WATERFOWL BREEDING

(Check only highest level of significance)

1) Provincially significant	_____	100
2) Regionally significant	_____	50
3) Habitat suitable	<u> x </u>	10
4) Habitat not suitable	_____	0

Source of information: _____

Waterfowl Breeding Score (maximum 100 points): 10

4.2.5 MIGRATORY PASSERINE, SHOREBIRD OR RAPTOR STOPOVER AREA

(check highest applicable category)

1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	10
3) Not significant	<u> x </u>	0

Source of information: _____

Passerine, Shorebird or Raptor Stopover Score (maximum 100 points): 0

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4.2.6 UNGULATE HABITAT

EVALUATION:

Score (1) + (2) + one of (3) to (6)

(1) Ungulate summer cover	_____	15
(2) Mineral licks	_____	50
(3) Moose aquatic feeding area Class 1	<u> x </u>	0
(4) Moose aquatic feeding area Class 2	_____	10
(5) Moose aquatic feeding area Class 3	_____	20
(6) Moose aquatic feeding area Class 4	_____	35

(Score is cumulative for a maximum possible score of 100)

Ungulate Habitat Score (maximum 100 points): 0

4.2.7 FISH HABITAT

4.2.7.1 Spawning and Nursery Habitat

Table 5. Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5 - 4.9	0.2
5.0 - 9.9	0.4
10.0 - 14.9	0.6
15.0 - 19.9	0.8
20.0+ ha	1.0

Step 1:

_____ Fish habitat is not present within the wetland (Score = 0)

 x Fish habitat is present within the wetland (Go to Step 2)

Step 2: Choose only one option

1) _____ Significance of the spawning and nursery habitat within the wetland is known
(Go to Step3)

2) x **Significance of the spawning and nursery habitat within the wetland is not known (Go through Steps 4, 5, 6, and 7)**

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Step 3: Select the highest appropriate category below, attach documentation:

- 1) Significant in Site Region _____ 100
- 2) Significant in Site District _____ 50
- 3) Locally Significant Habitat (5.0+ ha) _____ 25
- 3) Locally Significant Habitat (<5.0 ha) _____ 15

Score for Spawning and Nursery Habitat (maximum score 100 points): 0

Step 4: Proceed to Steps 4 to 7 only if Step 3 was not scored

(**Low Marsh:** marsh area from the existing water line out to the outer boundary of the wetland)

- _____ Low marsh not present (Continue to Step 5)
- x Low marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community. Check the appropriate Vegetation Group (see Appendix 16) for each Low Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass				6	
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
5	Duckweed				2	
6	Smartweed-Waterwillow				6	
7	Waterlily-Lotus				11	
8	Waterweed-Watercress				9	
9	Ribbongrass				10	
10	Coontail-Naiad-Watermilfoil	x	0.6	0.4	13	5.2
11	Narrowleaf Pondweed				5	
12	Broadleaf Pondweed				8	
Total Score (maximum 75 points)						5.2

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Step 5: High Marsh: area from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.

- _____ High marsh not present (Continue to Step 6)
 _____ High marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community. Check the appropriate Vegetation Group for each High Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass				6	
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed	x	0.4	0.4	5	2
4	Arrowhead-Pickerelweed				5	
Total Score (maximum 25 points)						2

Step 6: Swamp: Swamp communities containing fish habitat, either seasonally or permanently. Determine the total area of seasonally flooded swamps and permanently flooded swamps containing fish habitat.

- _____ x _____ Swamp containing fish habitat not present (Continue to Step 7)
 _____ Swamp containing fish habitat present (Score as follows)

Swamp containing fish habitat	Present (check)	Total area (ha)	Area Factor (see Table 5)	Score	TOTAL SCORE (factor x score)
seasonally flooded				10	
permanently flooded				10	
SCORE (maximum 20 points)					

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4.3 ECOSYSTEM AGE (Fractional Area = Area of wetland type/total area of wetland)

	Fractional Area		Scoring
Bog	_____	x 25	_____
Fen, treed to open on deep soils, floating mats or marl	_____	x 20	_____
Fen, on limestone rock	_____	x 5	_____
Swamp	_____	x 3	_____
Marsh	<u>1.0</u>	x 0	<u>0</u>

Ecosystem Age Score (maximum 25 points): 0

4.4 GREAT LAKES COASTAL WETLANDS

Score for coastal (see text for definition) wetlands only

Choose one only

wetland <10 ha	_____	10
wetland 10-50 ha	_____	25
wetland 51-100 ha	_____	50
wetland >100 ha	_____	75

Great Lakes Coastal Wetlands Score (maximum 75 points): 0

5.0 EXTRA INFORMATION

5.1 PURPLE LOOSESTRIFE

Absent/Not seen x

Present

- 1) One location in wetland
- Two to many locations

Abundance code

- a) < 20 plants
- b) 20-99 plants
- c) 100-999 plants
- d) > 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)
- Seasonal (1 to 3 months) x
- 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
- Observed or heard on lake or river adjoining the wetland
- x not as above

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INVESTIGATORS

Krista Prosser

AFFILIATION

DST Consulting engineers

DATES WETLAND VISITED

September 6, 2012

DATE THIS EVALUATION COMPLETED:

February 13, 2014

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

4

WEATHER CONDITIONS

i) at time of field work : 13°C, overcast

ii) summer conditions in general : precipitation levels were high in June and August

OTHER POTENTIALLY USEFUL INFORMATION:

An additional site visit is recommended to occur during the spring or early summer to acquire a more complete list of all aquatic vegetation species and sedges. Also to better assess open water areas and aquatic habitat. The wetland boundary could potentially be expanded to include more of the adjacent northern edge which becomes dried up at the time of site inspection.

CHECKLIST OF PLANT AND ANIMAL SPECIES RECORDED IN THE WETLAND:

attach list of all flora and fauna observed in the wetland:

* Indicate if voucher specimens or photos have been obtained, where located, etc.)

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SUMMARY OF EVALUATION RESULT

Wetland WLD6

TOTAL FOR 1.0 BIOLOGICAL COMPONENT 125

TOTAL FOR 2.0 SOCIAL COMPONENT 64

TOTAL FOR 3.0 HYDROLOGICAL COMPONENT 108

TOTAL FOR 4.0 SPECIAL FEATURES COMPONENT 122

WETLAND TOTAL 419

INVESTIGATORS

Krista Prosser,

AFFILIATION

DST Consulting Engineers

DATE: February 13, 2014

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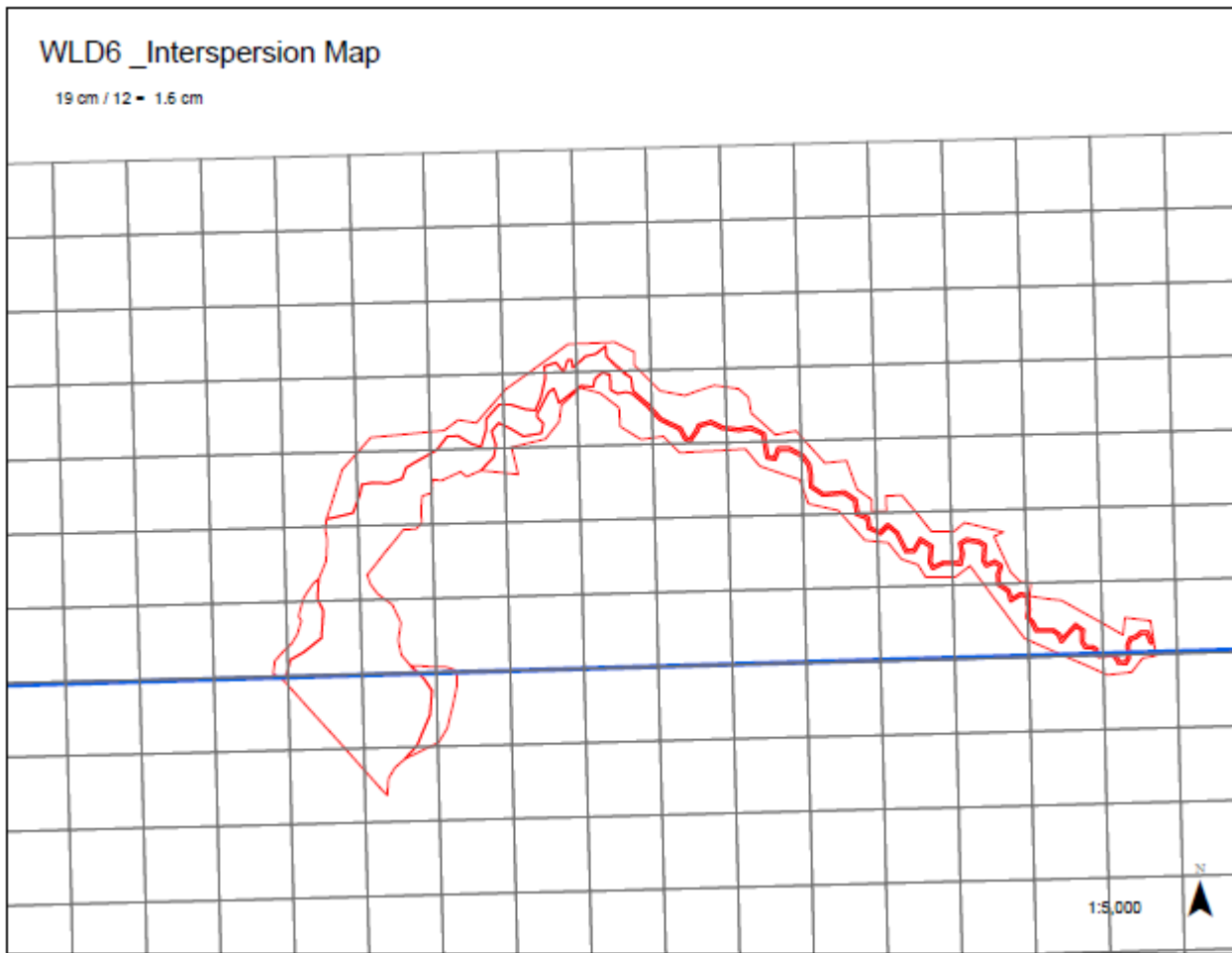
Wetland ID: wld6	Site Type: lacustrine	
Date Surveyed: September 5, 2012		
<u>BIOLOGICAL COMPONENT</u>		
Productivity	Growing Degree-Day/soils (max 30)	8
	Wetland Type (max 15)	15
	Site Type (max 5)	5
Biodiversity	Number of Wetland types (max 30)	9
	Vegetation Communities (max 45)	3
	Diversity of Surrounding Habitat (max 7)	7
	Proximity to other wetlands (max 8)	8
	Interspersion (max 30)	15
	Open water type (max 30)	30
	Size (max 50)	25
	Total Biological Component (not to exceed 250)	125
<u>SOCIAL COMPONENT</u>		
Economically Valuable Products	Wood products (max 14)	0
	Low Bush Cranberry (max 2)	0
	Wild rice (max 10)	10
	Commercial fish (max 12)	12
	Furbearers (max 12)	3
Recreational Activities	Hunting/Fishing/Nature (max 80)	8
	Landscape Distinctness (max 3)	3
	Absence of human disturbance (max 7)	4
	Educational Uses (max 20)	0
	Facilities and Programs (8)	0
	Research and Studies (max 12)	5
	Proximity to human settlement (max 40)	10
	Ownership (max 10)	4
	Size (max 20)	5
	Aboriginal and cultural (max 30)	0
	Total for Social Component (not to exceed 250)	64
<u>HYDROLOGICAL COMPONENT</u>		
	Flood attenuation (max 100)	0
Ground Water Recharge	Site type (20)	0
	Hydrological Soils (max 10)	0
Downstream Water Quality Improvement	Watershed Improvement (max 30)	30
	Adjacent Watershed Land Use (max 60)	29
	Vegetation form (max 10)	10
	Carbon Sink (max 15)	9
	Shoreline erosion control (max 15)	8
	Groundwater Discharge (max 30)	22
	Total for Hydrological Component (not to exceed 250)	108
<u>SPECIAL FEATURES</u>		
Rarity	Wetlands (max 70)	20
	Endangered/Threatened spp. breeding habitat (no max)	0
	Traditional use by endanger/threatend spp. (no max)	0
	Provincially significant animals (no max)	50
	Provincially significant plants (no max)	0
	Regionally significant spp. (no max)	0
	Locally significant spp. (no max)	0
	Species of Special Status (Black Duck) (max 25)	10
Significant Features and Habitats	Colonial Waterbirds (max 50)	0
	Winter Cover for Wildlife (max 100)	0
	Waterfowl Staging/Moutling (max 150)	0
	Waterfowl Breeding (max 100)	10
	Migratory Passerine, Shorebird or Raptor stopover (max 100)	0
	Ungulate Habitat (max 100)	0
	Fish Nursery Habitat (max 100)	7
	Fish Staging/Migration Habitat Present (max 25)	25
	Ecosystem Age (max 25)	0
	Great Lake Coastal Wetlands (max 75)	0
	Total for Special features (not to exceed 250)	122
TOTAL		419

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Scientific Name	Common Name
<i>Acorus calamus</i>	Sweetflag
<i>Calamagrostis canadensis</i>	Canada bluejoint
<i>Glyceria grandis</i>	Tall manna grass
<i>Magalodonta beckii</i>	Water marigold
<i>Myriophyllum sibiricum</i>	Northern Water Milfoil
<i>Najas flexilis</i>	Water nymph
<i>Nuphar pumila</i>	Small yellow pond lily
<i>Phragmites australis</i>	Common reed
<i>Potamogeton natans</i>	Floating-leaved pondweed
<i>Potamogeton pusillus</i>	Slender pondweed
<i>Potamogeton richardsonii</i>	Richardson's Pondweed
<i>Potamogeton robbinsii</i>	Fern pondweed
<i>Sagittaria cuneata</i>	Floating arrowhead
<i>Sagittaria rigida</i>	Stiff arrowhead
<i>Sagittaria rigida</i>	Broad-leaved arrowhead
<i>Sium suave</i>	Water parsnip (scattered)
<i>Sparganium eurycarpum</i>	Large-Fruited Burreed
<i>Sparganium fluctuans</i>	Floating-leaved Burreed
<i>Typha latifolia</i>	Common Cattail
<i>Utricularia vulgaris</i>	Common Bladderwort
<i>Vallisneria spiralis</i>	Tape Grass
<i>Zizania palustris</i>	Wild rice

Wildlife Observed

Bald Eagle
 minnows (perch)
 Blue Heron
 Red winged black bird (4)
 Common goldeneye
 Canada goose (6)
 Pine siskin
 Lesser scaup
 Boreal chickadee
 Beaver evidence





GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Vegetation Communities

Wetland - WLD6 REV.01

SCALE: 5000

TREASURY METALS INC.

0 50 100 150
 Meters

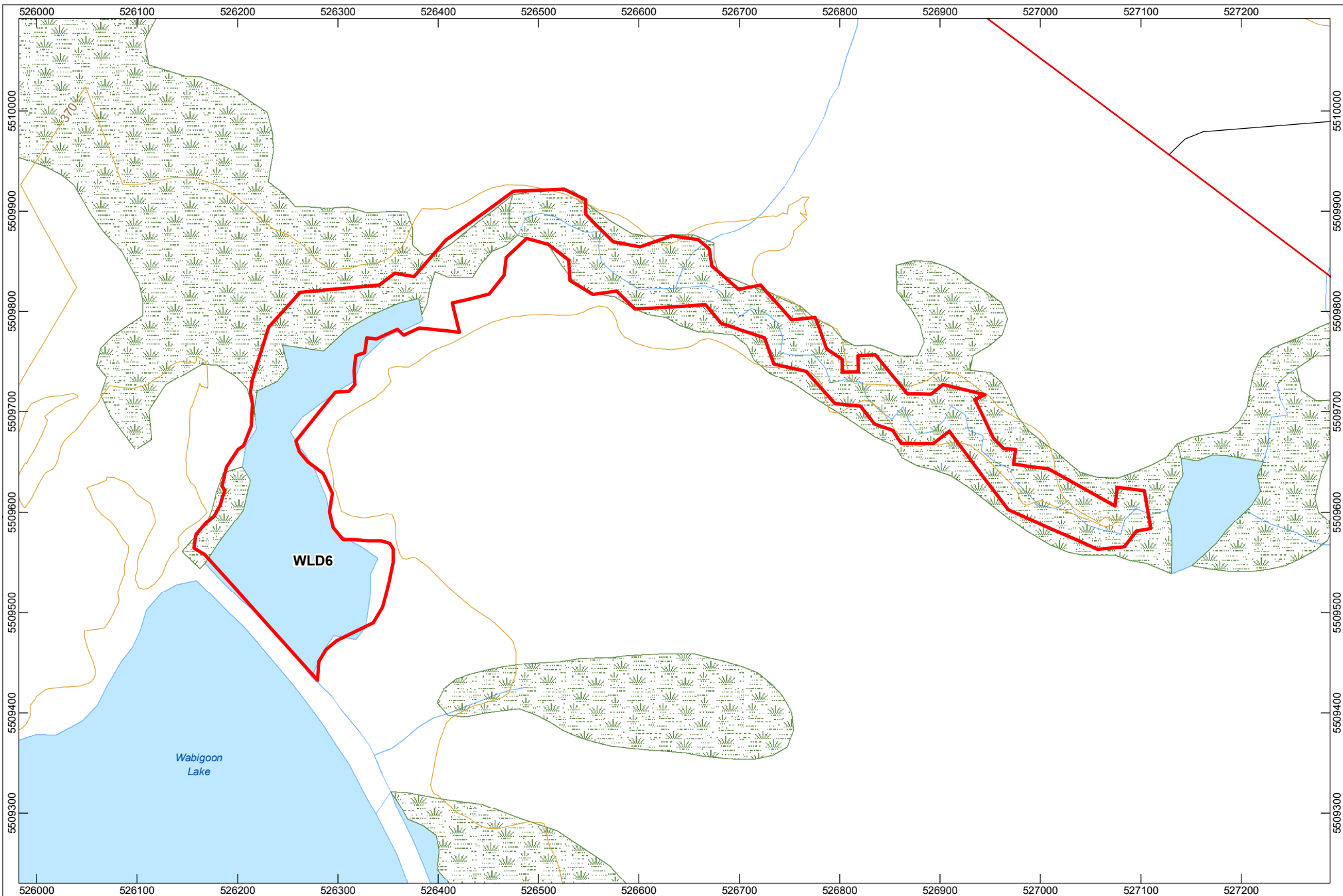
N

LEGEND

Vegetation Community

BE - Broad Leaved Emergents
 F - Floating Vegetation
 NE - Narrow Leaved Emergents
 RE - Robust Emergents
 SU - Submerged Vegetation
 TS - Tall Shrubs





GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

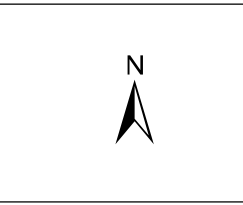
Wetland Boundary Map

Wetland - WLD6 REV.00

SCALE: 5000

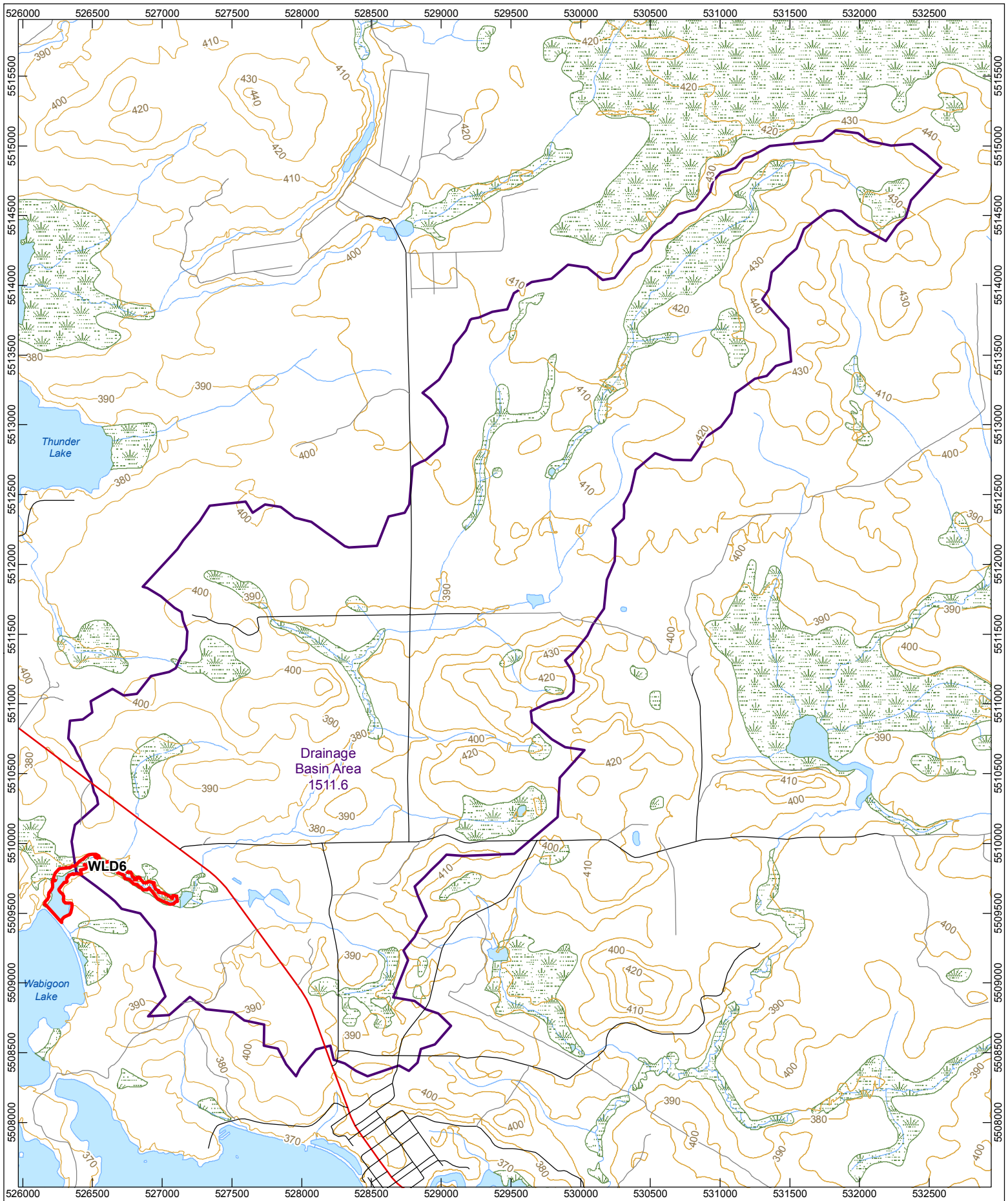
TREASURY METALS INC.

0 50 100 150
 Meters



- LEGEND**
- Expressway / Highway
 - Local Roadway
 - Resource / Recreational Road
 - Elevation Contour
 - Wetland Boundary: Ontario Wetland Evaluation System
 - Wetland: Land Information Data Set
 - Waterbody
 - Watercourse





GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Wetland Drainage Basin Map

Wetland - WLD6 REV.00

SCALE: 35000
 TREASURY METALS INC.

0 300 600
 Meters



- Expressway / Highway
- Local Roadway
- Resource / Recreational Road
- Elevation Contour

- Wetland Boundary: Ontario
- Wetland Evaluation System
- Drainage Basin

- Wetland: Land Information Data Set
- Waterbody
- Watercourse



viii) WETLAND SIZE AND BOUNDARIES

a) Single contiguous wetland area: 6.2 hectares

b) Wetland complex comprised of ___ individual wetlands:

Wetland Unit Number (for reference)	Size of each wetland unit
Wetland Unit No. 1	_____ ha
Wetland Unit No. 2	_____ ha
Wetland Unit No. 3	_____ ha
Wetland Unit No. 4	_____ ha
Wetland Unit No. 5	_____ 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

(Attach additional sheets if necessary)

TOTAL WETLAND SIZE _____ ha

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

N/A

1.0 BIOLOGICAL COMPONENT

1.1 PRODUCTIVITY

1.1.1 GROWING DEGREE-DAYS/SOILS

GROWING DEGREE DAYS SOILS

(check one)	Estimated Fractional Area
_____ <1600	_____ clay/loam
_____ 1600-2000	_____ silt/marl
<u> x </u> 2000-2400	_____ limestone
_____ 2400-2800	_____ sand
_____ 2800-3000	<u> 0.5 </u> humic/mesic
_____ >3000	<u> 0.5 </u> fibric
	_____ granite

SCORING:

Growing Degree Days	Clay/Loam	Silt/Marl	Lime-stone	Sand	Humic/Mesic	Fibric	Granite
<1600	12	11	9	7	7	6	4
1600-2000	15	13	11	9	8	7	5
2000-2400	18	15	13	11	9*0.5	8*0.5	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

(maximum score 30; if wetland contains more than one soil type, evaluate based on the fractional area)

Steps required for evaluation: (maximum score 30 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.

Growing Degree Days/Soils Score (maximum 30 points): 13

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.1.2 WETLAND TYPE (Fractional Area = area of wetland type/ total wetland area)

Fractional Area Score

Bog	_____	x 3 =	_____
Fen	_____	x 6 =	_____
Swamp	<u>0.5</u>	x 8 =	<u>4.0</u>
Marsh	<u>0.5</u>	x 15 =	<u>7.5</u>

Wetland Type Score (maximum 15 points): 11

1.1.3 SITE TYPE (Fractional Area = area of site type/ total wetland area)

Fractional Area Score

Isolated	_____	x 1 =	_____
Palustrine (permanent or Intermittent flow)	_____	x 2 =	_____
Riverine	_____	x 4 =	_____
Riverine (at rivermouth)	_____	x 5 =	_____
Lacustrine (at rivermouth)	_____	x 5 =	_____
Lacustrine (on enclosed bay, with barrier beach)	_____	x 3 =	_____
Lacustrine (exposed to lake)	<u>1.0</u>	x 2 =	<u>2.0</u>

Site Type Score (maximum 5 points): 2

1.2 BIODIVERSITY

1.2.1 NUMBER OF WETLAND TYPES

(Check one)	Score (Choose one only)
_____ one	9 points
_____ x two	13
_____ three	20
_____ four	30

Number of Wetland Types Score (Maximum 30 points): 13

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.2 VEGETATION COMMUNITIES

Attach a separate sheet listing community (map) codes, vegetation forms and dominant species. Use the form on the following page to record percent area by dominant vegetation form. This information will be used in other parts of the evaluation.

Communities should be grouped by number of forms. For example, 2 form communities might appear as follows:

2 forms

<u>Code</u>	<u>Forms</u>	<u>Dominant Species</u>
M6	re, ff	re, <i>Typha latifolia</i> ; ff, <i>Lemna minor</i> , <i>Wolffia</i>
S1	ts, gc	ts, <i>Salix discolor</i> ; gc, <i>Impatiens capensis</i> , <i>Thelypteris palustris</i>

Note that the dominant species for each form are separated by a semicolon. The dominant species (maximum of 2) within a form are separated by commas.

Scoring:

Total # of communities with 1-3 forms	Total # of communities with 4-5 forms	Total # of communities with 6 or more forms
1 = 1.5 points	1 = 2 points	1 = 3 points
2 = 2.5	2 = 3.5	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	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	+0.5 each additional community	+1 each additional community

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

$$6 + 13.5 + 15 = 34.5 = 35 \text{ points}$$

Vegetation Communities Score (maximum 45 points): 5

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Wetland Name: WLD7

Wetland Size (ha): 6.2

Vegetation Form % area in which form is dominant

h —

c —

dh —

dc —

ts 0.5

ls —

ds —

gc —

m —

ne 0.5

be —

re —

ff —

f —

su —

u (unvegetated) —

Total = **100%**

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.3 DIVERSITY OF SURROUNDING HABITAT

(Check all appropriate items)

<u> </u>	recent burn (< 5yr)
<u> x </u>	abandoned agricultural land
<u> x </u>	utility corridor
<u> x </u>	deciduous forest
<u> x </u>	recent cutover or clearcut (<5 yr)
<u> x </u>	coniferous forest
<u> x </u>	mixed forest (at least 25% conifer and 75% deciduous or vice versa)
<u> </u>	crops
<u> </u>	abandoned pits or quarries
<u> </u>	pasture
<u> </u>	ravine
<u> </u>	fence rows
<u> x </u>	open lake or deep river
<u> </u>	creek floodplain
<u> </u>	rock outcrop

Diversity of Surrounding Habitat Score (1 for each, maximum 7 points): 7

1.2.4 PROXIMITY TO OTHER WETLANDS

(Check first appropriate category only)

Scoring

1) <u> x </u>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river within 1.5 km	8 points
2) <u> </u>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
3) <u> </u>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river from 1.5 to 4 km away	5
4) <u> </u>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
5) <u> </u>	Within 0.75 km of other wetlands (different dominant wetland type) or open lake or river, but not hydrologically connected by surface water	5
6) <u> </u>	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
7) <u> </u>	No wetland within 1 km	0

Proximity to other Wetlands Score (Choose one only, maximum 8 points): 8

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.5 INTERSPERSION

Number of Intersections (check one)

- | | | |
|---------------|---------|----|
| 1) 26 or less | _____ | 3 |
| 2) 27 to 40 | _____ | 6 |
| 3) 41 to 60 | _____ | 9 |
| 4) 61 to 80 | _____ x | 12 |
| 5) 81 to 100 | _____ | 15 |
| 6) 101 to 125 | _____ | 18 |
| 7) 126 to 150 | _____ | 21 |
| 8) 151 to 175 | _____ | 24 |
| 9) 176 to 200 | _____ | 27 |
| 10) >200 | _____ | 30 |

Interspersion Score (Choose one only, maximum 30 points): 12
(70 intersections)

1.2.6 OPEN WATER TYPES

Permanently flooded (Check one)

- | | | |
|------------------|---------|----|
| 1) No open water | _____ | 0 |
| 2) Type 1 | _____ | 8 |
| 3) Type 2 | _____ | 8 |
| 4) Type 3 | _____ | 14 |
| 5) Type 4 | _____ | 20 |
| 6) Type 5 | _____ x | 30 |
| 7) Type 6 | _____ | 8 |
| 8) Type 7 | _____ | 14 |
| 9) Type 8 | _____ | 3 |

Open Water Score (Choose one only, maximum 30 points): 30

1.3 SIZE

6.2 hectares

Size Score (Biological Component) (maximum 50 points): 25

Table 2. Evaluation Table for Size Score (Biological Component)

Wetland size (ha)	Total Score for Biodiversity Subcomponent									
	<37	37-47	48-60	61-72	73-84	85-96	97-108	109-120	121-132	>132
<20 ha	1	5	7	8	9	17	25	34	43	50
20-40	5	7	8	9	10	19	28	37	46	50
41-60	6	8	9	10	11	21	31	40	49	50
61-80	7	9	10	11	13	23	34	43	50	50
81-100	8	10	11	13	15	25	37	46	50	50
101-120	9	11	13	15	18	28	40	49	50	50
121-140	10	13	15	17	21	31	43	50	50	50
141-160	11	15	17	19	23	34	46	50	50	50
161-180	13	17	19	21	25	37	49	50	50	50
181-200	15	19	21	23	28	40	50	50	50	50
201-400	17	21	23	25	31	43	50	50	50	50
401-600	19	23	25	28	34	46	50	50	50	50
601-800	21	25	28	31	37	49	50	50	50	50
801-1000	23	28	31	34	40	50	50	50	50	50
1001-1200	25	31	34	37	43	50	50	50	50	50
1201-1400	28	34	37	40	46	50	50	50	50	50
1401-1600	31	37	40	43	49	50	50	50	50	50
1601-1800	34	40	43	46	50	50	50	50	50	50
1801-2000	37	43	47	49	50	50	50	50	50	50
>2000	40	46	50	50	50	50	50	50	50	50

2.0 SOCIAL COMPONENT

2.1 ECONOMICALLY VALUABLE PRODUCTS

2.1.1 WOOD PRODUCTS

Area of wetland forested (ha); not wetland size

1) <5 ha	<u> x </u>	0
2) 5 – 25 ha	<u> </u>	4
3) 26 – 50 ha	<u> </u>	6
4) 51 – 100 ha	<u> </u>	8
5) 101-200 ha	<u> </u>	11
6) > 200 ha	<u> </u>	14

Source of information: Forest Resource Inventory (FRI – GIS data)

Wood Products Score (Score one only, maximum 14 points): 0

2.1.2 LOWBUSH CRANBERRY

1) Present	<u> </u>	2
2) Absent	<u> x </u>	0

Source of information: Field observation

Lowbush Cranberry Score (maximum 2 points): 0

2.1.3 WILD RICE

1) Present	<u> </u>	10
2) Absent	<u> x </u>	0

Source of information: Field observation

Wild Rice Score (maximum 10 points): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

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

- | | | |
|------------|-------------------|----|
| 1) Present | <u> x </u> | 12 |
| 2) Absent | <u> </u> | 0 |

Source of information: Field observation

Commercial Fish Score (maximum 12 points): 12

2.1.5 FURBEARERS

(Consult Appendix 9)

	<u>Name of furbearer</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	<u>North American Beaver</u>	<u>Castor Canadensis</u>	<u>field observatiuon- old dams/lodge</u>
2)	<u>Muskrat</u>	<u>Ondatra zibethicus</u>	<u>field obervation</u>
3)	<u> </u>	<u> </u>	<u> </u>
4)	<u> </u>	<u> </u>	<u> </u>
5)	<u> </u>	<u> </u>	<u> </u>

Scoring: 3 points for each species, maximum 12

Furbearer Score (maximum 12 points): 6

2.2 RECREATIONAL ACTIVITIES

Type of Wetland-Associated Use			
Intensity of Use	Hunting	Nature Enjoyment/ Ecosystem Study	Fishing
High	40 points	40 points	40 points
Moderate	20	20	20
Low	8	8	8
Not Possible	0	0	0

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

Sources of information:

- Hunting: Field observation
- Nature: Field observation
- Fishing: Field observation

Recreational Activities Score (maximum 80 points): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

2.4.2 FACILITIES AND PROGRAMS

1) Staffed interpretation centre with shelters, trails, literature	_____	8
2) No interpretation centre or staff, but a system of self-guided trails and observation points, or brochures available	_____	4
3) Facilities such as maintained paths (e.g., wood chips) Boardwalks, boat launches, or observation towers	_____	2
4) No facilities or programs	_____ x	0

Source of information: _____

Facilities and Programs Score (maximum 8 points): 0

2.4.3 RESEARCH AND STUDIES

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

Attach list of known reports by above categories

- *DST Consulting Engineers Aquatic Baseline Environmental Reports 2014 (2012 data), Reference Number OE-KN-018101*

Research and Studies Score (Score is cumulative, maximum 12 points): 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	16
0.5 to 10 km from settlement	26	16	10
10 to 60 km from settlement	12	8	4
>60 km from settlement	5	2	0
>100 km from settlement	0	0	0

Name of settlement: Wabigoon Lake Ojibway Nation (WLON)

Proximity to Human Settlement Score (maximum 40 points): 10

2.6 OWNERSHIP (FA = fractional area)

Wetland in public or private ownership, held under contract or in trust for wetland protection

Fractional Area Score

_____ x 10 = _____

Wetland in public ownership, not as above

1.0 x 8 = 8

Wetland in private ownership, not as above

_____ x 4 = _____

Source of information: Treasury Resources Inc.

Ownership Score (maximum 10 points): 8

Northern Ontario Wetlands Evaluation, Data and Scoring Record

2.7 SIZE (See size table -- Social Component)

6.2 hectares

Size Score (Social Component) (maximum 20 points): 5

Table 3. Evaluation Table for Size Score (Social Component)

Wetland size (ha)	Total for Size Dependent Score									
	<30	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
2-4	1	2	4	8	12	13	14	14	15	16
5-8	2	2	5	9	13	14	15	15	16	16
9-12	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	18	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	19	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	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.

2.8.1 ABORIGINAL VALUES

Full documentation of sources must be attached to the data record.

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

2.8.2 CULTURAL HERITAGE

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

Aboriginal Values/Cultural Heritage Score (maximum 30 points): 0

3.0 HYDROLOGICAL COMPONENT

3.1 FLOOD ATTENUATION

If the wetland is a complex including isolated wetlands, apportion the 100 points according to area. For example, if 10 ha of a 100 ha complex is isolated, the isolated portion receives the maximum proportional score of 10. The remainder of the wetland is then evaluated out of the remaining 90 points.

Step 1.

If wetland is entirely Isolated, go directly to Step 5.

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 5.

All other wetlands, go through steps 2, 3, 4 and 5.

Step 2.

Determination of Upstream Detention Factor (DF)

- (a) Wetland area (ha) _____
- (b) Total area (ha) of upstream detention areas _____
(include the wetland itself)
- (c) Ratio of (a):(b) _____
- (d) Upstream detention factor: (c) x 2 = _____
(Maximum allowable factor = 1)

Step 3.

Determination of Peak Flow Attenuation Factor (AF)

- (a) Wetland area (ha) _____
- (b) Size of catchment basin (ha) upstream of wetland _____
(include wetland itself in catchment area)
- (c) Ratio of (a):(b) _____
- (d) Wetland attenuation factor: (c) x 10 = _____
(Maximum allowable factor = 1)

Step 4.

Determination of Wetland Surface Form Factor (FF)

From the list below, select the surface form which best describes the wetland.

	Factor	
Flooded with little or no aquatic vegetation	_____	0
Flooded but with submergent, emergent or floating vegetation	_____	0.2
Flat (lawn) vegetation (typical of fens)	_____	0.5
Hummock-depression microtopography	_____	0.7
Patterned (e.g., string bog, ribbed fen)	_____	1.0

Surface Form Factor (FF) _____

(Maximum allowable factor = 1)

Step 5. Calculation of Final Score

- 1. Wetland is entirely Isolated 100 points
- 2. Wetland is lacustrine and the ratio of wetland area:lake area is <0.1 0 points
- 3. Wetland is riverine along the St. Mary's River 0 points
- 4. For all other wetlands*, calculate as follows:
 - (a) Upstream Detention Factor (DF) (Step2) _____
 - (b) Wetland Attenuation Factor (AF) (Step 3) _____
 - (c) Surface Form Factor (FF) (Step 4) _____

$[(DF + AF + FF)/3] \times 100^*$ _____

* Unless wetland is a complex including isolated portions -- see above

Total Flood Attenuation Score (maximum 100 points): 0

3.2 GROUND WATER RECHARGE

3.2.1 SITE TYPE

- 1) Wetland > 50% lacustrine (by area) or located on the St. Mary's River Score = 0
- 2) Wetland not as above. Calculate final score as follows:
(FA = area of site type/total area of wetland)
 - _____ FA of isolated or palustrine wetland x 20 = ____
 - _____ FA of riverine wetland x 5 = ____
 - _____ FA of lacustrine wetland (wetland <50% lacustrine) x 0 = ____

Site Type Score: (maximum 20 points): 0

3.2.2 SOILS

EVALUATION:

Dominant Wetland Type	Sand, loam, gravel, till	Clay, bedrock
Lacustrine or on St. Mary's River	0	0
Isolated	10	5
Palustrine	7	4
Riverine (not on St. Mary's River)	5	2

Hydrological Soil Class Score (maximum 10 points): 0

3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

3.3.1 WATERSHED IMPROVEMENT FACTOR

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

<u>Site Type</u>	<u>Improvement Factor (IF)</u>
Isolated	FA _____ x 0.5 = _____
Riverine	FA _____ x 1.0 = _____
Palustrine with no inflow	FA _____ x 0.7 = _____
Palustrine with inflows	FA _____ x 1.0 = _____
Lacustrine on lake shoreline	FA _____ x 0.2 = _____
Lacustrine at lake inflow or outflow	FA <u>1.0</u> x 1.0 = <u>1.0</u>

Watershed Improvement Score (IF x 30) (maximum = 30): 30

3.3.2 ADJACENT AND WATERSHED LAND USE EVALUATION:

Step 1. Determination of Maximum Initial Score

_____ Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)
 _____ x _____ All other wetlands (Go through steps 2, 3, 4, and 5b)

Step 2. Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in an extensive manner.

Choose one		
> 50% of catchment basin	_____	20
20-50% of catchment basin	_____ x _____	14
< 20% of catchment basin	_____	4

Score for BLU:14

Step 3. Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

Choose the highest only

Major corridor ¹	_____	15
Secondary corridor	_____	11
Tertiary corridor	_____	6
Temporary or abandoned	_____	3
None	_____ x _____	0

Score for LUU: 0

¹ Major, secondary and tertiary roads are those that are indicated as such on the provincial highways map. Major hydro corridors are trunk lines coming directly from a generating station. Major pipelines are trans-continental lines. Secondary corridors are regional distribution lines (i.e. multi-cable hydro corridors not emanating directly from a generating station or regional gas distribution lines). Tertiary corridors are single hydro lines or local gas distribution lines (i.e. to domestic users).

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Step 4. Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits use for local road construction), etc. Score as 'present' only if a point source land use is located less than 1 km upstream from the wetland.

a) Present	_____	15
b) Absent	_____x_____	0

Score for PS: 0

Step 5. Calculation of total score for Adjacent and Watershed Land Use

	Score
a) Wetland on the Great Lakes or St. Mary's River	0
b) All other wetlands, calculate as follows:	

Final Score BLU + LUU + PS: 14

3.3.3 VEGETATION FORM

Choose the category that best describes the vegetation of the wetland

Trees, shrubs or herbs (h, c, ts, ls, gc)	_____	8
Emergents, submergents (ne, re, be, f, ff, su)	_____x_____	10
Little or no vegetation (u)	_____	0

Dominant Vegetation Form Score (maximum 10 points): 10

3.4 CARBON SINK

Choose the category that best describes the wetland.

1) Wetland a bog or fen with > 50% organic soils	_____	15
2) Wetland has organic soils occupying 10 to 50% of the area (i.e. mainly mineral or undesignated soil, any wetland type)	_____	6
3) Marshes and swamps with >50% organic soil	_____x_____	9
4) Wetland with <10% organic soils	_____	0

Carbon Sink Score (maximum 15 points): 9

3.5 SHORELINE EROSION CONTROL

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.

- Step 1. _____ Wetland entirely isolated or palustrine Score 0
 x Any part of the wetland riverine, or lacustrine (proceed to Step 2)

Step 2. Choose the one characteristic that best describes the shoreline vegetation.
 (See text for the definition of shoreline.)

- Trees and shrubs x 15
 Emergent vegetation _____ 8
 Submergent vegetation _____ 6
 Other shoreline vegetation _____ 3
 No vegetation _____ 0

Shoreline Erosion Control Score (maximum 15 points): 15

3.6 GROUNDWATER DISCHARGE

(Circle the characteristics that best describe the wetland being evaluated and sum the scores.)

Category	Catchment interaction		
Wetland type	Bog = 0	Swamp/Marsh = 2	Fen = 5
Basin topography	Flat/Rolling = 0	Hilly = 2	Major relief break = 5
Wetland area:Upslope catchment area	Large (>50%) = 0	Moderate (6 - 50%) = 2	Small (<5%) = 5
Lagg development	None found = 0	Minor = 2	Extensive = 5
Seeps at wetland edge	None found = 0	1 to 3 seeps = 5	4 or more seeps = 10
Iron precipitates evident at edge	None = 0	1-3 deposits = 2	4 or more deposits = 5
Surface marl deposits	None = 0	1-3 deposits = 2	> 3 = 5
Wetland pH	Low < 4.2 = 0	Moderate 4.2-5.7 = 5	High >5.7 = 10
Catchment soil coverage	Patchy = 0	Thin (<20 cm) = 2	Thick = 5
Catchment soil permeability	Low = 0	Moderate = 2	High = 5

(Scores are cumulative, maximum score 30 points)

Groundwater Discharge Score (maximum 30 points): 17

4.0 SPECIAL FEATURES COMPONENT

4.1 RARITY

4.1.1 WETLANDS

Hills Site Region and Site District (5E only): _____

Wetland type (check one or more)

- Bog
- Fen
- Swamp
- Marsh

Evaluation Table for Scoring Rarity of Wetland Type.

Unit Number	Site Region & District	Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	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
5E-1	Thessalon	10	0	30	20
5E-2	Gore Bay	20	0	20	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tomiko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E-12	Renfrew	0	0	30	10
5-S	Lake of the Woods	10	10	20	10

Rarity of Wetland Type Score (Maximum 70 points): 30

4.1.2 SPECIES

4.1.2.1 BREEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

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

Attach documentation

Scoring

For one species	250
For each additional species	250

(Score is cumulative, no maximum score)

Breeding Habitat for Endangered or Threatened Species Score (no maximum): 0

4.1.2.2 TRADITIONAL MIGRATION OR FEEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach documentation

Scoring

For one species	150 points
For each additional species	75

(Score is cumulative, no maximum score)

Traditional Habitat for Endangered or Threatened Species Score (no maximum): 0

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4.1.2.3 PROVINCIALY SIGNIFICANT ANIMAL SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	<u>Bald Eagle</u>	<u><i>Haliaeetus leucocephalus</i></u>	<u>field observation</u>
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant animal species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.) (no maximum score)

Provincially Significant Animal Species Score (no maximum): 50

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4.1.2.4 PROVINCIALY SIGNIFICANT PLANT SPECIES

(Scientific names must be recorded)

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant plant species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species Score (no maximum): 0

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4.1.2.5 REGIONALLY SIGNIFICANT SPECIES (SITE REGION)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

SIGNIFICANT IN SITE REGION:

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary; Attach documentation

** Score only if there is an approved list.

No. of species significant in Site Region

One species	=	20	6 species	=	55
2 species	=	30	7 species	=	58
3 species	=	40	8 species	=	61
4 species	=	45	9 species	=	64
5 species	=	50	10 species	=	67

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

Significant Species (Site Region) Score (no maximum): 0

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4.2.1.6 LOCALLY SIGNIFICANT SPECIES (SITE DISTRICT)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Source of information: _____

Attach separate list if necessary; Attach documentation.

Scoring

No. of species significant in Site District

One species	=	10	6 species	=	41
2 species	=	17	7 species	=	43
3 species	=	24	8 species	=	45
4 species	=	31	9 species	=	47
5 species	=	38	10 species	=	49

For each significant species over 10 in the wetland, add 1 point.

Locally Significant Species (Site District) Score (no maximum): 0

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4.1.2.7 SPECIES OF SPECIAL STATUS

Black Duck

Suitable breeding habitat present and within assessment range (Figure 17)

Assessment Category		
40 - 80 Indicated Pairs/100 km sq	_____	25
20 - 40 Indicated Pairs/100 km sq	_____	20
10 - 20 Indicated Pairs/100 km sq	_____	15
5 - 10 Indicated Pairs/100 km sq	<u> x </u>	10
1 - 5 Indicated Pairs/100 km sq	_____	5
Habitat not suitable	_____	0
Out of assessment range	_____	0

Black Duck Score (maximum 25 points): 10

4.2 SIGNIFICANT FEATURES AND HABITATS

4.2.1 NESTING OF COLONIAL WATERBIRDS

Status	Name of species	Source of information	Score
Currently nesting			50 points
Known to have nested within past 5 years			25
Active feeding area (great blue heron excluded)			15
None known			0

Attach documentation (nest locations, etc., if known)

Colonial Waterbirds Score (maximum 50 points): 0

4.2.2. WINTER COVER FOR WILDLIFE

(Check only highest level of significance)		<u>Score</u> (one only)
1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	25
3) Locally significant	_____	10
4) Little or poor winter cover present	<u> x </u>	0

Source of information: _____

Winter cover for Wildlife Score (maximum 100 points): 0

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4.2.3 WATERFOWL STAGING AND/OR MOULTING

(Check only highest level of significance for both staging and moulting; score is cumulative across columns, maximum 150 points)

	<u>Staging</u>	Score (one only)	<u>Moulting</u>	Score (one only)
1) Nationally significant	_____	150	_____	150
2) Provincially significant	_____	100	_____	100
3) Regionally significant	_____	50	_____	50
4) Known to occur	_____	10	_____	10
5) Not possible	_____	0	_____	0
6) Not known	<u> x </u>	0	_____	0

Source of information: _____

Waterfowl Moulting and Staging Score (maximum 150 points): 0

4.2.4 WATERFOWL BREEDING

(Check only highest level of significance)

1) Provincially significant	_____	100
2) Regionally significant	_____	50
3) Habitat suitable	<u> x </u>	10
4) Habitat not suitable	_____	0

Source of information: _____

Waterfowl Breeding Score (maximum 100 points): 10

4.2.5 MIGRATORY PASSERINE, SHOREBIRD OR RAPTOR STOPOVER AREA

(check highest applicable category)

1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	10
3) Not significant	<u> x </u>	0

Source of information: _____

Passerine, Shorebird or Raptor Stopover Score (maximum 100 points): 0

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4.2.6 UNGULATE HABITAT

EVALUATION:

Score (1) + (2) + one of (3) to (6)

(1) Ungulate summer cover	_____	15
(2) Mineral licks	_____	50
(3) Moose aquatic feeding area Class 1	<u> x </u>	0
(4) Moose aquatic feeding area Class 2	_____	10
(5) Moose aquatic feeding area Class 3	_____	20
(6) Moose aquatic feeding area Class 4	_____	35

(Score is cumulative for a maximum possible score of 100)

Ungulate Habitat Score (maximum 100 points): 0

4.2.7 FISH HABITAT

4.2.7.1 Spawning and Nursery Habitat

Table 5. Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5 - 4.9	0.2
5.0 - 9.9	0.4
10.0 - 14.9	0.6
15.0 - 19.9	0.8
20.0+ ha	1.0

Step 1:

_____ Fish habitat is not present within the wetland (Score = 0)

 x Fish habitat is present within the wetland (Go to Step 2)

Step 2: Choose only one option

1) _____ Significance of the spawning and nursery habitat within the wetland is known
(Go to Step3)

2) x **Significance of the spawning and nursery habitat within the wetland is not known (Go through Steps 4, 5, 6, and 7)**

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Step 3: Select the highest appropriate category below, attach documentation:

- 1) Significant in Site Region _____ 100
- 2) Significant in Site District _____ 50
- 3) Locally Significant Habitat (5.0+ ha) _____ 25
- 3) Locally Significant Habitat (<5.0 ha) _____ 15

Score for Spawning and Nursery Habitat (maximum score 100 points): 0

Step 4: Proceed to Steps 4 to 7 only if Step 3 was not scored

(**Low Marsh:** marsh area from the existing water line out to the outer boundary of the wetland)

- _____ Low marsh not present (Continue to Step 5)
- x Low marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community. Check the appropriate Vegetation Group (see Appendix 16) for each Low Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass	x	1.6	0.2	6	1.2
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
5	Duckweed				2	
6	Smartweed-Waterwillow				6	
7	Waterlily-Lotus				11	
8	Waterweed-Watercress				9	
9	Ribbongrass				10	
10	Coontail-Naiad-Watermilfoil				13	
11	Narrowleaf Pondweed				5	
12	Broadleaf Pondweed				8	
Total Score (maximum 75 points)						1.2

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Step 5: High Marsh: area from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.

 x High marsh not present (Continue to Step 6)
 High marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community. Check the appropriate Vegetation Group for each High Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass				6	
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
Total Score (maximum 25 points)						

Step 6: Swamp: Swamp communities containing fish habitat, either seasonally or permanently. Determine the total area of seasonally flooded swamps and permanently flooded swamps containing fish habitat.

 Swamp containing fish habitat not present (Continue to Step 7)
 x Swamp containing fish habitat present (Score as follows)

Swamp containing fish habitat	Present (check)	Total area (ha)	Area Factor (see Table 5)	Score	TOTAL SCORE (factor x score)
seasonally flooded	x	1.0	0.2	10	2
permanently flooded				10	
SCORE (maximum 20 points)					2

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Step 7: Calculation of final score

Score for Spawning and Nursery Habitat (Low Marsh) (maximum 75 points)	<u>1.2</u>
Score for Spawning and Nursery Habitat (High Marsh) (maximum 25 points)	_____
Score for Swamp Containing Fish Habitat (maximum 20 points)	<u>2</u>

Sum (maximum score 100 points): 3

4.2.7.2 Migration and Staging Habitat

Step 1:

- 1) Staging or Migration Habitat is not present in the wetland _____ (Score = 0)
- 2) Staging or Migration Habitat is present in the wetland, significance of the habitat is known _____
(Go to Step 2)
- 3) Staging or Migration Habitat is present in the wetland, significance of the habitat is not known x _____
(Go to Step 3)

Only one of Step 2 or Step 3 is to be scored.

Step 2: Select the highest appropriate category below, attach documentation:

- 1) Significant in Site Region _____ 25
- 2) Significant in Site District _____ 15
- 3) Locally Significant _____ 10
- 4) Fish staging and/or migration habitat present, but not as above _____ 5

Score for Fish Migration and Staging Habitat (maximum score 25 points): 0

Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to be the dominant site type). Note name of river for 2) and 3).

- 1) Wetland is riverine at rivermouth or lacustrine at rivermouth _____ 25
- 2) Wetland is riverine, within 0.75 km of rivermouth _____ 15
- 3) Wetland is lacustrine, within 0.75 km of rivermouth _____ 10
- 4) Fish staging and/or migration habitat present, but not as above x _____ 5

Score for Staging and Migration Habitat (maximum score 25 points): 5

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4.3 ECOSYSTEM AGE (Fractional Area = Area of wetland type/total area of wetland)

	Fractional Area		Scoring
Bog	_____	x 25	_____
Fen, treed to open on deep soils, floating mats or marl	_____	x 20	_____
Fen, on limestone rock	_____	x 5	_____
Swamp	<u>0.5</u>	x 3	<u>1.5</u>
Marsh	<u>0.5</u>	x 0	<u>0</u>

Ecosystem Age Score (maximum 25 points): 1

4.4 GREAT LAKES COASTAL WETLANDS

Score for coastal (see text for definition) wetlands only

Choose one only

wetland <10 ha	_____	10
wetland 10-50 ha	_____	25
wetland 51-100 ha	_____	50
wetland >100 ha	_____	75

Great Lakes Coastal Wetlands Score (maximum 75 points): 0

5.0 EXTRA INFORMATION

5.1 PURPLE LOOSESTRIFE

Absent/Not seen x

Present

- 1) One location in wetland
- Two to many locations

Abundance code

- a) < 20 plants
- b) 20-99 plants
- c) 100-999 plants
- d) > 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)
- Seasonal (1 to 3 months) x
- 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
- Observed or heard on lake or river adjoining the wetland
- x not as above

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INVESTIGATORS

Krista Prosser

AFFILIATION

DST Consulting engineers

DATES WETLAND VISITED

September 7, 2012

DATE THIS EVALUATION COMPLETED:

February 13, 2014

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

4

WEATHER CONDITIONS

i) at time of field work : 13°C, rain

ii) summer conditions in general : precipitation levels were high in June and August

OTHER POTENTIALLY USEFUL INFORMATION:

An additional site visit is recommended to occur during the spring or early summer to acquire a more complete list of all aquatic vegetation species and sedges. Also to better assess open water areas and aquatic habitat.

CHECKLIST OF PLANT AND ANIMAL SPECIES RECORDED IN THE WETLAND:

attach list of all flora and fauna observed in the wetland:

* Indicate if voucher specimens or photos have been obtained, where located, etc.)

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SUMMARY OF EVALUATION RESULT

Wetland WLD7_____

TOTAL FOR 1.0 BIOLOGICAL COMPONENT 126__

TOTAL FOR 2.0 SOCIAL COMPONENT 56__

TOTAL FOR 3.0 HYDROLOGICAL COMPONENT 95

TOTAL FOR 4.0 SPECIAL FEATURES COMPONENT 109__

WETLAND TOTAL 386

INVESTIGATORS

Krista Prosser,

AFFILIATION

DST Consulting Engineers

DATE: February 13, 2014

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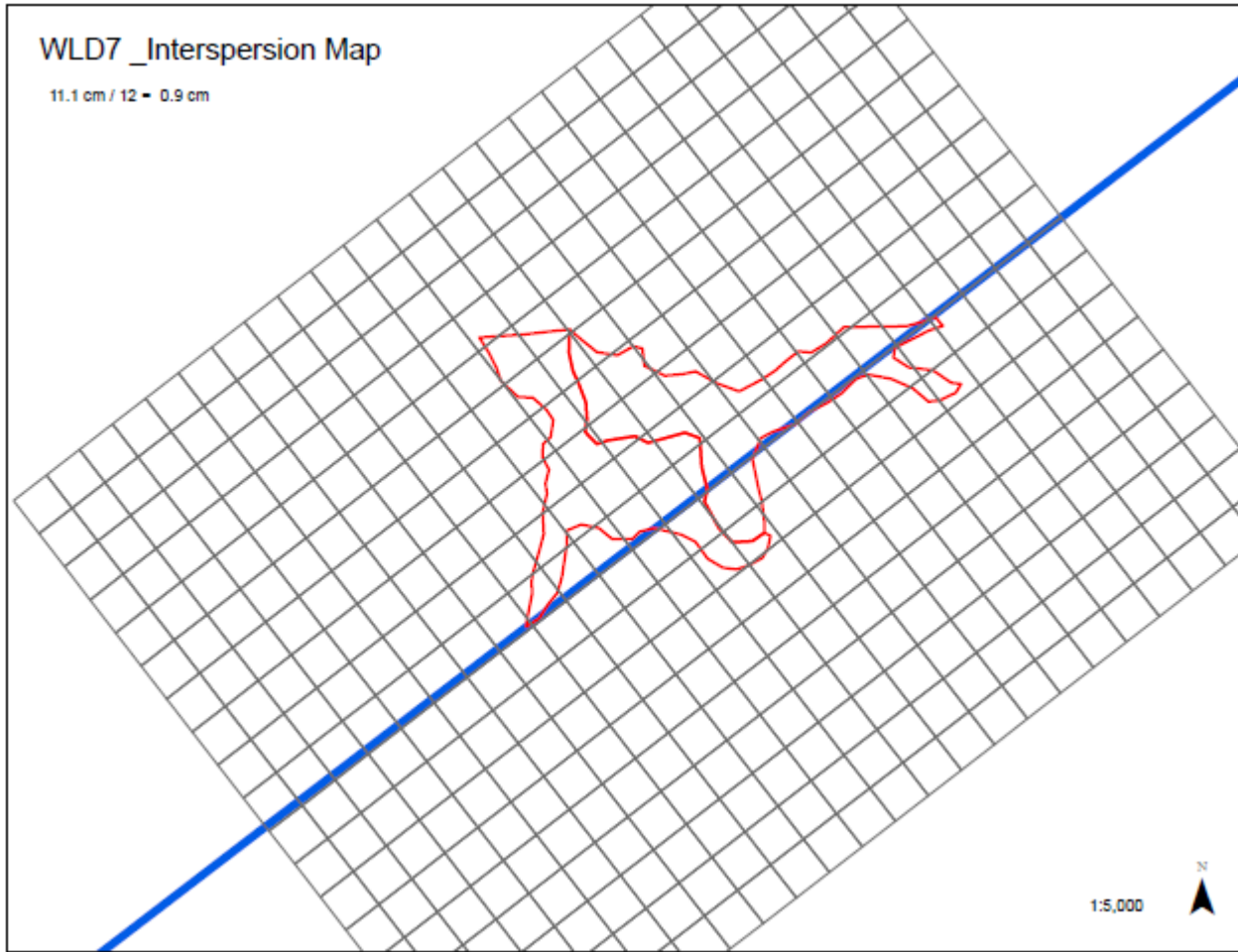
Wetland ID: wld7		Site Type: Lacustrine		
Date Surveyed: September 7, 2012				
<u>BIOLOGICAL COMPONENT</u>				
Productivity		Growing Degree-Day/soils (max 30)	13	
		Wetland Type (max 15)	11	
		Site Type (max 5)	2	
Biodiversity	=	Number of Wetland types (max 30)	13	
		Vegetation Communities (max 45)	5	
		Diversity of Surrounding Habitat (max 7)	7	
		Proximity to other wetlands (max 8)	8	
		Interspersion (max 30)	12	
		Open water type (max 30)	30	
		Size (max 50)	25	
Total Biological Component (not to exceed 250)			126	
<u>SOCIAL COMPONENT</u>				
Economically Valuable Products		Wood products (max 14)	0	
		Low Bush Cranberry (max 2)	0	
		Wild rice (max 10)	0	
		Commercial fish (max 12)	12	
		Furbearers (max 12)	6	
Recreational Activities		Hunting/Fishing/Nature (max 80)	0	
		Landscape Distinctness (max 3)	3	
		Absence of human disturbance (max 7)	7	
		Educational Uses (max 20)	0	
		Facilities and Programs (8)	0	
		Research and Studies (max 12)	5	
		Proximity to human settlement (max 40)	10	
		Ownership (max 10)	8	
		Size (max 20)	5	
		Aboriginal and cultural (max 30)	0	
Total for Social Component (not to exceed 250)			56	
<u>HYDROLOGICAL COMPONENT</u>				
Ground Water Recharge		Flood attenuation (max 100)	0	
		Site type (20)	0	
		Hydrological Soils (max 10)	0	
Downstream Water Quality Improvement		Watershed Improvement (max 30)	30	
		Adjacent Watershed Land Use (max 60)	14	
		Vegetation form (max 10)	10	
		Carbon Sink (max 15)	9	
		Shoreline erosion control (max 15)	15	
		Groundwater Discharge (max 30)	17	
Total for Hydrological Component (not to exceed 250)			95	
<u>SPECIAL FEATURES</u>				
Rarity		Wetlands (max 70)	30	
		Endangered/Threatened spp. breeding habitat (no max)	0	
		Traditional use by endanger/threatend spp. (no max)	0	
		Provincially significant animals (no max)	50	
		Provincially significant plants (no max)	0	
		Regionally significant spp. (no max)	0	
		Locally significant spp. (no max)	0	
		Species of Special Status (Black Duck) (max 25)	10	
	Significant Features and Habitats		Colonial Waterbirds (max 50)	0
			Winter Cover for Wildlife (max 100)	0
		Waterfowl Staging/Moutling (max 150)	0	
		Waterfowl Breeding (max 100)	10	
		Migratory Passerine, Shorebird or Raptor stopover (max 100)	0	
		Ungulate Habitat (max 100)	0	
		Fish Nursery Habitat (max 100)	3	
		Fish Staging/Migration Habitat Present (max 25)	5	
	Ecosystem Age (max 25)	1		
	Great Lake Coastal Wetlands (max 75)	0		
Total for Special features (not to exceed 250)			109	
TOTAL			386	

Northern Ontario Wetlands Evaluation, Data and Scoring Record






Scientific Name	Common Name
<i>Abies balsamea</i>	Balsam fir
<i>Alnus incana</i>	Speckled Alder
<i>Asclepias incarnata</i>	Swamp milkweed
<i>Aster borealis</i>	Rush aster
<i>Aster lanceolatus</i>	Lance-leaved aster
<i>Aster puniceus</i>	Purple stemmed aster
<i>Bidens cernua</i>	Nodding bur marigold
<i>Bidens frondosa</i>	Devil's beggars ticks
<i>Calamagrostis canadensis</i>	Canada Bluejoint
<i>Calla palustris</i>	Water arum
<i>Callitriche hermaphroditica</i>	Submerged water starwort
<i>Caltha palustris</i>	Marsh marigold (scattered)
<i>Carex bebbii</i>	Bebb's sedge
<i>Carex utriculata</i>	Beaked Sedge
<i>Cinna latifolia</i>	Drooping Woodreed
<i>Cirsium multicum</i>	Swamp thistle
<i>Climacium dendroides</i>	Tree moss
<i>Cornus stolonifera</i>	Red-Osier dogwood
<i>Eriophorum viridi-carniatum</i>	Green cottongrass
<i>Galium triflorum</i>	Fragrant Bedstraw
<i>Glyceria borealis</i>	Northern manna
<i>Glyceria grandis</i>	Tall manna grass
<i>Gymnocarpium dryopteris</i>	Oak fern
<i>Lonicera oblongifolia</i>	Swamp honeysuckle
<i>Mnium spp.</i>	Mniums
<i>Nuphar pumila</i>	Small yellow pond lily
<i>Phalaris arundinacea</i>	Reed canary grass
<i>Phragmites australis</i>	Common reed
<i>Picea mariana</i>	Black Spruce
<i>Poa palustris</i>	Fowl blue grass
<i>Potamogeton natans</i>	Floating-leaved pondweed
<i>Rumex orbiculatus</i>	Great water dock
<i>Sagittaria rigida</i>	Broad-leaved arrowhead
<i>Salix spp.</i>	Willow
<i>Scirpus cyperinus</i>	Wool grass
<i>Scorpidium scorpiodes</i>	Scorpion's tail
<i>Sorbus americana</i>	Mountain ash
<i>Sparganium eurycarpum</i>	Large-Fruited Burreed
<i>Sparganium fluctuans</i>	Floating-leaved Burreed
<i>Thalictrum pubescens</i>	Tall Meadow Rue
<i>Thuja occidentalis</i>	Eastern White Cedar
<i>Typha latifolia</i>	Common Cattail
<i>Vallisneria spiralis</i>	Tape Grass
<i>Viburnum opulus</i>	Highbush cranberry

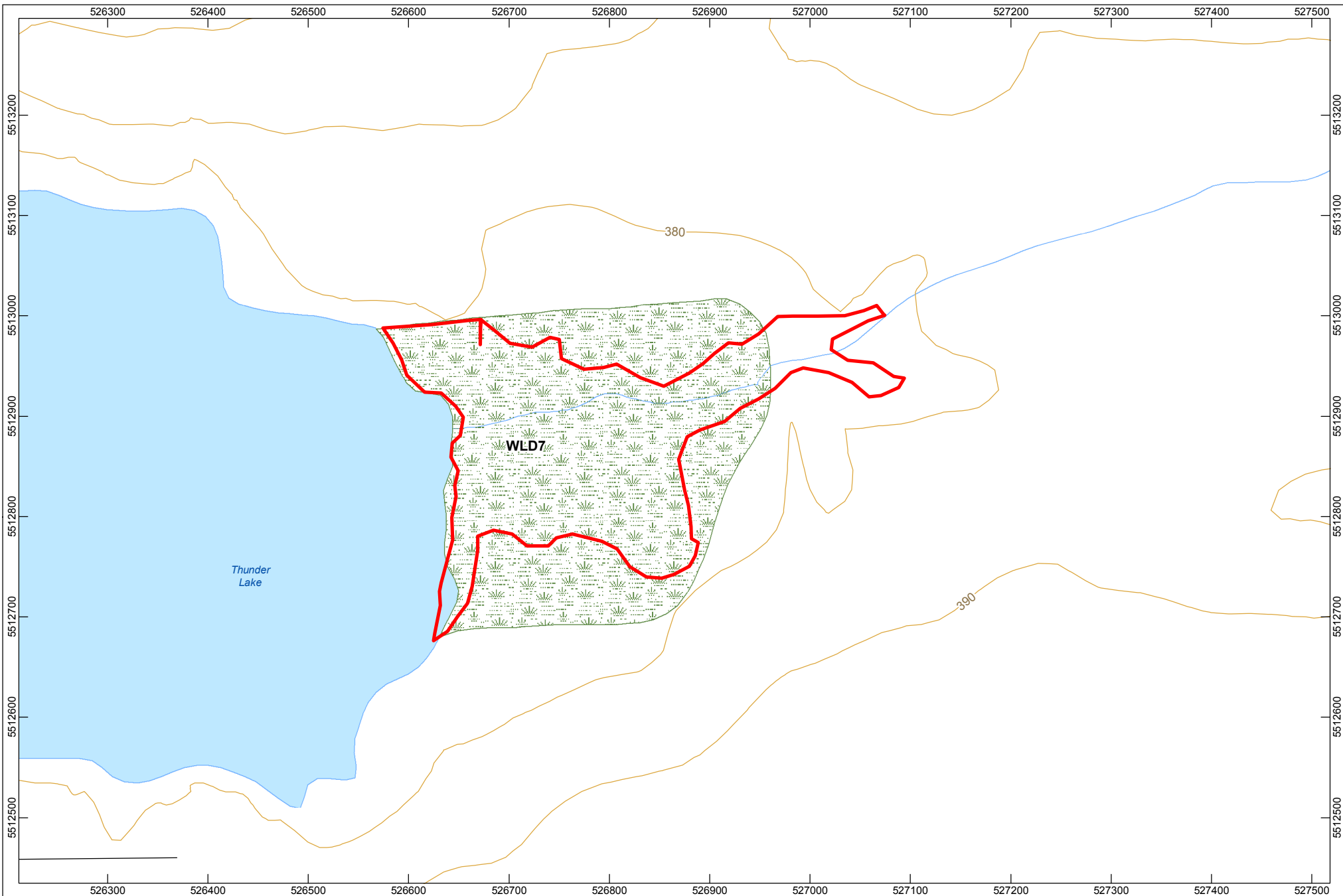
Wildlife Observed

Common Loon
 Broadwinged Hawk
 Blue Jay
 Red Breasted Nuthatch
 Red Winged Blackbird
 Bald Eagle
 Beaver evidence
 Muskrat evidence





GOLIATH GOLD PROJECT DRYDEN, ONTARIO, CANADA		SCALE: 5000		LEGEND  Vegetation Community	BE - Broad Leaved Emergents F - Floating Vegetation GC - Herbs and Ground Cover NE - Narrow Leaved Emergents	RE - Robust Emergents SU - Submerged Vegetation TS - Tall Shrubs		
Vegetation Communities		 Meters						
Wetland - WLD7	REV.01							



GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Wetland Boundary Map

Wetland - WLD7 REV.00

SCALE: 5000

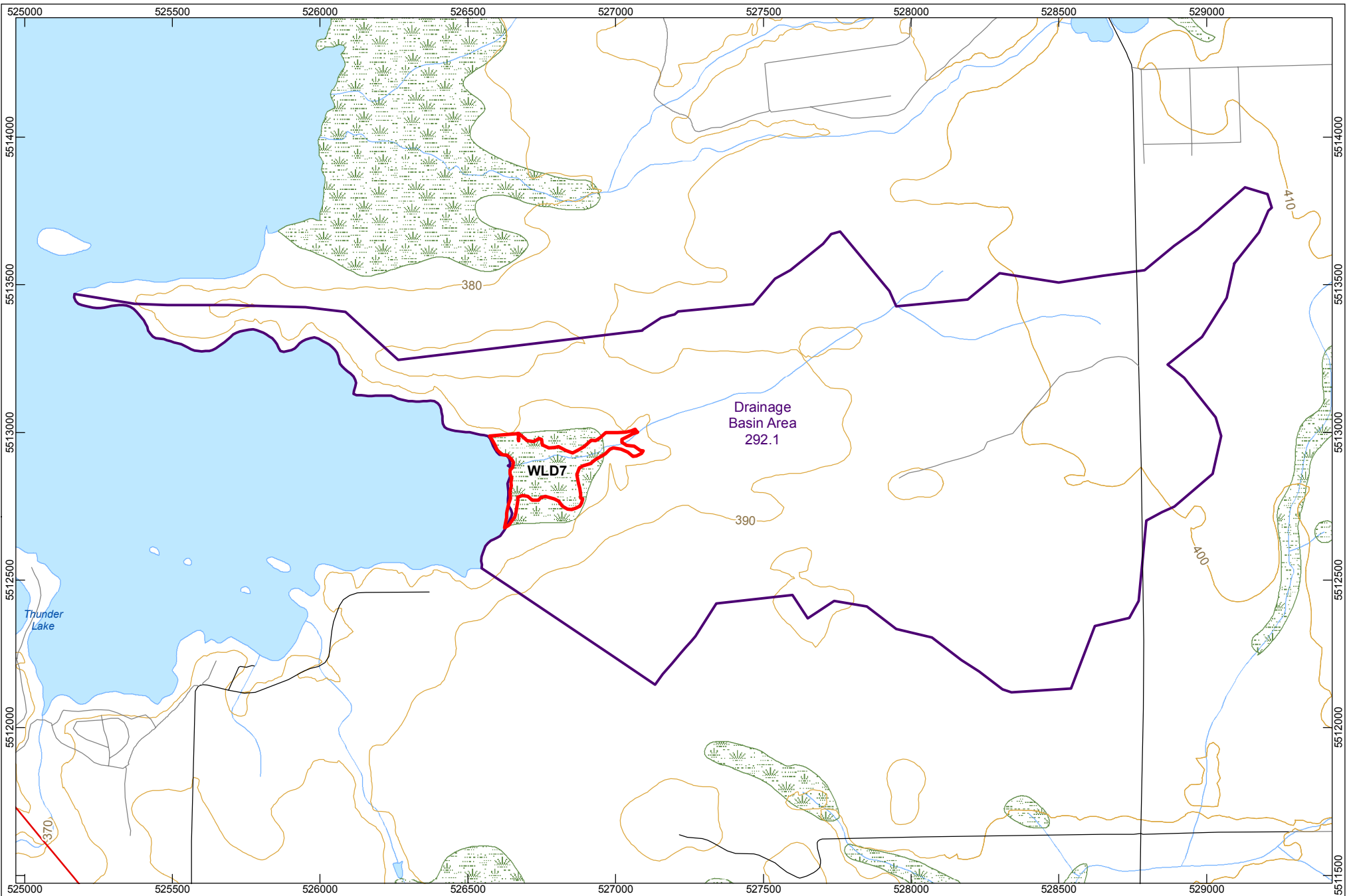
TREASURY METALS INC.

0 50 100 150
 Meters



- LEGEND**
- Expressway / Highway
 - Local Roadway
 - Resource / Recreational Road
 - Elevation Contour
 - Wetland Boundary: Ontario Wetland Evaluation System
 - Wetland: Land Information Data Set
 - Waterbody
 - Watercourse





GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

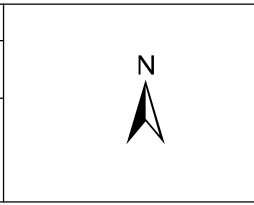
Wetland Drainage Basin Map

Wetland - WLD7 REV.00

SCALE: 17000

TREASURY METALS INC.

0 100 200 300 400
 Meters



- LEGEND**
- Expressway / Highway
 - Local Roadway
 - Resource / Recreational Road
 - Elevation Contour
 - Wetland Boundary: Ontario Wetland Evaluation System
 - Drainage Basin
 - Waterbody
 - Watercourse
 - WLD7 Wetland: Land Information Data Set



viii) WETLAND SIZE AND BOUNDARIES

a) Single contiguous wetland area: 43.0 hectares

b) Wetland complex comprised of ___ individual wetlands:

Wetland Unit Number (for reference)	Size of each wetland unit
Wetland Unit No. 1	_____ ha
Wetland Unit No. 2	_____ ha
Wetland Unit No. 3	_____ ha
Wetland Unit No. 4	_____ ha
Wetland Unit No. 5	_____ 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

(Attach additional sheets if necessary)

TOTAL WETLAND SIZE _____ ha

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

N/A

1.0 BIOLOGICAL COMPONENT

1.1 PRODUCTIVITY

1.1.1 GROWING DEGREE-DAYS/SOILS

GROWING DEGREE DAYS SOILS

(check one)	Estimated Fractional Area
_____ <1600	_____ clay/loam
_____ 1600-2000	_____ silt/marl
<u> x </u> 2000-2400	_____ limestone
_____ 2400-2800	_____ sand
_____ 2800-3000	<u> 0.52 </u> humic/mesic
_____ >3000	<u> 0.48 </u> fibric
	_____ granite

SCORING:

Growing Degree Days	Clay/Loam	Silt/Marl	Lime-stone	Sand	Humic/Mesic	Fibric	Granite
<1600	12	11	9	7	7	6	4
1600-2000	15	13	11	9	8	7	5
2000-2400	18	15	13	11	9*0.52	8*0.48	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

(maximum score 30; if wetland contains more than one soil type, evaluate based on the fractional area)

Steps required for evaluation: (maximum score 30 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.

Growing Degree Days/Soils Score (maximum 30 points): 9

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.1.2 WETLAND TYPE (Fractional Area = area of wetland type/ total wetland area)

Fractional Area Score

Bog	_____	x 3 =	_____
Fen	<u>0.07</u>	x 6 =	<u>0.42</u>
Swamp	<u>0.85</u>	x 8 =	<u>6.80</u>
Marsh	<u>0.08</u>	x 15 =	<u>1.20</u>

Wetland Type Score (maximum 15 points): 8

1.1.3 SITE TYPE (Fractional Area = area of site type/ total wetland area)

Fractional Area Score

Isolated	_____	x 1 =	_____
Palustrine (permanent or Intermittent flow)	_____	x 2 =	_____
Riverine	_____	x 4 =	_____
Riverine (at rivermouth)	_____	x 5 =	_____
Lacustrine (at rivermouth)	_____	x 5 =	_____
Lacustrine (on enclosed bay, with barrier beach)	_____	x 3 =	_____
Lacustrine (exposed to lake)	<u>1.0</u>	x 2 =	<u>2</u>

Site Type Score (maximum 5 points): 2

1.2 BIODIVERSITY

1.2.1 NUMBER OF WETLAND TYPES

(Check one)	Score (Choose one only)
_____ one	9 points
_____ two	13
_____ x three	20
_____ four	30

Number of Wetland Types Score (Maximum 30 points): 20

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.2 VEGETATION COMMUNITIES

Attach a separate sheet listing community (map) codes, vegetation forms and dominant species. Use the form on the following page to record percent area by dominant vegetation form. This information will be used in other parts of the evaluation.

Communities should be grouped by number of forms. For example, 2 form communities might appear as follows:

2 forms

<u>Code</u>	<u>Forms</u>	<u>Dominant Species</u>
M6	re, ff	re, <i>Typha latifolia</i> ; ff, <i>Lemna minor</i> , <i>Wolffia</i>
S1	ts, gc	ts, <i>Salix discolor</i> ; gc, <i>Impatiens capensis</i> , <i>Thelypteris palustris</i>

Note that the dominant species for each form are separated by a semicolon. The dominant species (maximum of 2) within a form are separated by commas.

Scoring:

Total # of communities with 1-3 forms	Total # of communities with 4-5 forms	Total # of communities with 6 or more forms
1 = 1.5 points	1 = 2 points	1 = 3 points
2 = 2.5	2 = 3.5	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	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	+0.5 each additional community	+1 each additional community

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

$$6 + 13.5 + 15 = 34.5 = 35 \text{ points}$$

Vegetation Communities Score (maximum 45 points): 5

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Wetland Name: WLD1

Wetland Size (ha): 53.6

Vegetation Form % area in which form is dominant

h	—
c	<u>0.48</u>
dh	—
dc	—
ts	<u>0.37</u>
ls	—
ds	—
gc	—
m	—
ne	<u>0.15</u>
be	—
re	—
ff	—
f	—
su	—
u (unvegetated)	—
Total =	100%

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.3 DIVERSITY OF SURROUNDING HABITAT

(Check all appropriate items)

<u> </u>	recent burn (< 5yr)
<u> x </u>	abandoned agricultural land
<u> x </u>	utility corridor
<u> x </u>	deciduous forest
<u> x </u>	recent cutover or clearcut (<5 yr)
<u> x </u>	coniferous forest
<u> x </u>	mixed forest (at least 25% conifer and 75% deciduous or vice versa)
<u> </u>	crops
<u> </u>	abandoned pits or quarries
<u> </u>	pasture
<u> </u>	ravine
<u> </u>	fence rows
<u> x </u>	open lake or deep river
<u> </u>	creek floodplain
<u> </u>	rock outcrop

Diversity of Surrounding Habitat Score (1 for each, maximum 7 points): 7

1.2.4 PROXIMITY TO OTHER WETLANDS

(Check first appropriate category only)

Scoring

1) <u> x </u>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river within 1.5 km	8 points
2) <u> </u>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
3) <u> </u>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river from 1.5 to 4 km away	5
4) <u> </u>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
5) <u> </u>	Within 0.75 km of other wetlands (different dominant wetland type) or open lake or river, but not hydrologically connected by surface water	5
6) <u> </u>	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
7) <u> </u>	No wetland within 1 km	0

Proximity to other Wetlands Score (Choose one only, maximum 8 points): 8

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.5 INTERSPERSION

Number of Intersections (check one)

- | | | |
|---------------|--------------|----|
| 1) 26 or less | _____ | 3 |
| 2) 27 to 40 | _____ | 6 |
| 3) 41 to 60 | _____ | 9 |
| 4) 61 to 80 | _____ | 12 |
| 5) 81 to 100 | _____ | 15 |
| 6) 101 to 125 | <u> x </u> | 18 |
| 7) 126 to 150 | _____ | 21 |
| 8) 151 to 175 | _____ | 24 |
| 9) 176 to 200 | _____ | 27 |
| 10) >200 | _____ | 30 |

Interspersion Score (Choose one only, maximum 30 points): 18
(103 intersections)

1.2.6 OPEN WATER TYPES

Permanently flooded (Check one)

- | | | |
|------------------|--------------|----|
| 1) No open water | _____ | 0 |
| 2) Type 1 | _____ | 8 |
| 3) Type 2 | _____ | 8 |
| 4) Type 3 | <u> x </u> | 14 |
| 5) Type 4 | _____ | 20 |
| 6) Type 5 | _____ | 30 |
| 7) Type 6 | _____ | 8 |
| 8) Type 7 | _____ | 14 |
| 9) Type 8 | _____ | 3 |

Open Water Score (Choose one only, maximum 30 points): 14

1.3 SIZE

53.6 hectares

Size Score (Biological Component) (maximum 50 points): 21

Table 2. Evaluation Table for Size Score (Biological Component)

Wetland size (ha)	Total Score for Biodiversity Subcomponent									
	<37	37-47	48-60	61-72	73-84	85-96	97-108	109-120	121-132	>132
<20 ha	1	5	7	8	9	17	25	34	43	50
20-40	5	7	8	9	10	19	28	37	46	50
41-60	6	8	9	10	11	21	31	40	49	50
61-80	7	9	10	11	13	23	34	43	50	50
81-100	8	10	11	13	15	25	37	46	50	50
101-120	9	11	13	15	18	28	40	49	50	50
121-140	10	13	15	17	21	31	43	50	50	50
141-160	11	15	17	19	23	34	46	50	50	50
161-180	13	17	19	21	25	37	49	50	50	50
181-200	15	19	21	23	28	40	50	50	50	50
201-400	17	21	23	25	31	43	50	50	50	50
401-600	19	23	25	28	34	46	50	50	50	50
601-800	21	25	28	31	37	49	50	50	50	50
801-1000	23	28	31	34	40	50	50	50	50	50
1001-1200	25	31	34	37	43	50	50	50	50	50
1201-1400	28	34	37	40	46	50	50	50	50	50
1401-1600	31	37	40	43	49	50	50	50	50	50
1601-1800	34	40	43	46	50	50	50	50	50	50
1801-2000	37	43	47	49	50	50	50	50	50	50
>2000	40	46	50	50	50	50	50	50	50	50

2.0 SOCIAL COMPONENT

2.1 ECONOMICALLY VALUABLE PRODUCTS

2.1.1 WOOD PRODUCTS

Area of wetland forested (ha); not wetland size

1) <5 ha	_____	0
2) 5 – 25 ha	_____	4
3) 26 – 50 ha	<u> x </u>	6
4) 51 – 100 ha	_____	8
5) 101-200 ha	_____	11
6) > 200 ha	_____	14

Source of information: Forest Resource Inventory (FRI – GIS data)

Wood Products Score (Score one only, maximum 14 points): 6

2.1.2 LOWBUSH CRANBERRY

1) Present	_____	2
2) Absent	<u> x </u>	0

Source of information: Field observation

Lowbush Cranberry Score (maximum 2 points): 0

2.1.3 WILD RICE

1) Present	_____	10
2) Absent	<u> x </u>	0

Source of information: Field observation

Wild Rice Score (maximum 10 points): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

2.4.2 FACILITIES AND PROGRAMS

1) Staffed interpretation centre with shelters, trails, literature	_____	8
2) No interpretation centre or staff, but a system of self-guided trails and observation points, or brochures available	_____	4
3) Facilities such as maintained paths (e.g., wood chips) Boardwalks, boat launches, or observation towers	_____	2
4) No facilities or programs	_____ x	0

Source of information: _____

Facilities and Programs Score (maximum 8 points): 0

2.4.3 RESEARCH AND STUDIES

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

Attach list of known reports by above categories

- *DST Consulting Engineers Sediment and Benthics and Aquatic Baseline Environmental Reports 2014 (2012 data), Reference Number OE-KN-018101*

Research and Studies Score (Score is cumulative, maximum 12 points): 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	16
0.5 to 10 km from settlement	26	16	10
10 to 60 km from settlement	12	8	4
>60 km from settlement	5	2	0
>100 km from settlement	0	0	0

Name of settlement: Wabigoon Lake Ojibway Nation (WLON)

Proximity to Human Settlement Score (maximum 40 points): 10

2.6 OWNERSHIP (FA = fractional area)

Wetland in public or private ownership, held under contract or in trust for wetland protection

Fractional Area Score

_____ x 10 = _____

Wetland in public ownership, not as above

0.9 x 8 = 7.2

Wetland in private ownership, not as above

0.1 x 4 = 0.4

Source of information: Treasury Resources Inc.

Ownership Score (maximum 10 points): 8

Northern Ontario Wetlands Evaluation, Data and Scoring Record

2.7 SIZE (See size table -- Social Component)

53.6 hectares

Size Score (Social Component) (maximum 20 points): 11

Table 3. Evaluation Table for Size Score (Social Component)

Wetland size (ha)	Total for Size Dependent Score									
	<30	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
2-4	1	2	4	8	12	13	14	14	15	16
5-8	2	2	5	9	13	14	15	15	16	16
9-12	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	18	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	19	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	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.

2.8.1 ABORIGINAL VALUES

Full documentation of sources must be attached to the data record.

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

2.8.2 CULTURAL HERITAGE

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

Aboriginal Values/Cultural Heritage Score (maximum 30 points): 0

3.0 HYDROLOGICAL COMPONENT

3.1 FLOOD ATTENUATION

If the wetland is a complex including isolated wetlands, apportion the 100 points according to area. For example, if 10 ha of a 100 ha complex is isolated, the isolated portion receives the maximum proportional score of 10. The remainder of the wetland is then evaluated out of the remaining 90 points.

Step 1.

If wetland is entirely Isolated, go directly to Step 5.

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 5.

All other wetlands, go through steps 2, 3, 4 and 5.

Step 2.

Determination of Upstream Detention Factor (DF)

- (a) Wetland area (ha) _____
- (b) Total area (ha) of upstream detention areas _____
(include the wetland itself)
- (c) Ratio of (a):(b) _____
- (d) Upstream detention factor: (c) x 2 = _____
(Maximum allowable factor = 1)

Step 3.

Determination of Peak Flow Attenuation Factor (AF)

- (a) Wetland area (ha) _____
- (b) Size of catchment basin (ha) upstream of wetland _____
(include wetland itself in catchment area)
- (c) Ratio of (a):(b) _____
- (d) Wetland attenuation factor: (c) x 10 = _____
(Maximum allowable factor = 1)

Step 4.

Determination of Wetland Surface Form Factor (FF)

From the list below, select the surface form which best describes the wetland.

	Factor	
Flooded with little or no aquatic vegetation	_____	0
Flooded but with submergent, emergent or floating vegetation	_____	0.2
Flat (lawn) vegetation (typical of fens)	_____	0.5
Hummock-depression microtopography	_____	0.7
Patterned (e.g., string bog, ribbed fen)	_____	1.0

Surface Form Factor (FF) _____

(Maximum allowable factor = 1)

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Step 5. Calculation of Final Score

- 1. Wetland is entirely Isolated 100 points
- 2. Wetland is lacustrine and the ratio of wetland area:lake area is <0.1 0 points
- 3. Wetland is riverine along the St. Mary's River 0 points
- 4. For all other wetlands*, calculate as follows:
 - (a) Upstream Detention Factor (DF) (Step2) _____
 - (b) Wetland Attenuation Factor (AF) (Step 3) _____
 - (c) Surface Form Factor (FF) (Step 4) _____

$[(DF + AF + FF)/3] \times 100^*$ _____

* Unless wetland is a complex including isolated portions -- see above

Total Flood Attenuation Score (maximum 100 points):

3.2 GROUND WATER RECHARGE

3.2.1 SITE TYPE

- 1) Wetland > 50% lacustrine (by area) or located on the St. Mary's River Score = 0
- 2) Wetland not as above. Calculate final score as follows:
(FA = area of site type/total area of wetland)
 - _____ FA of isolated or palustrine wetland x 20 = _____
 - _____ FA of riverine wetland x 5 = _____
 - 1.0 FA of lacustrine wetland (wetland <50% lacustrine) x 0 = _____

Site Type Score: (maximum 20 points): 0

3.2.2 SOILS

EVALUATION:

Dominant Wetland Type	Sand, loam, gravel, till	Clay, bedrock
Lacustrine or on St. Mary's River	0	0
Isolated	10	5
Palustrine	7	4
Riverine (not on St. Mary's River)	5	2

Hydrological Soil Class Score (maximum 10 points): 0

3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

3.3.1 WATERSHED IMPROVEMENT FACTOR

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

<u>Site Type</u>	<u>Improvement Factor (IF)</u>
Isolated	FA _____ x 0.5 = _____
Riverine	FA _____ x 1.0 = _____
Palustrine with no inflow	FA _____ x 0.7 = _____
Palustrine with inflows	FA _____ x 1.0 = _____
Lacustrine on lake shoreline	FA _____ x 0.2 = _____
Lacustrine at lake inflow or outflow	FA <u>1.0</u> x 1.0 = <u>1.0</u>

Watershed Improvement Score (IF x 30) (maximum = 30): 30

3.3.2 ADJACENT AND WATERSHED LAND USE EVALUATION:

Step 1. Determination of Maximum Initial Score

_____ Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)

_____ x _____ All other wetlands (Go through steps 2, 3, 4, and 5b)

Step 2. Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in an extensive manner.

Choose one		
> 50% of catchment basin	_____	20
20-50% of catchment basin	_____ x _____	14
< 20% of catchment basin	_____	4

Score for BLU: 14

Step 3. Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

Choose the highest only

Major corridor ¹	_____ x _____	15
Secondary corridor	_____	11
Tertiary corridor	_____	6
Temporary or abandoned	_____	3
None	_____	0

Score for LUU: 15

¹ Major, secondary and tertiary roads are those that are indicated as such on the provincial highways map. Major hydro corridors are trunk lines coming directly from a generating station. Major pipelines are trans-continental lines. Secondary corridors are regional distribution lines (i.e. multi-cable hydro corridors not emanating directly from a generating station or regional gas distribution lines). Tertiary corridors are single hydro lines or local gas distribution lines (i.e. to domestic users).

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Step 4. Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits use for local road construction), etc. Score as 'present' only if a point source land use is located less than 1 km upstream from the wetland.

a) Present	_____	15
b) Absent	_____x_____	0

Score for PS: 0

Step 5. Calculation of total score for Adjacent and Watershed Land Use

	Score
a) Wetland on the Great Lakes or St. Mary's River	0
b) All other wetlands, calculate as follows:	

Final Score BLU + LUU + PS: 29

3.3.3 VEGETATION FORM

Choose the category that best describes the vegetation of the wetland

Trees, shrubs or herbs (h, c, ts, ls, gc)	_____x_____	8
Emergents, submergents (ne, re, be, f, ff, su)	_____	10
Little or no vegetation (u)	_____	0

Dominant Vegetation Form Score (maximum 10 points): 8

3.4 CARBON SINK

Choose the category that best describes the wetland.

1) Wetland a bog or fen with > 50% organic soils	_____	15
2) Wetland has organic soils occupying 10 to 50% of the area (i.e. mainly mineral or undesignated soil, any wetland type)	_____	6
3) Marshes and swamps with >50% organic soil	_____x_____	9
4) Wetland with <10% organic soils	_____	0

Carbon Sink Score (maximum 15 points): 9

3.5 SHORELINE EROSION CONTROL

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.

- Step 1.
- | | | |
|--------------|---|------------|
| <u> </u> | Wetland entirely isolated or palustrine | Score
0 |
| <u> x </u> | Any part of the wetland riverine, or lacustrine (proceed to Step 2) | |

Step 2. Choose the one characteristic that best describes the shoreline vegetation.
(See text for the definition of shoreline.)

- | | | |
|----------------------------|--------------|----|
| Trees and shrubs | <u> </u> | 15 |
| Emergent vegetation | <u> x </u> | 8 |
| Submergent vegetation | <u> </u> | 6 |
| Other shoreline vegetation | <u> </u> | 3 |
| No vegetation | <u> </u> | 0 |

Shoreline Erosion Control Score (maximum 15 points): 8

3.6 GROUNDWATER DISCHARGE

(Circle the characteristics that best describe the wetland being evaluated and sum the scores.)

Category	Catchment interaction		
Wetland type	Bog = 0	Swamp/Marsh = 2	Fen = 5
Basin topography	Flat/Rolling = 0	Hilly = 2	Major relief break = 5
Wetland area:Upslope catchment area	Large (>50%) = 0	Moderate (6 - 50%) = 2	Small (<5%) = 5
Lagg development	None found = 0	Minor = 2	Extensive = 5
Seeps at wetland edge	None found = 0	1 to 3 seeps = 5	4 or more seeps = 10
Iron precipitates evident at edge	None = 0	1-3 deposits = 2	4 or more deposits = 5
Surface marl deposits	None = 0	1-3 deposits = 2	> 3 = 5
Wetland pH	Low < 4.2 = 0	Moderate 4.2-5.7 = 5	High >5.7 = 10
Catchment soil coverage	Patchy = 0	Thin (<20 cm) = 2	Thick = 5
Catchment soil permeability	Low = 0	Moderate = 2	High = 5

(Scores are cumulative, maximum score 30 points)

Groundwater Discharge Score (maximum 30 points): 17

4.0 SPECIAL FEATURES COMPONENT

4.1 RARITY

4.1.1 WETLANDS

Hills Site Region and Site District (5E only): _____

Wetland type (check one or more)

- Bog
- Fen
- Swamp
- Marsh

Evaluation Table for Scoring Rarity of Wetland Type.

Unit Number	Site Region & District	Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	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
5E-1	Thessalon	10	0	30	20
5E-2	Gore Bay	20	0	20	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tomiko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E-12	Renfrew	0	0	30	10
5-S	Lake of the Woods	10	10	20	10

Rarity of Wetland Type Score (Maximum 70 points): 50

4.1.2 SPECIES

4.1.2.1 BREEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

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

Attach documentation

Scoring

For one species	250
For each additional species	250

(Score is cumulative, no maximum score)

Breeding Habitat for Endangered or Threatened Species Score (no maximum): 0

4.1.2.2 TRADITIONAL MIGRATION OR FEEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach documentation

Scoring

For one species	150 points
For each additional species	75

(Score is cumulative, no maximum score)

Traditional Habitat for Endangered or Threatened Species Score (no maximum): 0

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4.1.2.3 PROVINCIALY SIGNIFICANT ANIMAL SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	<u>Bald Eagle</u>	<u><i>Haliaeetus leucocephalus</i></u>	<u>field observation</u>
2)	<u>Canada Warbler</u>	<u><i>Wilsonia canadensis</i></u>	<u>field observation</u>
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant animal species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.) (no maximum score)

Provincially Significant Animal Species Score (no maximum): 80

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4.1.2.4 PROVINCIALY SIGNIFICANT PLANT SPECIES

(Scientific names must be recorded)

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant plant species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species Score (no maximum): 0

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4.1.2.5 REGIONALLY SIGNIFICANT SPECIES (SITE REGION)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

SIGNIFICANT IN SITE REGION:

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary; Attach documentation

** Score only if there is an approved list.

No. of species significant in Site Region

One species	=	20	6 species	=	55
2 species	=	30	7 species	=	58
3 species	=	40	8 species	=	61
4 species	=	45	9 species	=	64
5 species	=	50	10 species	=	67

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

Significant Species (Site Region) Score (no maximum): 0

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4.2.1.6 LOCALLY SIGNIFICANT SPECIES (SITE DISTRICT)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Source of information: _____

Attach separate list if necessary; Attach documentation.

Scoring

No. of species significant in Site District

One species	=	10	6 species	=	41
2 species	=	17	7 species	=	43
3 species	=	24	8 species	=	45
4 species	=	31	9 species	=	47
5 species	=	38	10 species	=	49

For each significant species over 10 in the wetland, add 1 point.

Locally Significant Species (Site District) Score (no maximum): 0

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4.1.2.7 SPECIES OF SPECIAL STATUS

Black Duck

Suitable breeding habitat present and within assessment range (Figure 17)

Assessment Category		
40 - 80 Indicated Pairs/100 km sq	_____	25
20 - 40 Indicated Pairs/100 km sq	_____	20
10 - 20 Indicated Pairs/100 km sq	_____	15
5 - 10 Indicated Pairs/100 km sq	<u> x </u>	10
1 - 5 Indicated Pairs/100 km sq	_____	5
Habitat not suitable	_____	0
Out of assessment range	_____	0

Black Duck Score (maximum 25 points): 10

4.2 SIGNIFICANT FEATURES AND HABITATS

4.2.1 NESTING OF COLONIAL WATERBIRDS

Status	Name of species	Source of information	Score
Currently nesting			50 points
Known to have nested within past 5 years			25
Active feeding area (great blue heron excluded)			15
None known			0

Attach documentation (nest locations, etc., if known)

Colonial Waterbirds Score (maximum 50 points): 0

4.2.2. WINTER COVER FOR WILDLIFE

(Check only highest level of significance)		<u>Score</u> (one only)
1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	25
3) Locally significant	_____	10
4) Little or poor winter cover present	<u> x </u>	0

Source of information: _____

Winter cover for Wildlife Score (maximum 100 points): 0

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4.2.3 WATERFOWL STAGING AND/OR MOULTING

(Check only highest level of significance for both staging and moulting; score is cumulative across columns, maximum 150 points)

	<u>Staging</u>	Score (one only)	<u>Moulting</u>	Score (one only)
1) Nationally significant	_____	150	_____	150
2) Provincially significant	_____	100	_____	100
3) Regionally significant	_____	50	_____	50
4) Known to occur	_____	10	_____	10
5) Not possible	_____	0	_____	0
6) Not known	<u> x </u>	0	_____	0

Source of information: _____

Waterfowl Moulting and Staging Score (maximum 150 points): 0

4.2.4 WATERFOWL BREEDING

(Check only highest level of significance)

1) Provincially significant	_____	100
2) Regionally significant	_____	50
3) Habitat suitable	<u> x </u>	10
4) Habitat not suitable	_____	0

Source of information: _____

Waterfowl Breeding Score (maximum 100 points): 10

4.2.5 MIGRATORY PASSERINE, SHOREBIRD OR RAPTOR STOPOVER AREA

(check highest applicable category)

1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	10
3) Not significant	<u> x </u>	0

Source of information: _____

Passerine, Shorebird or Raptor Stopover Score (maximum 100 points): 0

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4.2.6 UNGULATE HABITAT

EVALUATION:

Score (1) + (2) + one of (3) to (6)

(1) Ungulate summer cover	_____	15
(2) Mineral licks	_____	50
(3) Moose aquatic feeding area Class 1	<u> x </u>	0
(4) Moose aquatic feeding area Class 2	_____	10
(5) Moose aquatic feeding area Class 3	_____	20
(6) Moose aquatic feeding area Class 4	_____	35

(Score is cumulative for a maximum possible score of 100)

Ungulate Habitat Score (maximum 100 points): 0

4.2.7 FISH HABITAT

4.2.7.1 Spawning and Nursery Habitat

Table 5. Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5 - 4.9	0.2
5.0 - 9.9	0.4
10.0 - 14.9	0.6
15.0 - 19.9	0.8
20.0+ ha	1.0

Step 1:

_____ Fish habitat is not present within the wetland (Score = 0)

 x Fish habitat is present within the wetland (Go to Step 2)

Step 2: Choose only one option

1) _____ Significance of the spawning and nursery habitat within the wetland is known
(Go to Step3)

2) x **Significance of the spawning and nursery habitat within the wetland is not known (Go through Steps 4, 5, 6, and 7)**

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Step 3: Select the highest appropriate category below, attach documentation:

- 1) Significant in Site Region _____ 100
- 2) Significant in Site District _____ 50
- 3) Locally Significant Habitat (5.0+ ha) _____ 25
- 3) Locally Significant Habitat (<5.0 ha) _____ 15

Score for Spawning and Nursery Habitat (maximum score 100 points): 0

Step 4: Proceed to Steps 4 to 7 only if Step 3 was not scored

(**Low Marsh:** marsh area from the existing water line out to the outer boundary of the wetland)

- _____ Low marsh not present (Continue to Step 5)
- x Low marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community. Check the appropriate Vegetation Group (see Appendix 16) for each Low Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass		0.08	0.1	6	0.6
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
5	Duckweed				2	
6	Smartweed-Waterwillow				6	
7	Waterlily-Lotus				11	
8	Waterweed-Watercress				9	
9	Ribbongrass				10	
10	Coontail-Naiad-Watermilfoil				13	
11	Narrowleaf Pondweed				5	
12	Broadleaf Pondweed				8	
Total Score (maximum 75 points)						0.6

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Step 5: High Marsh: area from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.

 x High marsh not present (Continue to Step 6)
 High marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community. Check the appropriate Vegetation Group for each High Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass				6	
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
Total Score (maximum 25 points)						

Step 6: Swamp: Swamp communities containing fish habitat, either seasonally or permanently. Determine the total area of seasonally flooded swamps and permanently flooded swamps containing fish habitat.

 x Swamp containing fish habitat not present (Continue to Step 7)
 Swamp containing fish habitat present (Score as follows)

Swamp containing fish habitat	Present (check)	Total area (ha)	Area Factor (see Table 5)	Score	TOTAL SCORE (factor x score)
seasonally flooded				10	
permanently flooded				10	
SCORE (maximum 20 points)					

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Step 7: Calculation of final score

Score for Spawning and Nursery Habitat (Low Marsh) (maximum 75 points)	<u>0.6</u>
Score for Spawning and Nursery Habitat (High Marsh) (maximum 25 points)	<u>0</u>
Score for Swamp Containing Fish Habitat (maximum 20 points)	<u>0</u>

Sum (maximum score 100 points): 1

4.2.7.2 Migration and Staging Habitat

Step 1:

- 1) Staging or Migration Habitat is not present in the wetland _____ (Score = 0)
- 2) Staging or Migration Habitat is present in the wetland, significance of the habitat is known _____
(Go to Step 2)
- 3) Staging or Migration Habitat is present in the wetland, significance of the habitat is not known x
(Go to Step 3)

Only one of Step 2 or Step 3 is to be scored.

Step 2: Select the highest appropriate category below, attach documentation:

- 1) Significant in Site Region _____ 25
- 2) Significant in Site District _____ 15
- 3) Locally Significant _____ 10
- 4) Fish staging and/or migration habitat present, but not as above _____ 5

Score for Fish Migration and Staging Habitat (maximum score 25 points): 0

Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to be the dominant site type). Note name of river for 2) and 3).

- 1) Wetland is riverine at rivermouth or lacustrine at rivermouth _____ 25
- 2) Wetland is riverine, within 0.75 km of rivermouth _____ 15
- 3) Wetland is lacustrine, within 0.75 km of rivermouth _____ 10
- 4) Fish staging and/or migration habitat present, but not as above x 5

Score for Staging and Migration Habitat (maximum score 25 points): 5

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4.3 ECOSYSTEM AGE (Fractional Area = Area of wetland type/total area of wetland)

	Fractional Area		Scoring
Bog	_____	x 25	_____
Fen, treed to open on deep soils, floating mats or marl	<u>0.7</u>	x 20	<u>14</u>
Fen, on limestone rock	_____	x 5	_____
Swamp	<u>0.85</u>	x 3	<u>2.55</u>
Marsh	<u>0.08</u>	x 0	<u>0</u>

Ecosystem Age Score (maximum 25 points): 17

4.4 GREAT LAKES COASTAL WETLANDS

Score for coastal (see text for definition) wetlands only

Choose one only

wetland <10 ha	_____	10
wetland 10-50 ha	_____	25
wetland 51-100 ha	_____	50
wetland >100 ha	_____	75

Great Lakes Coastal Wetlands Score (maximum 75 points): 0

5.0 EXTRA INFORMATION

5.1 PURPLE LOOSESTRIFE

Absent/Not seen x

Present

- 1) One location in wetland
- Two to many locations

Abundance code

- a) < 20 plants
- b) 20-99 plants
- c) 100-999 plants
- d) > 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)
- Seasonal (1 to 3 months) x
- 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
- Observed or heard on lake or river adjoining the wetland
- x not as above

Northern Ontario Wetlands Evaluation, Data and Scoring Record

INVESTIGATORS

Krista Prosser

AFFILIATION

DST Consulting engineers

DATES WETLAND VISITED

September 7, 2012

DATE THIS EVALUATION COMPLETED:

February 12, 2013

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

6

WEATHER CONDITIONS

i) at time of field work : 13°C, rain

ii) summer conditions in general : precipitation levels were high in June and August

OTHER POTENTIALLY USEFUL INFORMATION:

CHECKLIST OF PLANT AND ANIMAL SPECIES RECORDED IN THE WETLAND:

attach list of all flora and fauna observed in the wetland:

* Indicate if voucher specimens or photos have been obtained, where located, etc.)

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SUMMARY OF EVALUATION RESULT

Wetland WLD8

TOTAL FOR 1.0 BIOLOGICAL COMPONENT 112

TOTAL FOR 2.0 SOCIAL COMPONENT 62

TOTAL FOR 3.0 HYDROLOGICAL COMPONENT 101

TOTAL FOR 4.0 SPECIAL FEATURES COMPONENT 173

WETLAND TOTAL 448

INVESTIGATORS

Krista Prosser,

AFFILIATION

DST Consulting Engineers

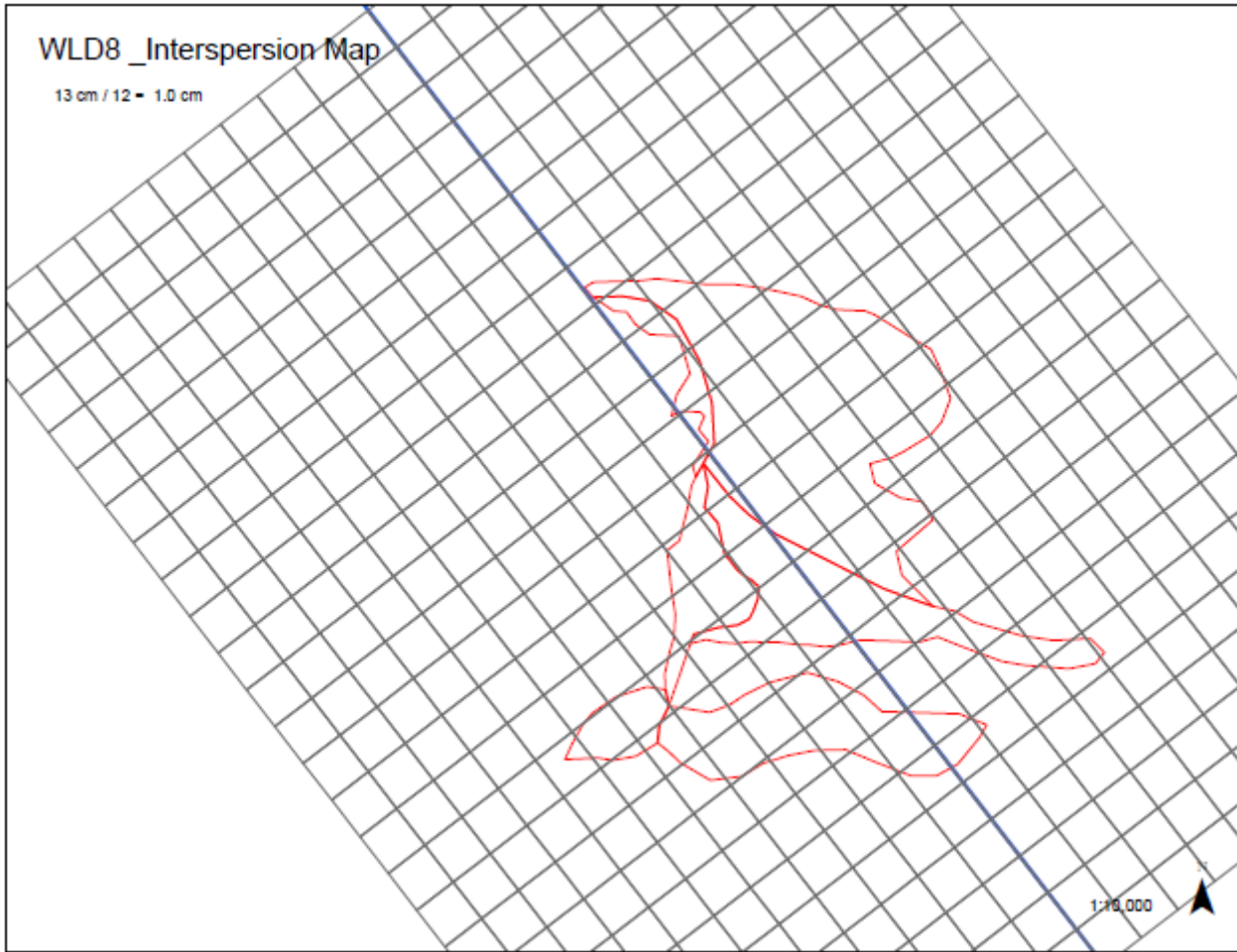
DATE: **February 12, 2014**

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Wetland ID: wld1	Site Type: Lacustrine	
Date Surveyed: September 7, 2012		
<u>BIOLOGICAL COMPONENT</u>		
Productivity	Growing Degree-Day/soils (max 30)	9
	Wetland Type (max 15)	8
	Site Type (max 5)	2
Biodiversity =	Number of Wetland types (max 30)	20
	Vegetation Communities (max 45)	5
	Diversity of Surrounding Habitat (max 7)	7
	Proximity to other wetlands (max 8)	8
	Interspersion (max 30)	18
	Open water type (max 30)	14
	Size (max 50)	21
	Total Biological Component (not to exceed 250)	112
<u>SOCIAL COMPONENT</u>		
Economically Valuable Products	Wood products (max 14)	6
	Low Bush Cranberry (max 2)	0
	Wild rice (max 10)	0
	Commercial fish (max 12)	12
	Furbearers (max 12)	0
Recreational Activities	Hunting/Fishing/Nature (max 80)	0
	Landscape Distinctness (max 3)	3
	Absence of human disturbance (max 7)	7
	Educational Uses (max 20)	0
	Facilities and Programs (8)	0
	Research and Studies (max 12)	5
	Proximity to human settlement (max 40)	10
	Ownership (max 10)	8
	Size (max 20)	11
	Aboriginal and cultural (max 30)	0
	Total for Social Component (not to exceed 250)	62
<u>HYDROLOGICAL COMPONENT</u>		
	Flood attenuation (max 100)	0
Ground Water Recharge	Site type (20)	0
	Hydrological Soils (max 10)	0
Downstream Water Quality Improvement	Watershed Improvement (max 30)	30
	Adjacent Watershed Land Use (max 60)	29
	Vegetation form (max 10)	8
	Carbon Sink (max 15)	9
	Shoreline erosion control (max 15)	8
	Groundwater Discharge (max 30)	17
	Total for Hydrological Component (not to exceed 250)	101
<u>SPECIAL FEATURES</u>		
Rarity	Wetlands (max 70)	50
	Endangered/Threatened spp. breeding habitat (no max)	0
	Traditional use by endanger/threatend spp. (no max)	0
	Provincially significant animals (no max)	80
	Provincially significant plants (no max)	0
	Regionally significant spp. (no max)	0
	Locally significant spp. (no max)	0
	Species of Special Status (Black Duck) (max 25)	10
Significant Features and Habitats	Colonial Waterbirds (max 50)	0
	Winter Cover for Wildlife (max 100)	0
	Waterfowl Staging/Moutling (max 150)	0
	Waterfowl Breeding (max 100)	10
		0
	Migratory Passerine, Shorebird or Raptor stopover (max 100)	0
	Ungulate Habitat (max 100)	0
	Fish Nursery Habitat (max 100)	1
	Fish Staging/Migration Habitat Present (max 25)	5
	Ecosystem Age (max 25)	17
	Great Lake Coastal Wetlands (max 75)	0
	Total for Special features (not to exceed 250)	173
TOTAL		448

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Scientific Name	Common Name	Wildife Observed
<i>Abies balsamea</i>	Balsam fir	*Bald Eagle
<i>Agrostis scabra</i>	Tickle grass	*Canada Warbler
<i>Alnus incana</i>	Speckled Alder	Red Squirrel
<i>Aster borealis</i>	Rush aster	Herring Gull
<i>Aster lanceolatus</i>	Lance-leaved aster	Horned Greib (2)
<i>Betula papyrifera</i>	White birch	Ruby Throated Humming Birc
<i>Bidens cernua</i>	Nodding bur marigold	Canada Goose
<i>Calamagrostis canadensis</i>	Canada Bluejoint	Common Loon
<i>Caltha palustris</i>	Marsh marigold	Sandhill Crane
<i>Carex brunnescens</i>	Brownish sedge	Piliated Woodpecker
<i>Carex lacustris</i>	Lakebank sedge	
<i>Carex lasiocarpa</i>	Wire Sedge	
<i>Carex trisperma</i>	3-fruited sedge	
<i>Carex utriculata</i>	Beaked sedge	
<i>Cinna latifolia</i>	Drooping woodreed	
<i>Climacium dendroides</i>	Tree moss	
<i>Coptis trifolia</i>	Goldthread	
<i>Cornus canadensis</i>	Bunch berry	
<i>Cornus stolonifera</i>	Red-Osier dogwood	
<i>Cornus stolonifera</i>	Round-leaved dogwood	
<i>Crex disperma</i>	Soft-leaved sedge	
<i>Drepanolcladus spp.</i>	Sickle moss	
<i>Equisetum palustre</i>	Marsh Horsetail	
<i>Equisetum sylvaticum</i>	Wood horsetail	
<i>Galium trifidum</i>	Small bedstraw	
<i>Galium triflorum</i>	Fragrant Bedstraw	
<i>Gaultheria hispidula</i>	Creeping snowberry	
<i>Glyceria grandis</i>	Tall manna grass	
<i>Hypericum majus</i>	Canada St. John's wort	
<i>Impatiens capensis</i>	Jewelweed	
<i>Linnaea borealis</i>	Twinflower	
<i>Lycopus uniflorus</i>	Northern bugleweed	
<i>Maianthemum trifolium</i>	Three-Leaved Solomon's Seal	
<i>Menyanthes trifoliata</i>	Buckbean	
<i>Mitella nuda</i>	Naked mitrewort	
<i>Myrica gale</i>	Sweet Gale	
<i>Phalaris arundinacea</i>	Reed canary grass	
<i>Phragmites australis</i>	Common reed	
<i>Picea mariana</i>	Black Spruce	
<i>Poa palustris</i>	Fowl blue grass	
<i>Polytrichum spp.</i>	Haircap mosses	
<i>Potentilla palustris</i>	Marsh cinquefoil	
<i>Poytrichum spp.</i>	Haircap moss	
<i>Pyrola asarifolia</i>	Pink pyrola	
<i>Rhododendron groenlandicum</i>	Labrador Tea	
<i>Rhytidiadelphus triquetrus</i>	Electrified cat's tail moss	
<i>Ribes spp.</i>	Currant	
<i>Rubus pubescens</i>	Dwarf raspberry	
<i>Salix spp.</i>	Willow	
<i>Scirpus acutus</i>	Hardstem bulrush	
<i>Scirpus cyperinus</i>	Wool grass	
<i>Sphagnum spp.</i>	Common peat mosses	
<i>Thuidium delicatulum</i>	Common fern moss	
<i>Thuja occidentalis</i>	Eastern White Cedar	
<i>Triadenum fraseri</i>	Marsh St. John's wort	
<i>Trientalis borealis</i>	Starflower	
<i>Typha latifolia</i>	Common Cattail	
<i>Viola spp.</i>	Viola	

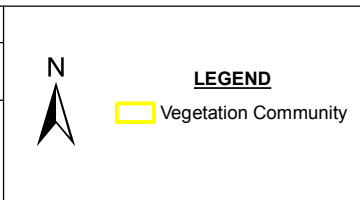
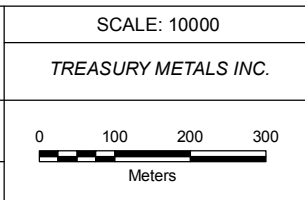




GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Vegetation Communities

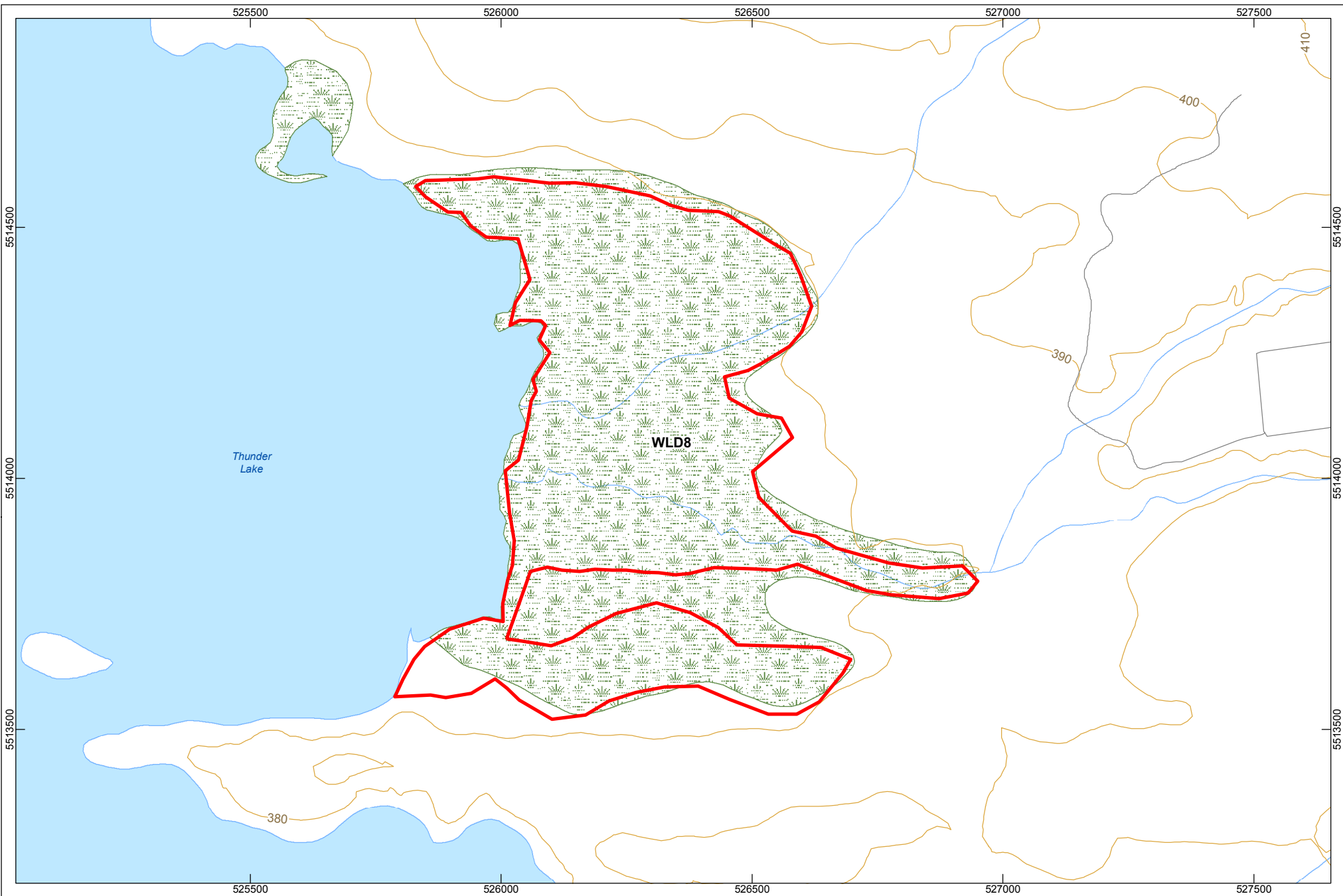
Wetland - WLD8 REV.01



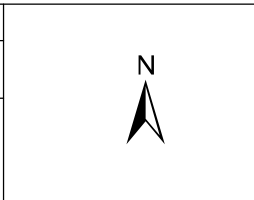
BE - Broad Leaven Emergents
 C - Conifers
 GC - Herbs and Ground Cover
 LS - Low Shrubs
 M - Moss and Lichens

NE - Narrow Leaved Emergents
 RE - Robust Emergents
 TS - Tall Shrubs



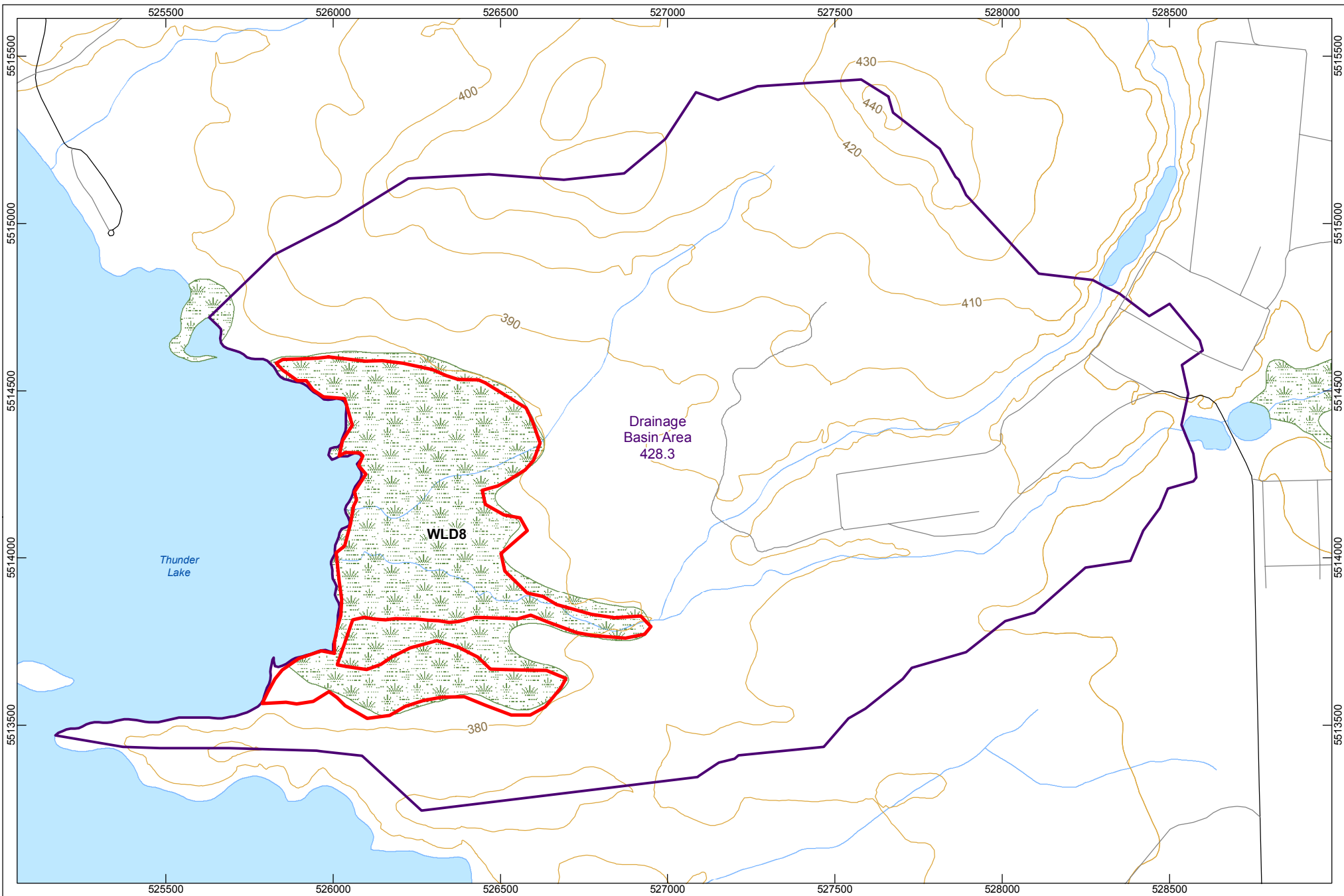


GOLIATH GOLD PROJECT DRYDEN, ONTARIO, CANADA		SCALE: 10000
Wetland Boundary Map		TREASURY METALS INC.
Wetland - WLD8	REV.00	0 100 200 300 Meters



LEGEND	
Expressway / Highway	Wetland Boundary: Ontario Wetland Evaluation System
Local	Wetland: Land Information Data Set
Resource / Recreation	Waterbody
Elevation Contour	Watercourse





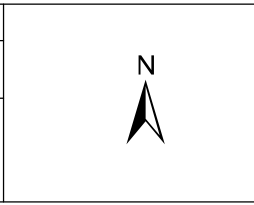
GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Wetland Drainage Basin Map

Wetland - WLD8 REV.00

SCALE: 15000

TREASURY METALS INC.



- LEGEND**
- Expressway / Highway
 - Local
 - Resource / Recreation
 - Elevation Contour
 - Wetland Boundary: Ontario Wetland Evaluation System
 - Drainage Basin
 - Wetland: Land Information Data Set
 - Waterbody
 - Watercourse



WETLAND DATA AND SCORING RECORD

- i) **WETLAND NAME:** WLD9
- ii) **MNR ADMINISTRATIVE REGION:** Northwest **DISTRICT:** Dryden
AREA OFFICE (if different from District): _____
- iii) **CONSERVATION AUTHORITY JURISDICTION:** N/A
(If not within a designated CA, check here: X)
- iv) **COUNTY OR REGIONAL MUNICIPALITY:** N/A
- v) **TOWNSHIP:** Zealand
- vi) **LOTS & CONCESSIONS:** Lot 4 and 5, Concessions 5 and 6
(attach separate sheet if necessary)
- vii) **MAP AND AIR PHOTO REFERENCES**
- a) Latitude: 49°47'01" Longitude: 92 °35'36"
- b) UTM grid reference: Zone: 15
Grid: E 529126 N 5514598
- c) Ontario Ministry of Natural Resources Data:
Lands Information Data
Lands Information Ontario
- d) Digital Orthoimagery: Date photos taken: summer 2010
Supplied by: Treasury Metals Inc.
Scale of mapping: 1:5,000
- e) Ontario Base Map numbers & scale 2015530055100 1:10,000

viii) WETLAND SIZE AND BOUNDARIES

a) Single contiguous wetland area: 15.8 hectares

b) Wetland complex comprised of ___ individual wetlands:

Wetland Unit Number (for reference)	Size of each wetland unit
Wetland Unit No. 1	_____ ha
Wetland Unit No. 2	_____ ha
Wetland Unit No. 3	_____ ha
Wetland Unit No. 4	_____ ha
Wetland Unit No. 5	_____ 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

(Attach additional sheets if necessary)

TOTAL WETLAND SIZE _____ ha

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

N/A

1.0 BIOLOGICAL COMPONENT

1.1 PRODUCTIVITY

1.1.1 GROWING DEGREE-DAYS/SOILS

GROWING DEGREE DAYS SOILS

(check one)	Estimated Fractional Area
_____ <1600	_____ clay/loam
_____ 1600-2000	_____ silt/marl
<u> x </u> 2000-2400	_____ limestone
_____ 2400-2800	_____ sand
_____ 2800-3000	_____ humic/mesic
_____ >3000	<u> 1.0 </u> fibric
	_____ granite

SCORING:

Growing Degree Days	Clay/Loam	Silt/Marl	Lime-stone	Sand	Humic/Mesic	Fibric	Granite
<1600	12	11	9	7	7	6	4
1600-2000	15	13	11	9	8	7	5
2000-2400	18	15	13	11	9	8*1	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

(maximum score 30; if wetland contains more than one soil type, evaluate based on the fractional area)

Steps required for evaluation: (maximum score 30 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.

Growing Degree Days/Soils Score (maximum 30 points): 8

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.1.2 WETLAND TYPE (Fractional Area = area of wetland type/ total wetland area)

Fractional Area Score

Bog	_____	x 3 =	_____
Fen	<u>0.2</u>	x 6 =	<u>1.2</u>
Swamp	<u>0.6</u>	x 8 =	<u>4.8</u>
Marsh	<u>0.2</u>	x 15 =	<u>3</u>

Wetland Type Score (maximum 15 points): 9

1.1.3 SITE TYPE (Fractional Area = area of site type/ total wetland area)

Fractional Area Score

Isolated	_____	x 1 =	_____
Palustrine (permanent or Intermittent flow)	<u>1.0</u>	x 2 =	<u>2</u>
Riverine	_____	x 4 =	_____
Riverine (at rivermouth)	_____	x 5 =	_____
Lacustrine (at rivermouth)	_____	x 5 =	_____
Lacustrine (on enclosed bay, with barrier beach)	_____	x 3 =	_____
Lacustrine (exposed to lake)	_____	x 2 =	_____

Site Type Score (maximum 5 points): 2

1.2 BIODIVERSITY

1.2.1 NUMBER OF WETLAND TYPES

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

Number of Wetland Types Score (Maximum 30 points): 20

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.2 VEGETATION COMMUNITIES

Attach a separate sheet listing community (map) codes, vegetation forms and dominant species. Use the form on the following page to record percent area by dominant vegetation form. This information will be used in other parts of the evaluation.

Communities should be grouped by number of forms. For example, 2 form communities might appear as follows:

2 forms

<u>Code</u>	<u>Forms</u>	<u>Dominant Species</u>
M6	re, ff	re, <i>Typha latifolia</i> ; ff, <i>Lemna minor</i> , <i>Wolffia</i>
S1	ts, gc	ts, <i>Salix discolor</i> ; gc, <i>Impatiens capensis</i> , <i>Thelypteris palustris</i>

Note that the dominant species for each form are separated by a semicolon. The dominant species (maximum of 2) within a form are separated by commas.

Scoring:

Total # of communities with 1-3 forms	Total # of communities with 4-5 forms	Total # of communities with 6 or more forms
1 = 1.5 points	1 = 2 points	1 = 3 points
2 = 2.5	2 = 3.5	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	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	+0.5 each additional community	+1 each additional community

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

$$6 + 13.5 + 15 = 34.5 = 35 \text{ points}$$

Vegetation Communities Score (maximum 45 points): 7

Northern Ontario Wetlands Evaluation, Data and Scoring Record

Wetland Name: WLD9

Wetland Size (ha): 15.8

Vegetation Form % area in which form is dominant

h	—
c	<u>0.6</u>
dh	—
dc	—
ts	<u>0.2</u>
ls	—
ds	—
gc	—
m	—
ne	<u>0.2</u>
be	—
re	—
ff	—
f	—
su	—
u (unvegetated)	—
Total =	100%

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.3 DIVERSITY OF SURROUNDING HABITAT

(Check all appropriate items)

<input type="checkbox"/>	recent burn (< 5yr)
<input checked="" type="checkbox"/>	abandoned agricultural land
<input checked="" type="checkbox"/>	utility corridor
<input type="checkbox"/>	deciduous forest
<input checked="" type="checkbox"/>	recent cutover or clearcut (<5 yr)
<input checked="" type="checkbox"/>	coniferous forest
<input checked="" type="checkbox"/>	mixed forest (at least 25% conifer and 75% deciduous or vice versa)
<input type="checkbox"/>	crops
<input type="checkbox"/>	abandoned pits or quarries
<input checked="" type="checkbox"/>	pasture
<input type="checkbox"/>	ravine
<input type="checkbox"/>	fence rows
<input type="checkbox"/>	open lake or deep river
<input type="checkbox"/>	creek floodplain
<input type="checkbox"/>	rock outcrop

Diversity of Surrounding Habitat Score (1 for each, maximum 7 points): 6

1.2.4 PROXIMITY TO OTHER WETLANDS

(Check first appropriate category only)

Scoring

1) <input checked="" type="checkbox"/>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river within 1.5 km	8 points
2) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
3) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or open lake or river from 1.5 to 4 km away	5
4) <input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
5) <input type="checkbox"/>	Within 0.75 km of other wetlands (different dominant wetland type) or open lake or river, but not hydrologically connected by surface water	5
6) <input type="checkbox"/>	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
7) <input type="checkbox"/>	No wetland within 1 km	0

Proximity to other Wetlands Score (Choose one only, maximum 8 points): 8

Northern Ontario Wetlands Evaluation, Data and Scoring Record

1.2.5 INTERSPERSION

Number of Intersections (check one)

1) 26 or less	_____	3
2) 27 to 40	<u> x </u>	6
3) 41 to 60	_____	9
4) 61 to 80	_____	12
5) 81 to 100	_____	15
6) 101 to 125	_____	18
7) 126 to 150	_____	21
8) 151 to 175	_____	24
9) 176 to 200	_____	27
10) >200	_____	30

Interspersion Score (Choose one only, maximum 30 points): 6
(35 intersections)

1.2.6 OPEN WATER TYPES

Permanently flooded (Check one)

1) No open water	_____	0
2) Type 1	_____	8
3) Type 2	_____	8
4) Type 3	<u> 3 </u>	14
5) Type 4	_____	20
6) Type 5	_____	30
7) Type 6	_____	8
8) Type 7	_____	14
9) Type 8	_____	3

Open Water Score (Choose one only, maximum 30 points): 14

1.3 SIZE

15.8 hectares

Size Score (Biological Component) (maximum 50 points): 9

Table 2. Evaluation Table for Size Score (Biological Component)

Wetland size (ha)	Total Score for Biodiversity Subcomponent									
	<37	37-47	48-60	61-72	73-84	85-96	97-108	109-120	121-132	>132
<20 ha	1	5	7	8	9	17	25	34	43	50
20-40	5	7	8	9	10	19	28	37	46	50
41-60	6	8	9	10	11	21	31	40	49	50
61-80	7	9	10	11	13	23	34	43	50	50
81-100	8	10	11	13	15	25	37	46	50	50
101-120	9	11	13	15	18	28	40	49	50	50
121-140	10	13	15	17	21	31	43	50	50	50
141-160	11	15	17	19	23	34	46	50	50	50
161-180	13	17	19	21	25	37	49	50	50	50
181-200	15	19	21	23	28	40	50	50	50	50
201-400	17	21	23	25	31	43	50	50	50	50
401-600	19	23	25	28	34	46	50	50	50	50
601-800	21	25	28	31	37	49	50	50	50	50
801-1000	23	28	31	34	40	50	50	50	50	50
1001-1200	25	31	34	37	43	50	50	50	50	50
1201-1400	28	34	37	40	46	50	50	50	50	50
1401-1600	31	37	40	43	49	50	50	50	50	50
1601-1800	34	40	43	46	50	50	50	50	50	50
1801-2000	37	43	47	49	50	50	50	50	50	50
>2000	40	46	50	50	50	50	50	50	50	50

2.0 SOCIAL COMPONENT

2.1 ECONOMICALLY VALUABLE PRODUCTS

2.1.1 WOOD PRODUCTS

Area of wetland forested (ha); not wetland size

1) <5 ha	_____	0
2) 5 – 25 ha	<u> x </u>	4
3) 26 – 50 ha	_____	6
4) 51 – 100 ha	_____	8
5) 101-200 ha	_____	11
6) > 200 ha	_____	14

Source of information: Forest Resource Inventory (FRI – GIS data)

Wood Products Score (Score one only, maximum 14 points): 4

2.1.2 LOWBUSH CRANBERRY

1) Present	<u> x </u>	2
2) Absent	_____	0

Source of information: Field observation

Lowbush Cranberry Score (maximum 2 points): 2

2.1.3 WILD RICE

1) Present	_____	10
2) Absent	<u> x </u>	0

Source of information: Field observation

Wild Rice Score (maximum 10 points): 0

2.3 LANDSCAPE AESTHETICS

2.3.1 DISTINCTNESS

- | | | |
|---------------------|---------------|---|
| 1) Clearly distinct | <u> x </u> | 3 |
| 2) Indistinct | <u> </u> | 0 |

Landscape Distinctness Score (maximum 3 points): 3

2.3.2 ABSENCE OF HUMAN DISTURBANCE

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

Source of information: Field observation-road, fuelwood operation

Absence of Human Disturbance Score (maximum 7 points): 4

2.4 EDUCATION AND PUBLIC AWARENESS

2.4.1 EDUCATIONAL USES

- | | | |
|---------------|---------------|----|
| 1) Frequent | <u> </u> | 20 |
| 2) Infrequent | <u> </u> | 12 |
| 3) No Visits | <u> x </u> | 0 |

Source of information: _____

Educational Uses Score (maximum 20 points): 0

Northern Ontario Wetlands Evaluation, Data and Scoring Record

2.4.2 FACILITIES AND PROGRAMS

1) Staffed interpretation centre with shelters, trails, literature	_____	8
2) No interpretation centre or staff, but a system of self-guided trails and observation points, or brochures available	_____	4
3) Facilities such as maintained paths (e.g., wood chips) Boardwalks, boat launches, or observation towers	_____	2
4) No facilities or programs	_____ x	0

Source of information: _____

Facilities and Programs Score (maximum 8 points): 0

2.4.3 RESEARCH AND STUDIES

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

Attach list of known reports by above categories

- *DST Consulting Engineers Terrestrial and Aquatic Baseline Environmental Reports 2014 (2012 data), Reference Number OE-KN-018101*

Research and Studies Score (Score is cumulative, maximum 12 points): 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	16
0.5 to 10 km from settlement	26	16	10
10 to 60 km from settlement	12	8	4
>60 km from settlement	5	2	0
>100 km from settlement	0	0	0

Name of settlement: Wabigoon Lake Ojibway Nation (WLON)

Proximity to Human Settlement Score (maximum 40 points): 10

2.6 OWNERSHIP (FA = fractional area)

Wetland in public or private ownership, held under contract or in trust for wetland protection

Fractional Area Score

_____ x 10 = _____

Wetland in public ownership, not as above

0.08 x 8 = 0.64

Wetland in private ownership, not as above

0.92 x 4 = 3.68

Source of information: Treasury Resources Inc.

Ownership Score (maximum 10 points): 4

Northern Ontario Wetlands Evaluation, Data and Scoring Record

2.7 SIZE (See size table -- Social Component)

15.8 hectares

Size Score (Social Component) (maximum 20 points): 7

Table 3. Evaluation Table for Size Score (Social Component)

Wetland size (ha)	Total for Size Dependent Score									
	<30	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
2-4	1	2	4	8	12	13	14	14	15	16
5-8	2	2	5	9	13	14	15	15	16	16
9-12	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	18	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	19	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	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.

2.8.1 ABORIGINAL VALUES

Full documentation of sources must be attached to the data record.

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

2.8.2 CULTURAL HERITAGE

Significant	_____	30
Not Significant	_____	0
Unknown	_____	0

Aboriginal Values/Cultural Heritage Score (maximum 30 points): 0

3.0 HYDROLOGICAL COMPONENT

3.1 FLOOD ATTENUATION

If the wetland is a complex including isolated wetlands, apportion the 100 points according to area. For example, if 10 ha of a 100 ha complex is isolated, the isolated portion receives the maximum proportional score of 10. The remainder of the wetland is then evaluated out of the remaining 90 points.

Step 1.

If wetland is entirely Isolated, go directly to Step 5.

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 5.

All other wetlands, go through steps 2, 3, 4 and 5.

Step 2.

Determination of Upstream Detention Factor (DF)

(a)	Wetland area (ha)	<u>15.8</u>
(b)	Total area (ha) of <u>upstream</u> detention areas (include the wetland itself)	<u>636.6</u>
(c)	Ratio of (a):(b)	<u>0.025</u>
(d)	Upstream detention factor: (c) x 2 = (Maximum allowable factor = 1)	<u>0.05</u>

Step 3.

Determination of Peak Flow Attenuation Factor (AF)

(a)	Wetland area (ha)	<u>15.8</u>
(b)	Size of catchment basin (ha) <u>upstream</u> of wetland (include wetland itself in catchment area)	<u>1060.7</u>
(c)	Ratio of (a):(b)	<u>0.015</u>
(d)	Wetland attenuation factor: (c) x 10 = (Maximum allowable factor = 1)	<u>0.15</u>

Step 4.

Determination of Wetland Surface Form Factor (FF)

From the list below, select the surface form which best describes the wetland.

	Factor	
Flooded with little or no aquatic vegetation	_____	0
Flooded but with submergent, emergent or floating vegetation	_____	0.2
Flat (lawn) vegetation (typical of fens)	_____	0.5
Hummock-depression microtopography	<u> x </u>	0.7
Patterned (e.g., string bog, ribbed fen)	_____	1.0

Surface Form Factor (FF) 0.7

(Maximum allowable factor = 1)

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Step 5. Calculation of Final Score

1. Wetland is entirely Isolated 100 points
2. Wetland is lacustrine and the ratio of wetland area:lake area is <0.1 0 points
3. Wetland is riverine along the St. Mary's River 0 points
4. For all other wetlands*, calculate as follows:

(a)	Upstream Detention Factor (DF) (Step2)	<u>0.05</u>
(b)	Wetland Attenuation Factor (AF) (Step 3)	<u>0.15</u>
(c)	Surface Form Factor (FF) (Step 4)	<u>0.7</u>

$$[(DF + AF + FF)/3] \times 100^* \quad \underline{30}$$

* Unless wetland is a complex including isolated portions -- see above

Total Flood Attenuation Score (maximum 100 points): 30

3.2 GROUND WATER RECHARGE

3.2.1 SITE TYPE

- 1) Wetland > 50% lacustrine (by area) or located on the St. Mary's River Score = 0
- 2) Wetland not as above. Calculate final score as follows:
(FA = area of site type/total area of wetland)

<u>1.0</u>	FA of isolated or palustrine wetland	x 20 = <u>20</u>
<u> </u>	FA of riverine wetland	x 5 = <u> </u>
<u> </u>	FA of lacustrine wetland (wetland <50% lacustrine)	x 0 = <u> </u>

Site Type Score: (maximum 20 points): 20

3.2.2 SOILS

EVALUATION:

Dominant Wetland Type	Sand, loam, gravel, till	Clay, bedrock
Lacustrine or on St. Mary's River	0	0
Isolated	10	5
Palustrine	7	4
Riverine (not on St. Mary's River)	5	2

Hydrological Soil Class Score (maximum 10 points): 7

3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

3.3.1 WATERSHED IMPROVEMENT FACTOR

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

<u>Site Type</u>	<u>Improvement Factor (IF)</u>
Isolated	FA _____ x 0.5 = _____
Riverine	FA _____ x 1.0 = _____
Palustrine with no inflow	FA _____ x 0.7 = _____
Palustrine with inflows	FA <u>1.0</u> x 1.0 = <u>1.0</u>
Lacustrine on lake shoreline	FA _____ x 0.2 = _____
Lacustrine at lake inflow or outflow	FA _____ x 1.0 = _____

Watershed Improvement Score (IF x 30) (maximum = 30): 30

3.3.2 ADJACENT AND WATERSHED LAND USE EVALUATION:

Step 1. Determination of Maximum Initial Score

_____ Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)

_____ x _____ All other wetlands (Go through steps 2, 3, 4, and 5b)

Step 2. Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in an extensive manner.

Choose one		
> 50% of catchment basin	_____	20
20-50% of catchment basin	_____	14
< 20% of catchment basin	_____ x _____	4

Score for BLU: 4

Step 3. Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

Choose the highest only

Major corridor ¹	_____	15
Secondary corridor	_____	11
Tertiary corridor	_____	6
Temporary or abandoned	_____	3
None	_____ x _____	0

Score for LUU: 0

¹ Major, secondary and tertiary roads are those that are indicated as such on the provincial highways map. Major hydro corridors are trunk lines coming directly from a generating station. Major pipelines are trans-continental lines. Secondary corridors are regional distribution lines (i.e. multi-cable hydro corridors not emanating directly from a generating station or regional gas distribution lines). Tertiary corridors are single hydro lines or local gas distribution lines (i.e. to domestic users).

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Step 4. Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits use for local road construction), etc. Score as 'present' only if a point source land use is located less than 1 km upstream from the wetland.

a) Present	_____	15
b) Absent	_____x_____	0

Score for PS: 0

Step 5. Calculation of total score for Adjacent and Watershed Land Use

	Score
a) Wetland on the Great Lakes or St. Mary's River	0
b) All other wetlands, calculate as follows:	

Final Score BLU + LUU + PS: 4

3.3.3 VEGETATION FORM

Choose the category that best describes the vegetation of the wetland

Trees, shrubs or herbs (h, c, ts, ls, gc)	_____x_____	8
Emergents, submergents (ne, re, be, f, ff, su)	_____	10
Little or no vegetation (u)	_____	0

Dominant Vegetation Form Score (maximum 10 points): 8

3.4 CARBON SINK

Choose the category that best describes the wetland.

1) Wetland a bog or fen with > 50% organic soils	_____	15
2) Wetland has organic soils occupying 10 to 50% of the area (i.e. mainly mineral or undesignated soil, any wetland type)	_____	6
3) Marshes and swamps with >50% organic soil	_____x_____	9
4) Wetland with <10% organic soils	_____	0

Carbon Sink Score (maximum 15 points): 9

3.5 SHORELINE EROSION CONTROL

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.

- Step 1. _____ Score
 x Wetland entirely isolated or palustrine 0
 _____ Any part of the wetland riverine, or lacustrine (proceed to Step 2)

Step 2. Choose the one characteristic that best describes the shoreline vegetation.
 (See text for the definition of shoreline.)

- Trees and shrubs _____ 15
 Emergent vegetation _____ 8
 Submergent vegetation _____ 6
 Other shoreline vegetation _____ 3
 No vegetation _____ 0

Shoreline Erosion Control Score (maximum 15 points): 0

3.6 GROUNDWATER DISCHARGE

(Circle the characteristics that best describe the wetland being evaluated and sum the scores.)

Category	Catchment interaction		
Wetland type	Bog = 0	Swamp/Marsh = 2	Fen = 5
Basin topography	Flat/Rolling = 0	Hilly = 2	Major relief break = 5
Wetland area:Upslope catchment area	Large (>50%) = 0	Moderate (6 - 50%) = 2	Small (<5%) = 5
Lagg development	None found = 0	Minor = 2	Extensive = 5
Seeps at wetland edge	None found = 0	1 to 3 seeps = 5	4 or more seeps = 10
Iron precipitates evident at edge	None = 0	1-3 deposits = 2	4 or more deposits = 5
Surface marl deposits	None = 0	1-3 deposits = 2	> 3 = 5
Wetland pH	Low < 4.2 = 0	Moderate 4.2-5.7 = 5	High >5.7 = 10
Catchment soil coverage	Patchy = 0	Thin (<20 cm) = 2	Thick = 5
Catchment soil permeability	Low = 0	Moderate = 2	High = 5

(Scores are cumulative, maximum score 30 points)

Groundwater Discharge Score (maximum 30 points): 21

4.0 SPECIAL FEATURES COMPONENT

4.1 RARITY

4.1.1 WETLANDS

Hills Site Region and Site District (5E only): _____

Wetland type (check one or more)

- Bog
- Fen
- Swamp
- Marsh

Evaluation Table for Scoring Rarity of Wetland Type.

Unit Number	Site Region & District	Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	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
5E-1	Thessalon	10	0	30	20
5E-2	Gore Bay	20	0	20	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tomiko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E-12	Renfrew	0	0	30	10
5-S	Lake of the Woods	10	10	20	10

Rarity of Wetland Type Score (Maximum 70 points): 50

4.1.2 SPECIES

4.1.2.1 BREEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

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

Attach documentation

Scoring

For one species	250
For each additional species	250

(Score is cumulative, no maximum score)

Breeding Habitat for Endangered or Threatened Species Score (no maximum): 0

4.1.2.2 TRADITIONAL MIGRATION OR FEEDING HABITAT FOR AN ENDANGERED OR THREATENED SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach documentation

Scoring

For one species	150 points
For each additional species	75

(Score is cumulative, no maximum score)

Traditional Habitat for Endangered or Threatened Species Score (no maximum): 0

4.1.2.3 PROVINCIALY SIGNIFICANT ANIMAL SPECIES

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	<u>Olive sided Flycatcher</u>	<u><i>Contopus cooperi</i></u>	<u>field observation</u>
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant animal species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.) (no maximum score)

Provincially Significant Animal Species Score (no maximum): 50

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4.1.2.4 PROVINCIALY SIGNIFICANT PLANT SPECIES

(Scientific names must be recorded)

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary. Attach documentation.

Number of provincially significant plant species in the wetland:

One species	=	50 points	14 species	=	154
2 species	=	80	15 species	=	156
3 species	=	95	16 species	=	158
4 species	=	105	17 species	=	160
5 species	=	115	18 species	=	162
6 species	=	125	19 species	=	164
7 species	=	130	20 species	=	166
8 species	=	135	21 species	=	168
9 species	=	140	22 species	=	170
10 species	=	143	23 species	=	172
11 species	=	146	24 species	=	174
12 species	=	149	25 species	=	176
13 species	=	152			

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species Score (no maximum): 0

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4.1.2.5 REGIONALLY SIGNIFICANT SPECIES (SITE REGION)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

SIGNIFICANT IN SITE REGION:

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Attach separate list if necessary; Attach documentation

** Score only if there is an approved list.

No. of species significant in Site Region

One species	=	20	6 species	=	55
2 species	=	30	7 species	=	58
3 species	=	40	8 species	=	61
4 species	=	45	9 species	=	64
5 species	=	50	10 species	=	67

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

Significant Species (Site Region) Score (no maximum): 0

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4.2.1.6 LOCALLY SIGNIFICANT SPECIES (SITE DISTRICT)

Scientific names must be recorded for plant species. **Lists of significant species to be scored must be approved by MNR.**

	<u>Name of species</u>	<u>Scientific Name</u>	<u>Source of information</u>
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____
5)	_____	_____	_____

Source of information: _____

Attach separate list if necessary; Attach documentation.

Scoring

No. of species significant in Site District

One species	=	10	6 species	=	41
2 species	=	17	7 species	=	43
3 species	=	24	8 species	=	45
4 species	=	31	9 species	=	47
5 species	=	38	10 species	=	49

For each significant species over 10 in the wetland, add 1 point.

Locally Significant Species (Site District) Score (no maximum): 0

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4.1.2.7 SPECIES OF SPECIAL STATUS

Black Duck

Suitable breeding habitat present and within assessment range (Figure 17)

Assessment Category		
40 - 80 Indicated Pairs/100 km sq	_____	25
20 - 40 Indicated Pairs/100 km sq	_____	20
10 - 20 Indicated Pairs/100 km sq	_____	15
5 - 10 Indicated Pairs/100 km sq	_____	10
1 - 5 Indicated Pairs/100 km sq	_____	5
Habitat not suitable	<u> x </u>	0
Out of assessment range	_____	0

Black Duck Score (maximum 25 points): 0

4.2 SIGNIFICANT FEATURES AND HABITATS

4.2.1 NESTING OF COLONIAL WATERBIRDS

Status	Name of species	Source of information	Score
Currently nesting			50 points
Known to have nested within past 5 years			25
Active feeding area (great blue heron excluded)			15
None known			0

Attach documentation (nest locations, etc., if known)

Colonial Waterbirds Score (maximum 50 points): 0

4.2.2. WINTER COVER FOR WILDLIFE

(Check only highest level of significance)		<u>Score</u> (one only)
1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	25
3) Locally significant	_____	10
4) Little or poor winter cover present	<u> x </u>	0

Source of information: _____

Winter cover for Wildlife Score (maximum 100 points): 0

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4.2.3 WATERFOWL STAGING AND/OR MOULTING

(Check only highest level of significance for both staging and moulting; score is cumulative across columns, maximum 150 points)

	<u>Staging</u>	Score (one only)	<u>Moulting</u>	Score (one only)
1) Nationally significant	_____	150	_____	150
2) Provincially significant	_____	100	_____	100
3) Regionally significant	_____	50	_____	50
4) Known to occur	_____	10	_____	10
5) Not possible	_____	0	_____	0
6) Not known	<u> x </u>	0	_____	0

Source of information: _____

Waterfowl Moulting and Staging Score (maximum 150 points): 0

4.2.4 WATERFOWL BREEDING

(Check only highest level of significance)

1) Provincially significant	_____	100
2) Regionally significant	_____	50
3) Habitat suitable	_____	10
4) Habitat not suitable	<u> x </u>	0

Source of information: _____

Waterfowl Breeding Score (maximum 100 points): 0

4.2.5 MIGRATORY PASSERINE, SHOREBIRD OR RAPTOR STOPOVER AREA

(check highest applicable category)

1) Provincially significant	_____	100
2) Significant in Site Region	_____	50
3) Significant in Site District	_____	10
3) Not significant	<u> x </u>	0

Source of information: _____

Passerine, Shorebird or Raptor Stopover Score (maximum 100 points): 0

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4.2.6 UNGULATE HABITAT

EVALUATION:

Score (1) + (2) + <u>one</u> of (3) to (6)		
(1) Ungulate summer cover	_____	15
(2) Mineral licks	_____	50
(3) Moose aquatic feeding area Class 1	<u> x </u>	0
(4) Moose aquatic feeding area Class 2	_____	10
(5) Moose aquatic feeding area Class 3	_____	20
(6) Moose aquatic feeding area Class 4	_____	35

(Score is cumulative for a maximum possible score of 100)

Ungulate Habitat Score (maximum 100 points): 0

4.2.7 FISH HABITAT

4.2.7.1 Spawning and Nursery Habitat

Table 5. Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5 - 4.9	0.2
5.0 - 9.9	0.4
10.0 - 14.9	0.6
15.0 - 19.9	0.8
20.0+ ha	1.0

Step 1:

_____ Fish habitat is not present within the wetland (Score = 0)

 x Fish habitat is present within the wetland (Go to Step 2)

Step 2: Choose only one option

1) _____ Significance of the spawning and nursery habitat within the wetland is known
(Go to Step3)

2) x **Significance of the spawning and nursery habitat within the wetland is not known (Go through Steps 4, 5, 6, and 7)**

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Step 3: Select the highest appropriate category below, attach documentation:

- 1) Significant in Site Region _____ 100
- 2) Significant in Site District _____ 50
- 3) Locally Significant Habitat (5.0+ ha) _____ 25
- 3) Locally Significant Habitat (<5.0 ha) _____ 15

Score for Spawning and Nursery Habitat (maximum score 100 points): 0

Step 4: Proceed to Steps 4 to 7 only if Step 3 was not scored

(**Low Marsh:** marsh area from the existing water line out to the outer boundary of the wetland)

- x Low marsh not present (Continue to Step 5)
- Low marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community. Check the appropriate Vegetation Group (see Appendix 16) for each Low Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass				6	
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
5	Duckweed				2	
6	Smartweed-Waterwillow				6	
7	Waterlily-Lotus				11	
8	Waterweed-Watercress				9	
9	Ribbongrass				10	
10	Coontail-Naiad-Watermilfoil				13	
11	Narrowleaf Pondweed				5	
12	Broadleaf Pondweed				8	
Total Score (maximum 75 points)						

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Step 5: High Marsh: area from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.

_____ High marsh not present (Continue to Step 6)
 x High marsh present (Score as follows)

Scoring for Presence of Key Vegetation Groups

Scoring is based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community. Check the appropriate Vegetation Group for each High Marsh community. Sum the areas of the communities assigned to each Vegetation Group and multiply by the appropriate size factor from Table 5.

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (see Table 5)	Multiplication Factor	Final Score
1	Tallgrass	x	0.2	0.1	6	0.6
2	Shortgrass-Sedge				11	
3	Cattail-Bulrush-Burreed				5	
4	Arrowhead-Pickerelweed				5	
Total Score (maximum 25 points)						0.6

Step 6: Swamp: Swamp communities containing fish habitat, either seasonally or permanently. Determine the total area of seasonally flooded swamps and permanently flooded swamps containing fish habitat.

 x Swamp containing fish habitat not present (Continue to Step 7)
 _____ Swamp containing fish habitat present (Score as follows)

Swamp containing fish habitat	Present (check)	Total area (ha)	Area Factor (see Table 5)	Score	TOTAL SCORE (factor x score)
seasonally flooded				10	
permanently flooded				10	
SCORE (maximum 20 points)					

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Step 7: Calculation of final score

Score for Spawning and Nursery Habitat (Low Marsh) (maximum 75 points) _____

Score for Spawning and Nursery Habitat (High Marsh) (maximum 25 points) 0.6

Score for Swamp Containing Fish Habitat (maximum 20 points) _____

Sum (maximum score 100 points): 1

4.2.7.2 Migration and Staging Habitat

Step 1:

1) Staging or Migration Habitat is not present in the wetland _____ (Score = 0)

2) Staging or Migration Habitat is present in the wetland, significance of the habitat is known x
(Go to Step 2)

3) Staging or Migration Habitat is present in the wetland, significance of the habitat is not known _____
(Go to Step 3)

Only one of Step 2 or Step 3 is to be scored.

Step 2: Select the highest appropriate category below, attach documentation:

1) Significant in Site Region _____ 25

2) Significant in Site District _____ 15

3) Locally Significant _____ 10

4) Fish staging and/or migration habitat present, but not as above x 5

Score for Fish Migration and Staging Habitat (maximum score 25 points): 0

Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to be the dominant site type). Note name of river for 2) and 3).

1) Wetland is riverine at rivermouth or lacustrine at rivermouth _____ 25

2) Wetland is riverine, within 0.75 km of rivermouth _____ 15

3) Wetland is lacustrine, within 0.75 km of rivermouth _____ 10

4) Fish staging and/or migration habitat present, but not as above _____ 5

Score for Staging and Migration Habitat (maximum score 25 points): 5

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4.3 ECOSYSTEM AGE (Fractional Area = Area of wetland type/total area of wetland)

	Fractional Area		Scoring
Bog	_____	x 25	_____
Fen, treed to open on deep soils, floating mats or marl	<u>0.2</u>	x 20	<u>4</u>
Fen, on limestone rock	_____	x 5	_____
Swamp	<u>0.6</u>	x 3	<u>1.8</u>
Marsh	<u>0.2</u>	x 0	<u>0</u>

Ecosystem Age Score (maximum 25 points): 6

4.4 GREAT LAKES COASTAL WETLANDS

Score for coastal (see text for definition) wetlands only

Choose one only	
wetland <10 ha	_____10
wetland 10-50 ha	_____25
wetland 51-100 ha	_____50
wetland >100 ha	_____75

Great Lakes Coastal Wetlands Score (maximum 75 points): 0

5.0 EXTRA INFORMATION

5.1 PURPLE LOOSESTRIFE

Absent/Not seen x

Present

- 1) One location in wetland
- Two to many locations

Abundance code

- a) < 20 plants
- b) 20-99 plants
- c) 100-999 plants
- d) > 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)
- Seasonal (1 to 3 months) x
- 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
- Observed or heard on lake or river adjoining the wetland
- x not as above

Northern Ontario Wetlands Evaluation, Data and Scoring Record

INVESTIGATORS

Krista Prosser

AFFILIATION

DST Consulting engineers

DATES WETLAND VISITED

September 6, 2012

DATE THIS EVALUATION COMPLETED:

February 18, 2013

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

5

WEATHER CONDITIONS

i) at time of field work : 13°C, sunny with clouds.

ii) summer conditions in general : precipitation levels were high in June and August.

OTHER POTENTIALLY USEFUL INFORMATION:

An additional site visit is recommended to occur during the spring or early summer to acquire a more complete list of all aquatic vegetation species and sedges. Also to better assess open water areas and aquatic habitat – as minnows were captured by DST staff during environmental monitoring in June 2012. The wetland boundary could potentially be expanded to include the adjacent northern edge which becomes a very large marsh and possibly fen wetland complex.

CHECKLIST OF PLANT AND ANIMAL SPECIES RECORDED IN THE WETLAND:

attach list of all flora and fauna observed in the wetland:

* Indicate if voucher specimens or photos have been obtained, where located, etc.)

Northern Ontario Wetlands Evaluation, Data and Scoring Record

SUMMARY OF EVALUATION RESULT

Wetland WLD9_____

TOTAL FOR 1.0 BIOLOGICAL COMPONENT	<u>89</u>
TOTAL FOR 2.0 SOCIAL COMPONENT	<u>54</u>
TOTAL FOR 3.0 HYDROLOGICAL COMPONENT	<u>129</u>
TOTAL FOR 4.0 SPECIAL FEATURES COMPONENT	<u>112</u>
<u>WETLAND TOTAL</u>	<u>384</u>

INVESTIGATORS

Krista Prosser,

AFFILIATION

DST Consulting Engineers

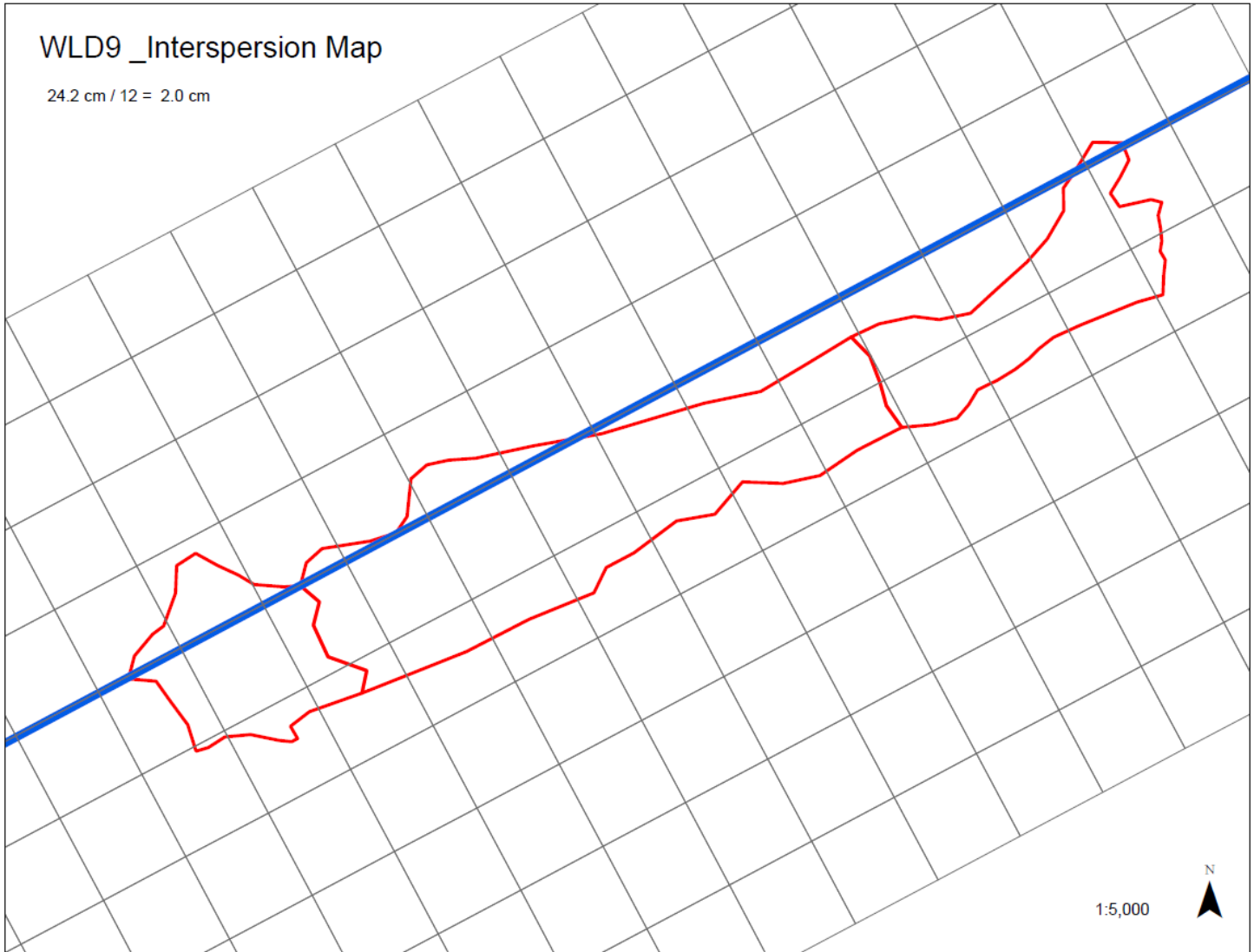
DATE: February 18, 2014

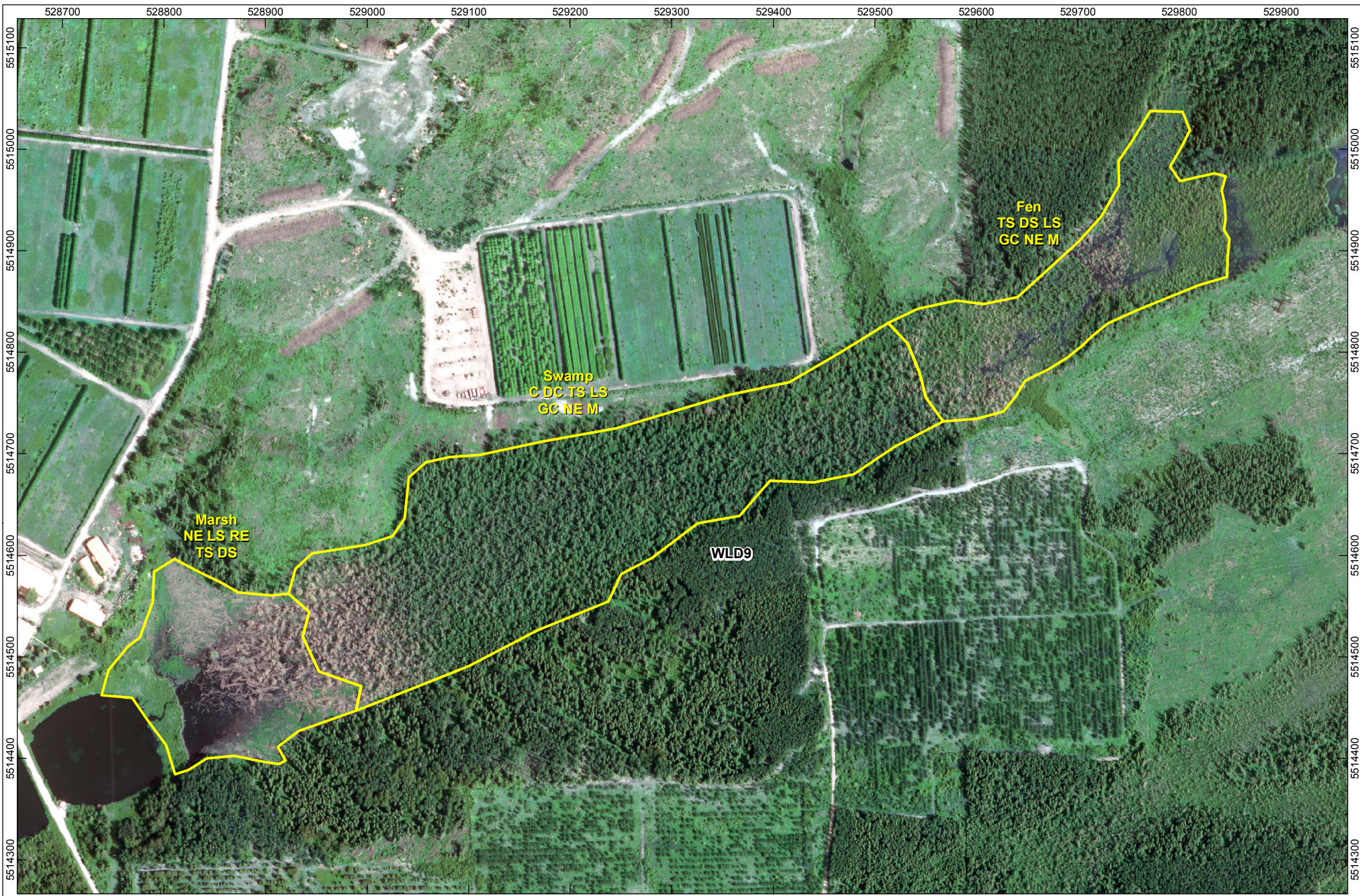
Northern Ontario Wetlands Evaluation, Data and Scoring Record






Wetland ID: wld9		Site Type: Palustrine	
Date Surveyed: September 6, 2012			
<u>BIOLOGICAL COMPONENT</u>			
Productivity		Growing Degree-Day/soils (max 30)	8
		Wetland Type (max 15)	9
		Site Type (max 5)	2
Biodiversity	=	Number of Wetland types (max 30)	20
		Vegetation Communities (max 45)	7
		Diversity of Surrounding Habitat (max 7)	6
		Proximity to other wetlands (max 8)	8
		Interspersion (max 30)	6
		Open water type (max 30)	14
		Size (max 50)	9
		Total Biological Component (not to exceed 250)	89
<u>SOCIAL COMPONENT</u>			
Economically Valuable Products		Wood products (max 14)	4
		Low Bush Cranberry (max 2)	2
		Wild rice (max 10)	0
		Commercial fish (max 12)	12
		Furbearers (max 12)	3
Recreational Activities		Hunting/Fishing/Nature (max 80)	0
		Landscape Distinctness (max 3)	3
		Absence of human disturbance (max 7)	4
		Educational Uses (max 20)	0
		Facilities and Programs (8)	0
		Research and Studies (max 12)	5
		Proximity to human settlement (max 40)	10
		Ownership (max 10)	4
		Size (max 20)	7
		Aboriginal and cultural (max 30)	0
		Total for Social Component (not to exceed 250)	54
<u>HYDROLOGICAL COMPONENT</u>			
		Flood attenuation (max 100)	30
Ground Water Recharge		Site type (20)	20
		Hydrological Soils (max 10)	7
Downstream Water Quality Improvement		Watershed Improvement (max 30)	30
		Adjacent Watershed Land Use (max 60)	4
		Vegetation form (max 10)	8
		Carbon Sink (max 15)	9
		Shoreline erosion control (max 15)	0
		Groundwater Discharge (max 30)	21
		Total for Hydrological Component (not to exceed 250)	129
<u>SPECIAL FEATURES</u>			
Rarity		Wetlands (max 70)	50
		Endangered/Threatened spp. breeding habitat (no max)	0
		Traditional use by endanger/threatend spp. (no max)	0
		Provincially significant animals (no max)	50
		Provincially significant plants (no max)	0
		Regionally significant spp. (no max)	0
		Locally significant spp. (no max)	0
		Species of Special Status (Black Duck) (max 25)	0
Significant Features and Habitats		Colonial Waterbirds (max 50)	0
		Winter Cover for Wildlife (max 100)	0
		Waterfowl Staging/Moutling (max 150)	0
		Waterfowl Breeding (max 100)	0
		Migratory Passerine, Shorebird or Raptor stopover (max 100)	0
		Ungulate Habitat (max 100)	0
		Fish Nursery Habitat (max 100)	1
		Fish Staging/Migration Habitat Present (max 25)	5
		Ecosystem Age (max 25)	6
		Great Lake Coastal Wetlands (max 75)	0
		Total for Special features (not to exceed 250)	112
TOTAL			384

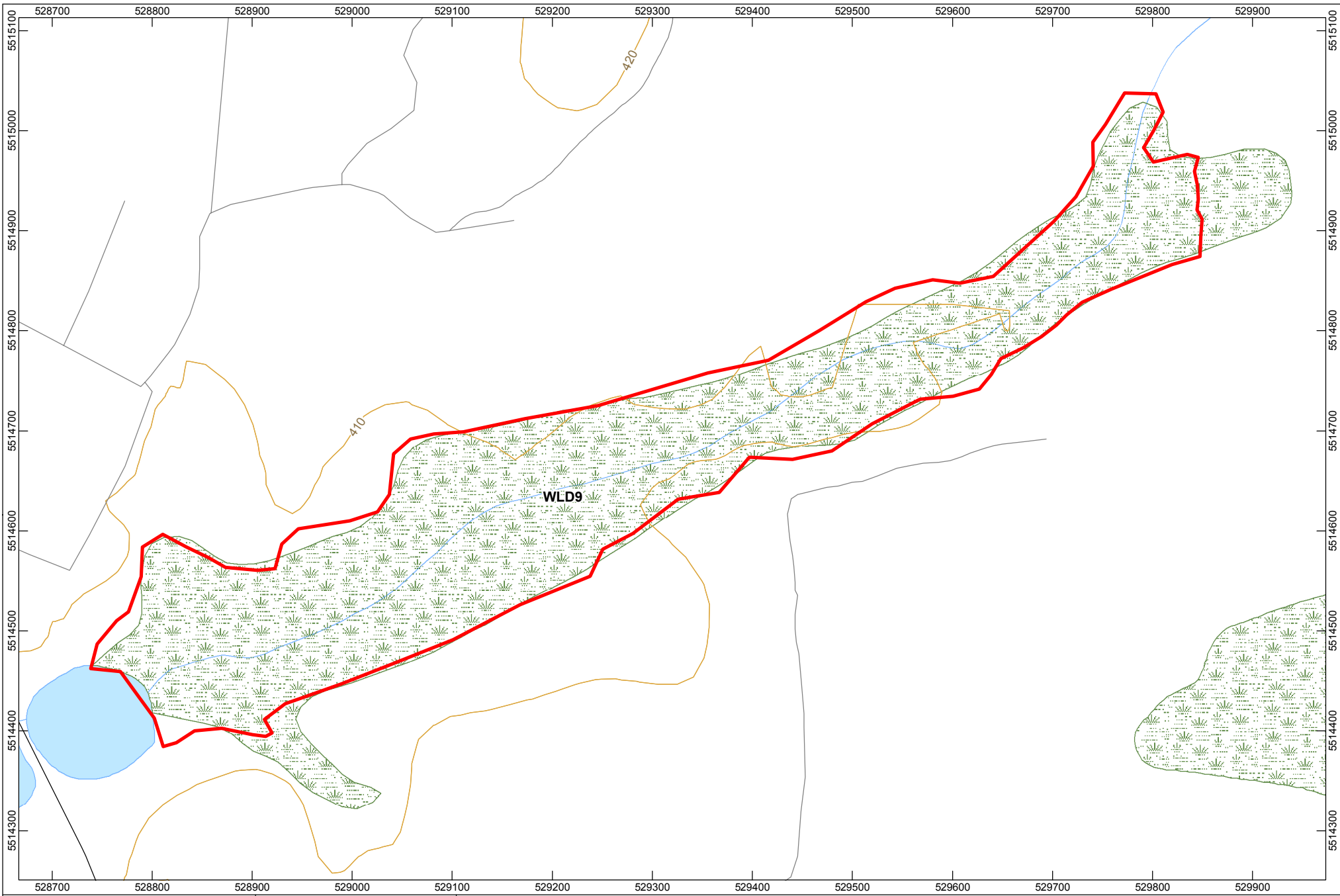
Northern Ontario Wetlands Evaluation, Data and Scoring Record

Scientific Name	Common Name	Wildlife Observed
<i>Agrostis scabra</i>	Tickle grass	Blue Jay
<i>Alnus incana</i>	Speckled Alder	White-winged Crossbill
<i>Aster borealis</i>	Rush aster	Gray Jay
<i>Aster lanceolatus</i>	Lance-leaved aster	Sharp-shinned Hawk
<i>Aster puniceus</i>	Purple stemmed aster	Lincoln's Sparrow
<i>Aulacomnium palustre</i>	Ribbed bog moss	Swamp Sparrow
<i>Betula glandulosa</i>	Dwarf Birch	Common Yellowthroat
<i>Bidens cernua</i>	Nodding bur marigold	Olive-sided Flycatcher
<i>Calamagrostis canadensis</i>	Canada Bluejoint	Boreal Chickadee
<i>Caltha palustris</i>	Marsh marigold	White-throated Sparrow
<i>Carex aquatilis</i>	Wire sedge	Golden-crowned Kinglet
<i>Carex bebbii</i>	Bebb's sedge	Beaver evidence
<i>Carex lacustris</i>	Lakebank sedge	
<i>Carex utriculata</i>	Beaked sedge	
<i>carex viridula</i>	Green sedge	
<i>Cirsium multicum</i>	Swamp thistle	
<i>Coptis trifolia</i>	Goldthread	
<i>Cornus stolonifera</i>	Red-Osier dogwood	
<i>Crex disperma</i>	Soft-leaved sedge	
<i>Equisetum palustre</i>	Marsh horsetail	
<i>Equisetum sylvaticum</i>	Wood horsetail	
<i>Eupatorium maculatum</i>	Spotted Joe-Pye weed	
<i>Fragaria virginiana</i>	Common strawberry	
<i>Galium trifidum</i>	Small bedstraw	
<i>Gaultheria hispidula</i>	Creeping snowberry	
<i>Glyceria borealis</i>	Northern manna	
<i>Glyceria canadensis</i>	Rattlesnake manna grass	
<i>Glyceria grandis</i>	Tall manna grass	
<i>Impatiens capensis</i>	Jewelweed	
<i>Iris versicolor</i>	Northern blue flag	
<i>Juncus tenuis</i>	Path rush	
<i>kalmia polifolia</i>	Bog laurel	
<i>Larix laricina</i>	Tamarack	
<i>Lycopodium annotinum</i>	Clubmoss	
<i>Lycopus uniflorus</i>	Northern bugleweed	
<i>Maianthemum trifolium</i>	Three-Leaved Solomon's Seal	
<i>Menyanthes trifoliata</i>	Buckbean	
<i>Phragmites australis</i>	Common reed	
<i>Picea mariana</i>	Black Spruce	
<i>Poa palustris</i>	Fowl blue grass	
<i>Potentilla palustris</i>	Marsh cinquefoil	
<i>Rubus pubescens</i>	Dwarf raspberry	
<i>Salix spp.</i>	Willow	
<i>Salix spp.</i>	Willow	
<i>Sarracenia purpurea</i>	Pitcher-plant	
<i>Scirpus cyperinus</i>	Wool grass	
<i>Sphagnum spp.</i>	Common peat moss	
<i>Thuidium delicatulum</i>	Common fern moss	
<i>Thuja occidentalis</i>	Eastern White Cedar	
<i>Thuja occidentalis</i>	Eastern White Cedar	
<i>Typha latifolia</i>	Common Cattail	
<i>Vaccinium oxycoccos</i>	Small Cranberry	
<i>Viola spp.</i>	Viola	
	Dead Trees	





GOLIATH GOLD PROJECT DRYDEN, ONTARIO, CANADA		SCALE: 5000		LEGEND  Vegetation Community	C - Conifer DC - Dead Conifers DS - Dead Shrubs GC - Herbs and Ground Cover LS - Low Shrubs	M - Moss and Lichens NE - Narrow Leaved Emergents RE - Robust Emergents TS - Tall Shrubs		
Vegetation Communities		 Meters						
Wetland - WLD9	REV.01							



GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Wetland Boundary Map

Wetland - WLD9 REV.00

SCALE: 5000

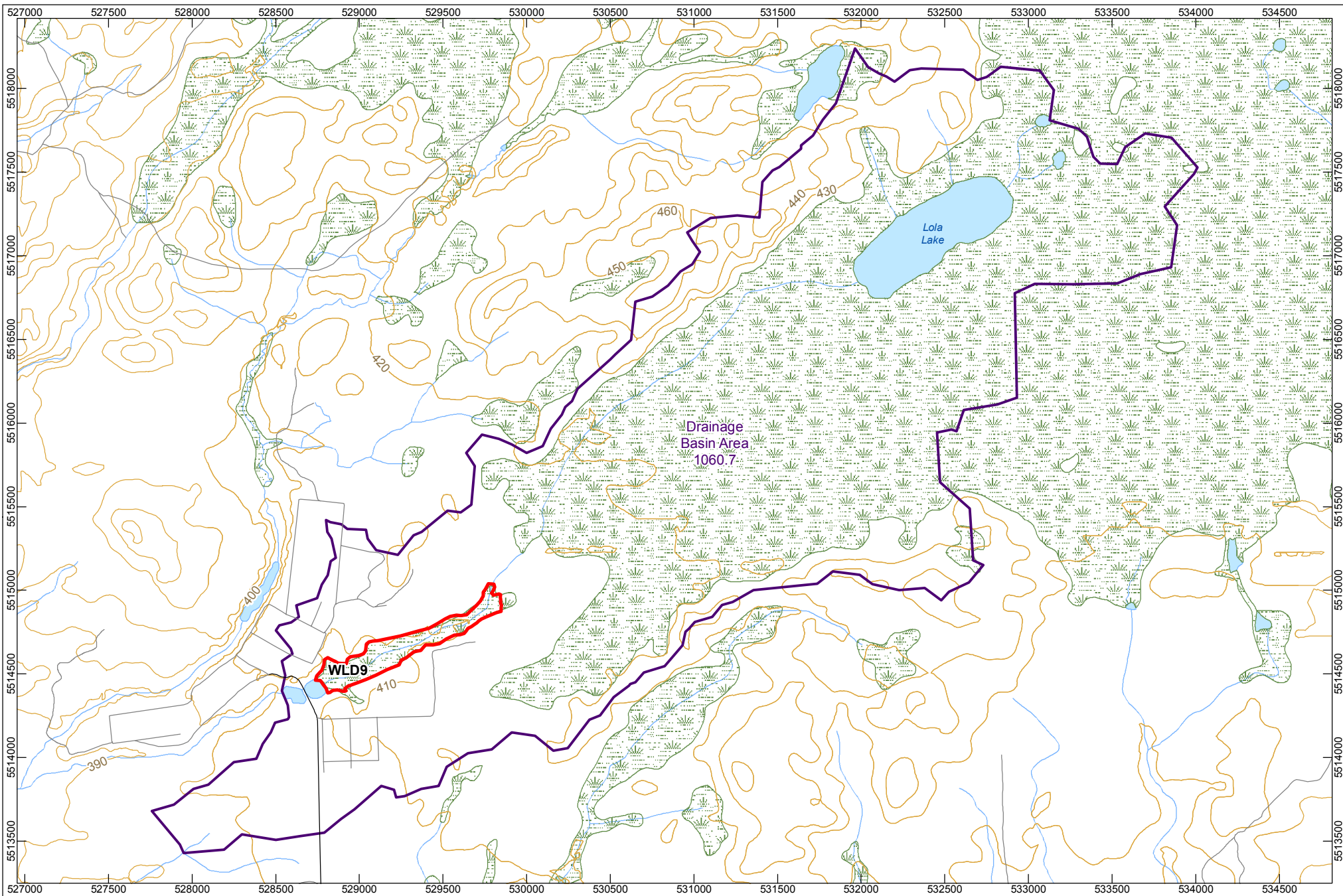
TREASURY METALS INC.

Meters



LEGEND

- Expressway / Highway
- Local Roadway
- Resource / Recreational Road
- Elevation Contour
- Wetland Boundary: Ontario Wetland Evaluation System
- Wetland: Land Information Data Set
- Waterbody
- Watercourse



GOLIATH GOLD PROJECT
 DRYDEN, ONTARIO, CANADA

Wetland Drainage Basin Map

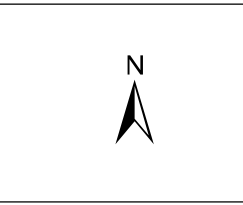
Wetland - WLD9 REV.00

SCALE: 30000

TREASURY METALS INC.

0 300 600 900

Meters



- LEGEND**
- Expressway / Highway
 - Local
 - Resource / Recreation
 - Elevation Contour
 - Wetland Boundary: Ontario Wetland Evaluation System
 - Drainage Basin
 - Wetland: Land Information Data Set
 - Waterbody
 - Watercourse



WETLAND EVALUATION DATA AND SCORING RECORD

- i) Wetland Name: WLD10
- ii) MNR Administrative Region: Northwest
MNR District: Dryden
MNR Area Office: Dryden
- iii) Conservation Authority Jurisdiction: _____
- iv) County of Regional Municipality: _____
- v) Township/Geographic Township and/or Local Municipality: Dryden
- vi) Lots and Concessions: _____
- vii) Ecodistrict/Ecoregion: Ecodistrict 4S (Wabigoon Lake)
- viii) Map and Air Photo References:
- a) Latitude: _____ Longitude: _____
- b) UTM grid reference:
Zone: 15 Block: _____ E: _____ N: _____
- c) National Topographic Series:
Map name(s): _____

Map number(s): _____

Edition: _____
Scale: _____
- d) Aerial photographs:
Date(s) photo taken: _____ Scale: _____
Flight & plate numbers: _____

- e) Ontario Base Map numbers & scale: _____

Vegetation Form	FA
h	
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dh	
dc	
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u	

1.0 BIOLOGICAL COMPONENT

1.1 PRODUCTIVITY

1.1.1 Growing Degree-Days/Soils (max: 30 pts)

Refer to page 43 of manual for further explanation.

1. Determine the correct GDD value for your wetland (use Figure 5).
2. Circle the appropriate GDD value from the evaluation table below.
3. Determine the Fractional Area (FA) of the wetland for each soil type.
4. Multiply the fractional area of each soil type by the applicable score-factor in the evaluation table.
5. Sum the scores for each soil type to obtain the final score (maximum score is 30 points).

NOTE: *In wetland complexes the evaluator should aim at determining the fractional area occupied by the categories for the complex as a whole.*

Growing Degree-Days	Clay-Loam	Silt-Marl	Limestone	Sand	Humic-Mesic	Fibric	Granite
	<1600	12	11	9	7	7	6
1600-2000	15	13	11	9	8	7	5
2000-2400	18	15	13	11	9	8	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

Soil Type	FA of wetland in soil type	Enter appropriate score-factor from above table	
Clay/Loam	0.15	x 18	= 2.7
Silt/Marl:		x	=
Limestone:		x	=
Sand:	0.15	x 11	= 1.65
Humic/Mesic:	0.7	x 9	= 6.3
Fibric:		x	=
Granite:		x	=
Total			

GDD/Soils Score (maximum 30 points) 11

1.1.2 Wetland Type

(Fractional Areas = area of wetland type/total wetland area)

	Fractional Area		Score
Bog		x 3 =	
Fen	0.2	x 6 =	1.2
Swamp	.75	x 8 =	6.0
Marsh	.05	x 15 =	0.75
Total		=	7.95

Wetland Type Score (maximum 15 points) **8**

1.1.3 Site Type

(Fractional Area = area of site type/total wetland area)

	Fractional Area		Score
Isolated		x 1 =	
Palustrine (permanent or intermittent flow)		x 2 =	
Riverine		x 4 =	
Riverine (at rivermouth)		x 5 =	
Lacustrine (at rivermouth)	1	x 5 =	5
Lacustrine (with barrier beach)		x 3 =	
Lacustrine (exposed to lake)		x 2 =	
Total		=	

Site Type Score (maximum 5 points) **5**

1.2 BIODIVERSITY

1.2.1 Number of Wetland Types

(Check only one)

<input type="checkbox"/>	One	=	9 points
<input type="checkbox"/>	Two	=	13
<input checked="" type="checkbox"/>	Three	=	20
<input type="checkbox"/>	Four	=	30

Number of Wetland Types Score
(maximum 30 points) 20

1.2.2. Vegetation Communities

Use the data sheet provided in Appendix 4 to record and score vegetation communities (the completed form must be attached to this data record)

Scoring (circle only one option for each of the columns below):

Total # of communities with 1-3 forms	
1 =	1.5 pts
2 =	2.5
3 =	3.5
4 =	4.5
5 =	5
6 =	5.5
7 =	6
8 =	6.5
9 =	7
10 =	7.5
11 =	8
+ 0.5 for each additional community	
= 3.5	

Total # of communities with 4-5 forms	
1 =	2 pts
2 =	3.5
3 =	5
4 =	6.5
5 =	7.5
6 =	8.5
7 =	9.5
8 =	10.5
9 =	11.5
10 =	12.5
11 =	13
+ 0.5 for each additional community	
=	

Total # of communities with 6 or more forms	
1 =	3 pts
2 =	5
3 =	7
4 =	9
5 =	10.5
6 =	12
7 =	13.5
8 =	15
9 =	16.5
10 =	18
11 =	19
+ 1.0 for each additional community	
= 3	

Vegetation Communities Score
(maximum 45 points) 7

1.2.3 Diversity of Surrounding Habitat

Check all appropriate items. Only habitat within 1.5 km of the wetland boundary and at least 0.5 ha in size are to be scored.

<input type="checkbox"/>	recent burn (<5 yr)
<input checked="" type="checkbox"/>	abandoned agricultural land
<input checked="" type="checkbox"/>	utility corridor
<input type="checkbox"/>	deciduous forest
<input type="checkbox"/>	recent cutover or clearcut (<5 yr)
<input checked="" type="checkbox"/>	coniferous forest
<input checked="" type="checkbox"/>	mixed forest*
<input type="checkbox"/>	crops
<input type="checkbox"/>	abandoned pits and quarries
<input checked="" type="checkbox"/>	pasture
<input type="checkbox"/>	ravine
<input type="checkbox"/>	fencerows
<input checked="" type="checkbox"/>	open lake or deep river
<input checked="" type="checkbox"/>	creek floodplain
<input type="checkbox"/>	rock outcrop

* "Mixed forest" is defined as either 25% coniferous trees distributed singly or in clumps in deciduous forest, or 25% deciduous trees distributed singly or in clumps in coniferous forest. Note that Forest Resource Inventory (FRI) maps can be misleading since 25% conifer within a unit could be entirely concentrated around a lake.

Score 1 point for each feature checked, up to a maximum of 7 points.

Diversity of Surrounding Habitat Score
(maximum 7 points) 7

1.2.4 Proximity to Other Wetlands

Check highest appropriate category. (Note: if the wetland is lacustrine, score option #1 at 8 points).

✓		Points
<input checked="" type="checkbox"/>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or to open lake or river within 1.5 km	8
<input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
<input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or to open lake or river from 1.5 to 4 km away	5
<input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
<input type="checkbox"/>	Within 0.75 km of other wetlands (different dominant wetland type) or open lake or river, but not hydrologically connected by surface water	5
<input type="checkbox"/>	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
<input type="checkbox"/>	No wetland within 1 km	0

Name and distance (from wetland) of wetlands/waterbodies scored above:
Wabigoon Lake, WLD6

Proximity to other Wetlands Score
(maximum 8 points) 8

1.2.5 Interspersion

Number of Intersections = 58

✓	Number of Intersections <i>(Check one only)</i>	Points
<input type="checkbox"/>	26 or less	= 3
<input type="checkbox"/>	27 to 40	= 6
<input checked="" type="checkbox"/>	41 to 60	= 9
<input type="checkbox"/>	61 to 80	= 12
<input type="checkbox"/>	81 to 100	= 15
<input type="checkbox"/>	101 to 125	= 18
<input type="checkbox"/>	126 to 150	= 21
<input type="checkbox"/>	151 to 175	= 24
<input type="checkbox"/>	176 to 200	= 27
<input type="checkbox"/>	>200	= 30

Interspersion Score (*maximum 30 points*) 9

1.2.6 Open Water Types

NOTE: *this attribute is only to be scored for permanently flooded open water within the wetland (adjacent lakes do not count). Check one option only.*

	Open Water Type	Characteristic	Points
<input checked="" type="checkbox"/>	Type 1	Open water occupies < 5 % of wetland area	= 8
<input type="checkbox"/>	Type 2	Open water occupies 5-25% of wetland (occurring in central area)	= 8
<input type="checkbox"/>	Type 3	Open water occupies 5-25% (occurring in various-sized ponds, dense patches of vegetation or vegetation in diffuse stands)	= 14
<input type="checkbox"/>	Type 4	Open water occupies 26-75% of wetland (occurring in a central area)	= 20
<input type="checkbox"/>	Type 5	Open water occupies 26-75% of wetlands (small ponds and embayments are common)	= 30
<input type="checkbox"/>	Type 6	Open water occupies 76%-95% of wetland (occurring in large central area; vegetation is peripheral)	= 8
<input type="checkbox"/>	Type 7	Open water occupies 76-95% of wetland (vegetation in patches or diffuse open stands)	= 14
<input type="checkbox"/>	Type 8	Open water occupies more than 95% of wetland area	= 3
<input type="checkbox"/>	No open water		= 0

Open Water Type Score (*maximum 30 points*) 8

1.3 SIZE

(BIOLOGICAL COMPONENT)

Total Size of Wetland = 23.85 ha

Sum of scores from Biodiversity Subcomponent

- 1.2.1
- + 1.2.2
- + 1.2.3
- + 1.2.4
- + 1.2.5
- + 1.2.6

Circle the appropriate score from the table below.

		Total Score for Biodiversity Subcomponent									
		<37	37-47	48-60	61-72	73-84	85-96	97-108	109-120	121-132	>132
Wetland size (ha)	<20 ha	1	5	7	8	9	17	25	34	43	50
	20-40	5	7	8	9	10	19	28	37	46	50
	41-60	6	8	9	10	11	21	31	40	49	50
	61-80	7	9	10	11	13	23	34	43	50	50
	81-100	8	10	11	13	15	25	37	46	50	50
	101-120	9	11	13	15	18	28	40	49	50	50
	121-140	10	13	15	17	21	31	43	50	50	50
	141-160	11	15	17	19	23	34	46	50	50	50
	161-180	13	17	19	21	25	37	49	50	50	50
	181-200	15	19	21	23	28	40	50	50	50	50
	201-400	17	21	23	25	31	43	50	50	50	50
	401-600	19	23	25	28	34	46	50	50	50	50
	601-800	21	25	28	31	37	49	50	50	50	50
	801-1000	23	28	31	34	40	50	50	50	50	50
	1001-1200	25	31	34	37	43	50	50	50	50	50
	1201-1400	28	34	37	40	46	50	50	50	50	50
	1401-1600	31	37	40	43	49	50	50	50	50	50
1601-1800	34	40	43	46	50	50	50	50	50	50	
1801-2000	37	43	47	49	50	50	50	50	50	50	
>2000	40	46	50	50	50	50	50	50	50	50	

Size Score (Biological Component)
(maximum 50 points) 8

2.0 SOCIAL COMPONENT

2.1 ECONOMICALLY VALUABLE PRODUCTS

2.1.1 Wood Products

Check the option that best reflects the total area (ha) of forested wetland (i.e., areas where the dominant vegetation form is h or c). Note that this is the area of all the forested vegetation communities, not total wetland size. Do not include area where harvest is not permitted. Check only one option.

Area of wetland used for scoring 2.1.1: 6 ha

<input type="checkbox"/>	< 5 ha	= 0 pts
<input checked="" type="checkbox"/>	5 - 25 ha	= 4
<input type="checkbox"/>	26 - 50 ha	= 6
<input type="checkbox"/>	51 - 100 ha	= 8
<input type="checkbox"/>	101 - 200 ha	= 11
<input type="checkbox"/>	> 200 ha	= 14

Source of information:
photo interpretation

Wood Products Score (maximum 14 points) 4

2.1.2 Lowbush Cranberry

Check only one.

<input type="checkbox"/>	Present	= 2 pts
<input checked="" type="checkbox"/>	Absent	= 0
<input type="checkbox"/>	Harvest not permitted	= 0

Source of information:
not found during field surveys

Lowbush Cranberry Score (maximum 2 points) 0

2.1.3 Wild Rice

Check only one.

<input type="checkbox"/>	Present (min. size 0.5 ha)	= 10 pts
<input checked="" type="checkbox"/>	Absent	= 0
<input type="checkbox"/>	Harvest not permitted	= 0

Source of information:
not found during field surveys and no overlap with Ontario Wild Rice spatial data layer

Wild Rice Score (maximum 10 points) 0

2.1.4 Commercial Baitfish

Check only one.

<input checked="" type="checkbox"/>	Present	=	12 pts
<input type="checkbox"/>	Absent	=	0
<input type="checkbox"/>	Fishing not permitted	=	0

Source of information:
Wetland attached to lake with some open water,
therefore minnows surely present

Commercial Baitfish Score (maximum 12 points) 12

2.1.5 Furbearers

Only species recognized as furbearers under the Fish & Wildlife Conservation Act may be scored. Score 3 points for each furbearer species listed, up to a maximum of 12 points. Score 0 points if trapping is prohibited.

	Name of furbearer	Source of information
1.		
2.		
3.		
4.		
5.		
6.		

Furbearer Score (maximum 12 points) 0

2.2 RECREATIONAL ACTIVITIES

Sources of information and reasons for scoring a wetland under high or moderate use below, must be included below.

Circle one score for each of the activities listed. Score is cumulative – add score for hunting, nature enjoyment and fishing together for final score.

		Type of Wetland-Associated Use		
		Hunting	Nature Enjoyment/ Ecosystem Study	Fishing
Intensity of Use	High	40 points	40 points	40 points
	Moderate	20	20	20
	Low	8	8	8
	Not Possible/ No evidence	0	0	0

Sources of information (include evidence/criteria forming basis for score and any relevant reference used to obtain that information):

- e.g., Hunting scored at 20 points: 5 hunting blinds observed; hunters using area frequently monitored for compliance (source: D. Black, MNR Conservation Officer)

Hunting: No known presence of cabins, trails, blinds, etc. No hunting assumed because of proximity to the road. Score = 0

Nature: No trails or interpretive signs present, but some sporadic use assumed. Score = 8

Fishing: Some recreational fishing assumed because it is immediately adjacent to a highly used recreational fishery in Wabigoon Lake. Score = 8

Recreational Activities Score
(maximum 80 points) 16

2.3 LANDSCAPE AESTHETICS

2.3.1 Distinctness

Check only one.

<input checked="" type="checkbox"/>	Clearly Distinct	= 3 pts
<input type="checkbox"/>	Indistinct	= 0

Landscape Distinctness Score
(maximum 3 points) 3

2.3.2 Absence of Human Disturbance

Check only one.

<input type="checkbox"/>	Human disturbances absent or nearly so	= 7 pts
<input checked="" type="checkbox"/>	One or several localized disturbances	= 4
<input type="checkbox"/>	Moderate disturbance; localized water pollution	= 2
<input type="checkbox"/>	Wetland intact but impairment of ecosystem quality intense in some areas	= 1
<input type="checkbox"/>	Extreme ecological degradation, or water pollution severe and widespread	= 0

Details regarding type, extent and location of disturbance scored:

Creeks draining into this wetland are impacted just upstream by a road and a utility corridor.

Source of information:

Google Earth imagery, field visits

Absence of Human Disturbance Score
(maximum 7 points) 4

2.4 EDUCATION AND PUBLIC AWARENESS

2.4.1 Educational Uses

Check highest appropriate category.

<input type="checkbox"/>	Frequent	= 20 pts
<input type="checkbox"/>	Infrequent	= 12
<input type="checkbox"/>	No visits	= 0

Details regarding the type and frequency of education uses scored above:

Source of information:

Educational Uses Score (maximum 20 points) 0

2.4.2 Facilities and Programs

Check all appropriate options, score highest category checked.

<input type="checkbox"/>	Staffed interpretation centre with shelters, trails, literature	= 8 pts
<input type="checkbox"/>	No interpretation centre or staff, but a system of self-guiding trails and observation points or brochures available	= 4
<input type="checkbox"/>	Facilities such as maintained paths (e.g., woodchips), boardwalks, boat launches or observation towers, but no brochures or other interpretation	= 2
<input type="checkbox"/>	No facilities or programs	= 0

Additional Notes/Comments:

Source of information:

Facilities and Programs Score
(maximum 8 points) 0

2.4.3 Research and Studies

Check all that apply; score highest category checked.

<input type="checkbox"/>	Long term research has been done	= 12 pts
<input type="checkbox"/>	Research papers published in refereed scientific journal or as a thesis	= 10
<input checked="" type="checkbox"/>	One or more (non-research) reports have been written on some aspect of the wetland's flora, fauna, hydrology, etc.	= 5
<input type="checkbox"/>	No research or reports	= 0

List of reports, publications, research studies etc scored above:

Wetland Baseline Studies conducted in 2013 and 2016 in support of Goliath Gold Mine (Treasury Metals) Environmental Assessment

Research and Studies Score
(maximum 12 points) 5

2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT

Name of Settlement: Wabigoon Lake Ojibway Nation

Distance of wetland from settlement: <4 km from Wabigoon

Population of settlement: <2500 (Source: Google Earth Imagery)

Circle only the highest score applicable

Distance of wetland to settlement	population >10,000	population 2,500-10,000	population <2,500 or cottage community
	within or adjoining settlement	40 points	26 points
0.5 to 10 km from settlement	26	16	10
10 to 60 km from settlement	12	8	4
60-100 km from nearest settlement	5	2	0
>100 km from nearest settlement	0	0	0

Proximity to Human Settlement Score
(maximum 40 points) 10

2.6 OWNERSHIP

FA of wetland on land held by or held under a legal contract by a conservation body (as defined by the <i>Conservation Land Act</i>) for wetland protection	_____ x 10 = _____
FA of wetland occurring in provincially or nationally protected areas (e.g., parks and conservation reserves)	_____ x 10 = _____
FA of wetland area in Crown/public ownership, not as above	<u>1.0</u> x 8 = <u>8</u>
FA of wetland area in private ownership, not as above	_____ x 4 = _____

Source of information:

Ownership Score (maximum 10 points) 8

2.7 SIZE (SOCIAL COMPONENT)

Total Size of Wetland = 23.85 ha Sum of scores from Subcomponents 2.1, 2.2, and 2.5 = 42

Circle the appropriate score from the table below.

Total for Size Dependent Social Features										
	<31	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
<5	1	2	4	8	12	13	14	14	15	16
5-8	2	2	5	9	13	14	15	15	16	16
9-12	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	18	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	19	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	20	20

Total Size Score (Social Component) 5

2.8 ABORIGINAL VALUES AND CULTURAL HERITAGE

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

Full documentation of sources must be attached to the data record.

2.8.1 Aboriginal Values

<input type="checkbox"/>	Significant	= 30 pts
<input type="checkbox"/>	Not Significant	= 0
<input checked="" type="checkbox"/>	Unknown	= 0

Additional Comments/Notes:

2.8.2 Cultural Heritage

<input type="checkbox"/>	Significant	= 30 pts
<input type="checkbox"/>	Not Significant	= 0
<input checked="" type="checkbox"/>	Unknown	= 0

Additional Comments/Notes:

Aboriginal Values/Cultural Heritage Score
(maximum 30 points) 0

3.0 HYDROLOGICAL COMPONENT

3.1 FLOOD ATTENUATION

Check one of the following five options.

If wetland is a *single contiguous coastal wetland*, ⇒ score 0 points for this section.

If the wetland is a *single contiguous lacustrine wetland* where the ratio of wetland area to lake area is less than 0.1, ⇒ score 0 points for this section.

If all wetland units of the wetland complex are coastal wetland units, or if all wetland units are all lacustrine and the ratio of the wetland area (total area of all wetland units) to the lake areas is less than 0.1 ⇒ score 0 points for this section.

If wetland or wetland complex is entirely isolated in site type, ⇒ score 100 points automatically.

Wetland not as above – proceed through steps A through O below.

- (A) Total wetland area = _____ ha
(B) Size of wetland's catchment = _____ ha
(C) Size of other detention areas in catchment = _____ ha
(D) Size of 'isolated' portions of wetland = _____ ha (FA = _____)
(E) Size of coastal units of wetland complex = _____ ha (FA = _____)
(F) Size of small lacustrine units of a wetland complex (when wetland area : lake area < 0.1)⁵ = _____ ha (FA = _____)

Wetland Surface Form (select the form which best describes the non-coastal units of the wetland):

- flooded with little or no aquatic vegetation = 0
 flooded but with submergent, emergent, or floating vegetation = 0.2
 flat (lawn) vegetation (typical of fens) = 0.5
 hummock-depression microtopography = 0.7
 patterned (e.g. string bog, ribbed fen) = 1.0

- (G) Wetland Surface Form Factor = _____ (maximum 1.0)

Points for Isolated Wetland Unit(s) (if not applicable, enter '0'):

- (H) (FA of D) x 100 pts = _____ pts

Points for Coastal Wetland Unit(s) (if not applicable, enter '0'):

- (I) (FA of E) x 100 pts = _____ pts

Points for Small Lacustrine Wetland Unit(s) (if not applicable enter '0'):

- (J) (FA of F) x 100 pts = _____ pts

- (K) Size of wetland minus isolated, coastal and small lacustrine portions = {A – D – E – F} = _____ ha

- (L) Number of points available to score 'rest' of wetland = {100 – H – I – J}

- (M) Total area of upstream detention areas* = {A + C} = _____ ha

- (N) Upstream Detention Factor = {(K/M) x 2} = _____ (maximum 1.0)

- (O) Attenuation Factor = {(K/B) x 10} = _____ (maximum 1.0)

- (P) Surface Form Factor = _____ (maximum 1.0)

Flood Attenuation Final Score = {(N + O + G] / 3) x L] + H} = _____

Flood Attenuation Score (maximum 100 points) 0

3.2 GROUNDWATER RECHARGE

3.2.1 Site Type

Wetland > 50% lacustrine (by area) or located on the St. Mary's River	=	0 pts
Wetland not as above. Calculate final score as follows:		
■ FA of isolated or palustrine wetland	=	x 20 =
■ FA of riverine wetland	=	x 5 =
■ FA of lacustrine wetland (when wetland is <50% lacustrine)" =100		x 0 = 0

Groundwater Recharge/Wetland Site Type Score
(maximum 20 points) 0

3.2.2 Soil Recharge Potential

Circle only one choice that **best** describes the soils in the area surrounding the wetland being evaluated (the soils within the wetland are not scored here).

Dominant Wetland Type	Group A, B, C (sands, gravels, loams)	Group D (clays, substrates in high water tables, shallow substrates over impervious materials such as bedrock)
	Lacustrine or on St. Mary's River	0
Isolated	10	5
Palustrine	7	4
Riverine (not on a major river)	5	2

Groundwater Recharge/Wetland Soil Recharge Potential Score (maximum 10 points) 0

3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

3.3.1 Watershed Improvement Factor

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

			Improvement Factor
FA of isolated wetland	=	x 0.5 =	
FA of riverine wetland	=	x 1.0 =	
FA of palustrine wetland with no inflow	=	x 0.7 =	
FA of palustrine wetland with inflows	=	x 1.0 =	
FA of lacustrine on lake shoreline	=	x 0.2 =	
FA of lacustrine at lake inflow or outflow	= 1	x 1.0 =	1

Watershed Improvement Score (IF x 30)
 (maximum = 30) 30

3.3.2 Adjacent and Watershed Land Use

EVALUATION:

Step 1. Determination of Maximum Initial Score

- Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)
- All other wetlands (Go through steps 2, 3, 4, and 5b)

Step 2. Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in an extensive manner.

- | <i>Choose one</i> | Score |
|---|-------|
| <input type="checkbox"/> > 50% of catchment basin | 20 |
| <input checked="" type="checkbox"/> 20-50% of catchment basin | 14 |
| <input type="checkbox"/> < 20% of catchment basin | 4 |

Score for BLU 14

Step 3. Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

	Score
<input checked="" type="checkbox"/> Major corridor ¹	15
<input type="checkbox"/> Secondary corridor	11
<input type="checkbox"/> Tertiary corridor	6
<input type="checkbox"/> Temporary or abandoned	3
<input type="checkbox"/> None	0

Score for LUU 15

Step 4. Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits use for local road construction), etc. Score as 'present' only if a point source land use is located less than 1 km upstream from the wetland.

	Score
<input type="checkbox"/> Present	15
<input checked="" type="checkbox"/> Not present	0

Score for PS 0

Step 5. Calculation of total score for Adjacent and Watershed Land Use

	Score
<input type="checkbox"/> a) Wetland on the Great Lakes or St. Mary's River	0
<input checked="" type="checkbox"/> b) All other wetlands, calculate as follows:	

Final Score BLU + LUU + PS 29

3.3.3 Vegetation Form

Choose the category that best describes the vegetation of the wetland.

	Score
<input checked="" type="checkbox"/> Trees, shrubs or herbs (h, c, ts, ls, gc)	8 points
<input type="checkbox"/> Emergents, submergents (ne, re, be, f, ff, su)	10
<input type="checkbox"/> Little or no vegetation (u)	0

Dominant Vegetation Form Score
(maximum 10 points) 8

1. Major, secondary and tertiary roads are those that are indicated as such on the provincial highways map. Major hydro corridors are trunk lines coming directly from a generating station. Major pipelines are trans-continental lines. Secondary corridors are regional distribution lines (i.e. multi-cable hydro corridors not emanating directly from a generating station or regional gas distribution lines). Tertiary corridors are single hydro lines or local gas distribution lines (i.e. to domestic users).

3.4 CARBON SINK

Check only one of the following

<input type="checkbox"/>	Bog or fen with more than 50% coverage by organic soil	=	15 pts
<input type="checkbox"/>	Wetland with between 10 to 50% coverage by organic soil (i.e., mainly mineral or undesignated soils, any wetland type)	=	6
<input checked="" type="checkbox"/>	Marshes and swamps with more than 50% coverage organic soil	=	9
<input type="checkbox"/>	Wetland with less than 10% soils organic	=	0

Source of information:
Google Earth image interpretation and field data

Carbon Sink Score (maximum 15 points) 9

3.5 SHORELINE EROSION CONTROL

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.

Step 1:

<input type="checkbox"/>	Wetland entirely isolated or palustrine	=	0 pts
<input checked="" type="checkbox"/>	Any part of the wetland is riverine or lacustrine	=	Go to step 2

Step 2: Choose the one characteristic that best describes the shoreline vegetation (see page 112 for description of "shoreline".)

<input type="checkbox"/>	Trees and shrubs	=	15 pts
<input checked="" type="checkbox"/>	Emergent vegetation	=	8
<input type="checkbox"/>	Submergent vegetation	=	6
<input type="checkbox"/>	Other shoreline vegetation	=	3
<input type="checkbox"/>	No vegetation	=	0

Shoreline Erosion Control Score
(maximum 15 points) 8

3.6 GROUNDWATER DISCHARGE

Circle the characteristics that best describe the wetland being evaluated and then sum the scores. If the sum exceeds 30 points, assign the maximum score of 30). NOTE: for wetland type, wetland type scored does not have to the dominant type in the wetland.

Catchment Interaction/Potential for Discharge				
	None to Little	Some	High	
Wetland Characteristics	Wetland type Presence/absence	Bog = 0	Swamp/Marsh = 2	Fen = 5
	Basin Topography	Flat/rolling = 0	Hilly = 2	Major Relief Break = 5
	Wetland area: Upslope catchment area	Large (>50%) = 0	Moderate (5-50%) = 2	Small (<5%) = 5
	Lagg development	None found = 0	Minor = 2	Extensive = 5
	Seeps	None = 0	≤ 3 seeps = 2	> 3 seeps = 5
	Iron precipitates	None = 0	≤ 3 sites = 2	> 3 sites = 5
	Surface marl deposits	None = 0	≤ 3 sites = 2	> 3 sites = 5
	Wetland pH	Low < 4.2 = 0	Moderate 4.2-5.7 = 5	High >5.7 = 10
	Catchment soil coverage	Patchy = 0	Thin (<20 cm) = 2	Thick = 5
	Catchment soil permeability	Low = 0	Moderate = 2	High = 5

Additional Comments/Notes:

Groundwater Discharge Score (maximum 30 points) 20
--

4.0 SPECIAL FEATURES

COMPONENT

4.1 RARITY

4.1.1 Wetlands

Wetland type (check one or more)

<input type="checkbox"/>	Bog
<input checked="" type="checkbox"/>	Fen
<input checked="" type="checkbox"/>	Swamp
<input checked="" type="checkbox"/>	Marsh

Ecoregion/Ecodistrict		Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	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
5E-1	Thessalon	10	0	30	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tomiko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E-13	Western Sault Ste. Marie – Lake Superior Coast	20	0	10	30
5-S	Lake of the Woods	10	10	20	10

Rarity of Wetland Type Score
(maximum 70 points) 50

4.1.2 Species

4.1.2.1 Reproductive Habitat for an Endangered or Threatened Species

Under the “Activity” column, when scoring animal species, record what the animal was doing when observed (e.g., nesting, courtship, singing, etc).

Common Name	Scientific Name	Activity	Date Observed	Info Source

For each species score 250 points. (Score is cumulative, no maximum score)

Additional Notes/Comments:

Reproductive Habitat for Endangered or Threatened Species (no maximum) 0

4.1.2.2 Traditional Migration or Feeding Habitat for an Endangered or Threatened Species

Under the “Activity” column, when scoring animal species, record what the animal was doing when observed (e.g., nesting, courtship, singing, feeding, resting etc). Dates that species has been recorded using the wetland must be included in the table below.

Common Name	Scientific Name	Activity	Dates Observed	Info Source

For one species score 150 points; for each additional species score 75 points. (Score is cumulative)

Additional Notes/Comments:

Traditional Habitat for Endangered or Threatened Species (no maximum) 0

4.1.2.3 Provincially Significant Animal Species

Common Name	Scientific Name	Activity	Dates Observed	Info Source

Additional Notes/Comments:

One species = 50 pts	9 species = 140 pts	17 species = 160 pts
2 species = 80	10 species = 143	18 species = 162
3 species = 95	11 species = 146	19 species = 164
4 species = 105	12 species = 149	20 species = 166
5 species = 115	13 species = 152	21 species = 168
6 species = 125	14 species = 154	22 species = 170
7 species = 130	15 species = 156	23 species = 172
8 species = 135	16 species = 158	24 species = 174
		25 species = 176

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Animal Species
(no maximum) 0

4.1.2.4 Provincially Significant Plant Species

Common Name	Scientific Name	Activity	Dates Observed	Info Source

Additional Notes/Comments:

One species = 50 pts	9 species = 140 pts	17 species = 160 pts
2 species = 80	10 species = 143	18 species = 162
3 species = 95	11 species = 146	19 species = 164
4 species = 105	12 species = 149	20 species = 166
5 species = 115	13 species = 152	21 species = 168
6 species = 125	14 species = 154	22 species = 170
7 species = 130	15 species = 156	23 species = 172
8 species = 135	16 species = 158	24 species = 174
		25 species = 176

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species
(no maximum) 0

4.1.2.5 Regionally Significant Species

Common Name	Scientific Name	Activity	Dates Observed	Info Source

** Score only if there is an approved list.

Scoring:

One species= 20 pts	4 species = 45 pts	7 species = 58 pts
2 species = 30	5 species = 50	8 species = 61
3 species = 40	6 species = 55	9 species = 64
		10 species = 67

For each significant species over 10 in wetland, add 1 point.

Regionally Significant Species Score (no maximum score) 0 _____
--

4.1.2.6 Locally Significant Species (Ecodistrict)

Common Name	Scientific Name	Activity	Dates Observed	Info Source

Scoring:

One species= 10 pts	4 species = 31 pts	7 species = 43 pts
2 species = 17	5 species = 38	8 species = 45
3 species = 24	6 species = 41	9 species = 47
		10 species = 49

For each significant species over 10 in wetland, add 1 point.

Locally Significant Species Score (no maximum score) 0 _____

4.1.2.7 Species of Special Status

Black Duck

Suitable breeding habitat present and within assessment range (Figure 25)

Assessment Category	Check one	Points
20 - 40 Indicated Pairs/100 km sq	<input type="checkbox"/>	= 20
10 - 20 Indicated Pairs/100 km sq	<input type="checkbox"/>	= 15
5 - 10 Indicated Pairs/100 km sq	<input checked="" type="checkbox"/>	= 10
1 - 5 Indicated Pairs/100 km sq	<input type="checkbox"/>	= 5
Habitat not suitable	<input type="checkbox"/>	= 0
Out of assessment range	<input type="checkbox"/>	= 0

Additional Notes/Comments:

Black Duck Score
(maximum 20 points) 10

4.2 SIGNIFICANT FEATURES AND HABITATS

4.2.1 Colonial Waterbirds

Record all available information. Score the highest applicable category. Include additional information as possible (e.g., nest locations, etc).

Activity	Species	Info Source	Points
Currently nesting			= 50
Known to have nested within the past 5 years			= 25
Active feeding area (great blue heron excluded)			= 15
None known			= 0

Additional Notes/Comments:

Colonial Waterbird Nesting Score
(maximum 50 points) 0

4.2.2 Winter Cover for Wildlife

Score highest appropriate category. Include rationale/sources of information.

<input type="text"/>	Provincially significant	= 100 pts
<input type="text"/>	Significant in Ecoregion	= 50
<input type="text"/>	Significant in Ecodistrict	= 25
<input type="text"/>	Locally significant	= 10
<input type="text"/>	Little or poor winter cover	= 0

Species/habitat/vegetation community scored (e.g., winter deer cover in hemlock swamp, S3 and S4b):

Source of information:

Winter Cover for Wildlife Score
(maximum 100 points) 0

4.2.3 Waterfowl Staging and/or Moulting Areas

Check highest level of significance for both staging and moulting; add scores for staging and for moulting together for final score. However, maximum score for evaluation under this section is 150 points.

	Staging	Moulting
Nationally/internationally significant	<input type="text"/> = 150 pts	<input type="text"/> = 150 pts
Provincially significant	<input type="text"/> = 100	<input type="text"/> = 100
Significant in the Ecoregion	<input type="text"/> = 50	<input type="text"/> = 50
Significant in the Ecodistrict	<input type="text"/> = 25	<input type="text"/> = 25
Locally Significant/ Known to occur	<input type="text"/> = 10	<input type="text"/> = 10
Not possible/Unknown	<input checked="" type="checkbox"/> = 0	<input checked="" type="checkbox"/> = 0

Species/habitat/vegetation community scored (e.g., approx 20 mallards in W3):

Source of information:

Waterfowl Staging/Moulting Score
(maximum 150 points) 0

4.2.4 Waterfowl Breeding

Check highest level of significance.

<input type="checkbox"/>	Nationally/internationally significant	= 150 pts
<input type="checkbox"/>	Provincially significant	= 100
<input type="checkbox"/>	Significant in Ecoregion	= 50
<input type="checkbox"/>	Significant in Ecodistrict	= 25
<input checked="" type="checkbox"/>	Locally significant/Known to occur	= 10
<input type="checkbox"/>	Habitat not suitable	= 0

Species/habitat/vegetation community scored (e.g., mallard in W3):

Source of information:

Waterfowl Breeding Score
(maximum 150 points) 10

4.2.5 Migratory Passerine, Shorebird or Raptor Stopover Area

Check highest level of significance.

<input type="checkbox"/>	Nationally/Internationally significant	= 150 pts
<input type="checkbox"/>	Provincially significant	= 100
<input type="checkbox"/>	Significant in Ecoregion	= 50
<input type="checkbox"/>	Significant in Ecodistrict	= 25
<input type="checkbox"/>	Locally significant/Known to occur	= 10
<input checked="" type="checkbox"/>	Not possible/Unknown	= 0

Species/habitat/vegetation community scored:

Source of information:

Passerine, Shorebird or Raptor Stopover Score
(maximum 150 points) 0

4.2.6 Ungulate habitat

EVALUATION:

Score (1) + (2) + one of (3) to (6)

	Score
<input type="checkbox"/> 1. Ungulate summer cover	= 15 points
<input type="checkbox"/> 2. Mineral licks	= 50
<input type="checkbox"/> 3. Moose aquatic feeding area Class 1	= 0
<input type="checkbox"/> 4. Moose aquatic feeding area Class 2	= 10
<input checked="" type="checkbox"/> 5. Moose aquatic feeding area Class 3	= 20
<input type="checkbox"/> 6. Moose aquatic feeding area Class 4	= 35

(Score is cumulative for a maximum possible score of 100)

Ungulate Habitat Score
(maximum 100 points) 20

4.2.7 Fish Habitat

4.2.7.1 Spawning and Nursery Habitat

Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5 – 4.9	0.2
5.0 – 9.9	0.4
10.0 – 14.9	0.6
15.0 – 19.9	0.8
20.0 +	1.0

Step 1:

Fish habitat is not present within the wetland

Go to Step 7, Score 0 points

Fish habitat is present within the wetland

Go to Step 2

Step 2: Choose only one option

Significance of the spawning and nursery habitat within the wetland is known

Go to Step 3

Significance of the spawning and nursery habitat within the wetland is not known

Go through Steps 4, 5 and 6

Step 3: Select the highest appropriate category below, attach documentation:

Significant in Ecoregion

Go to Step 7, Score 100 points

Significant in Ecodistrict

Go to Step 7, Score 50 points

Locally Significant Habitat (5.0+ ha)

Go to Step 7, Score 25 points

Locally Significant Habitat (<5.0 ha)

Go to Step 7, Score 15 points

Step 4: Low Marsh = the 'permanent' marsh area, from the existing water line out to the outer boundary of the wetland.

Low marsh not present

Go to Step 5

Low marsh present

Continue through Step 4, scoring as noted below

Scoring of Low Marsh:

1. Check the appropriate **Vegetation Group** (see Appendix 7) for each Low Marsh community. (Based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community.)
2. Sum the areas (ha) of the vegetation communities assigned to each **Vegetation Group**.
3. Use these areas to assign an Area Factor (from Table 8) for each checked **Vegetation Group**.
4. Multiply the **Area Factor** by the **Multiplication Factor** for each row to calculate **Score**.
5. Sum all numbers in Score column to get **Total Score for Low Marsh**.

Scoring for Presence of Key Vegetation Groups – Low Marsh						
Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
1	Tallgrass	<input type="checkbox"/>			6	
2	Shortgrass-Sedge	<input type="checkbox"/>			11	
3	Cattail-Bulrush-Burreed	<input type="checkbox"/>			5	
4	Arrowhead-Pickerelweed	<input type="checkbox"/>			5	
5	Duckweed	<input type="checkbox"/>			2	
6	Smartweed-Waterwillow	<input type="checkbox"/>			6	
7	Waterlily-Lotus	<input type="checkbox"/>			11	
8	Waterweed-Watercress	<input type="checkbox"/>			9	
9	Ribbongrass	<input type="checkbox"/>			10	
10	Coontail-Naiad-Watermilfoil	<input type="checkbox"/>			13	
11	Narrowleaf Pondweed	<input type="checkbox"/>			5	
12	Broadleaf Pondweed	<input type="checkbox"/>			8	
Total Score for Low Marsh (maximum 75 points)						

Continue to Step 5

Step 5: High Marsh = the 'seasonal' marsh area, from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as a wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.



High marsh not present

Go to Step 6



High marsh present

Continue through Step 5, scoring as noted below

Scoring of High Marsh:

1. Check the appropriate **Vegetation Group** (see Appendix 7) for each High Marsh community. (Based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community.)
2. Sum the areas (ha) of the vegetation communities assigned to each **Vegetation Group**.
3. Use these areas to assign an **Area Factor** (from Table 8) for each checked **Vegetation Group**.
4. Multiply the Area Factor by the **Multiplication Factor** for each row to calculate **Score**.
5. Sum all numbers in Score column to get **Total Score for High Marsh**.

Scoring for Presence of Key Vegetation Groups – High Marsh

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
1	Tallgrass	<input type="checkbox"/>			6	
2	Shortgrass-Sedge	<input type="checkbox"/>			11	
3	Cattail-Bulrush-Burreed	<input checked="" type="checkbox"/>	1.2	0.2	5	1
4	Arrowhead-Pickerelweed	<input type="checkbox"/>			5	
Total Score for High Marsh (maximum 25 points)						1

Continue to Step 6

Step 6:

Swamp: Swamp communities containing fish habitat, either seasonally or permanently. Determine the total area of seasonally flooded swamps and permanently flooded swamps containing fish habitat.



Swamp containing fish habitat not present

Go to Step 7



Swamp containing fish habitat present

Continue through Step 6, scoring as follows

Scoring of Swamp:

1. Determine the total area (ha) of seasonally flooded swamp communities within the wetland containing fish habitat and record below.
2. Determine the total area (ha) of permanently flooded swamp communities within the wetland containing fish habitat and record in below.
3. Use these areas to assign an **Area Factor** (from Table 8).
4. Multiply the **Area Factor** by the **Multiplication Factor** for each row to calculate Score.
5. Sum all numbers in Score column to get **Total Score for Swamp**.

Scoring Swamps for Fish Habitat (Seasonally Flooded; Permanently Flooded)					
Swamp Containing Fish Habitat	Present (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
Seasonally Flooded Swamp	X	18	0.8	10	8
Permanently Flooded Swamp				10	
Total Score for Swamp (maximum 20 points)					8

Continue to Step 7

Step 7: CALCULATION OF FINAL SCORE

NOTE: Scores for Steps 4, 5 and 6 are only recorded if Steps 1 and 3 have not been scored.

- A. Score from Step 1 (fish habitat not present) = _____
- B. Score from Step 3 (significance known) = _____
- C. Score from Step 4 (Low Marsh) = _____
- D. Score from Step 5 (High Marsh) = 1
- E. Score from Step 6 (Swamp) = 8

Calculation of Final Score for Spawning and Nursery Habitat = A or B or Sum of C, D, and E

Score for Spawning and Nursery Habitat
(maximum 100 points) 9

4.2.7.2 Migration and Staging Habitat

Step 1:

<input type="checkbox"/>	Staging or Migration Habitat is not present in the wetland	Go to Step 4, Score 0 points
<input type="checkbox"/>	Staging or Migration Habitat is present in the wetland, significance of the habitat is known	Go to Step 2
<input checked="" type="checkbox"/>	Staging or Migration Habitat is present in the wetland, significance of the habitat is not known	Go to Step 3

Step 2: Select the highest appropriate category below. Ensure that documentation is attached to the data record.

<input type="checkbox"/>	Significant in Ecoregion	Score 25 points in Step 4
<input type="checkbox"/>	Significant in Ecodistrict	Score 15 points in Step 4
<input type="checkbox"/>	Locally Significant	Score 10 points in Step 4
<input type="checkbox"/>	Fish staging and/or migration habitat present, but not as above	Score 5 points in Step 4

Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to be the dominant site type). Note name of river for ones within 0.75 km of rivermouth.

<input checked="" type="checkbox"/>	Wetland is riverine at rivermouth or lacustrine at rivermouth	Score 25 points in Step 4
<input type="checkbox"/>	Wetland is riverine, within 0.75 km of rivermouth	Score 15 points in Step 4
<input type="checkbox"/>	Wetland is lacustrine, within 0.75 km of rivermouth	Score 10 points in Step 4
<input type="checkbox"/>	Fish staging and/or migration habitat present, but not as above	Score 5 points in Step 4

Step 4: Enter a score from only one of the three above Steps.

<p>Score for Staging and Migration Habitat (maximum score 25 points) <u>25</u></p>
--

4.3 ECOSYSTEM AGE

(Fractional Area = Area of wetland type/total area of wetland)

	Fractional Area		Score
Bog	=	x 25 =	
Fen, treed to open on deep soils, floating mats or marl	= 0.2	x 20 =	4
Fen, on limestone rock	=	x 5 =	
Swamp	= .75	x 3 =	2.25
Marsh	= .05	x 0 =	0
	Total	=	6.25

Ecosystem Age Score (maximum 25 points) 6

4.4 GREAT LAKES COASTAL WETLANDS

Choose one only. Only coastal wetland units may be scored.

<input type="checkbox"/>	Wetland < 10 ha	=	10 pts
<input type="checkbox"/>	Wetland 10-50 ha	=	25
<input type="checkbox"/>	Wetland 51-100 ha	=	50
<input type="checkbox"/>	Wetland > 100 ha	=	75

If the wetland is a complex, identify which wetlands units or wetland communities are being scored as coastal:

Great Lakes Coastal Wetland Score
(maximum 75 points) 0

WETLAND EVALUATION DATA AND SCORING RECORD

- i) Wetland Name: WLD11
- ii) MNR Administrative Region: Northwest
MNR District: Dryden
MNR Area Office: Dryden
- iii) Conservation Authority Jurisdiction: _____
- iv) County of Regional Municipality: _____
- v) Township/Geographic Township and/or Local Municipality: Dryden
- vi) Lots and Concessions: _____
- vii) Ecodistrict/Ecoregion: Ecodistrict 4S (Wabigoon Lake)
- viii) Map and Air Photo References:
- a) Latitude: _____ Longitude: _____
- b) UTM grid reference:
Zone: 15 Block: _____ E: _____ N: _____
- c) National Topographic Series:
Map name(s): _____

Map number(s): _____

Edition: _____
Scale: _____
- d) Aerial photographs:
Date(s) photo taken: _____ Scale: _____
Flight & plate numbers: _____

- e) Ontario Base Map numbers & scale: _____

Vegetation Form	FA
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1.0 BIOLOGICAL COMPONENT

1.1 PRODUCTIVITY

1.1.1 Growing Degree-Days/Soils (max: 30 pts)

Refer to page 43 of manual for further explanation.

1. Determine the correct GDD value for your wetland (use Figure 5).
2. Circle the appropriate GDD value from the evaluation table below.
3. Determine the Fractional Area (FA) of the wetland for each soil type.
4. Multiply the fractional area of each soil type by the applicable score-factor in the evaluation table.
5. Sum the scores for each soil type to obtain the final score (maximum score is 30 points).

NOTE: *In wetland complexes the evaluator should aim at determining the fractional area occupied by the categories for the complex as a whole.*

Growing Degree-Days	Clay-Loam	Silt-Marl	Limestone	Sand	Humic-Mesic	Fibric	Granite
	<1600	12	11	9	7	7	6
1600-2000	15	13	11	9	8	7	5
2000-2400	18	15	13	11	9	8	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

Soil Type	FA of wetland in soil type	Enter appropriate score-factor from above table	
Clay/Loam		X	=
Silt/Marl:		X	=
Limestone:		X	=
Sand:		X	=
Humic/Mesic:	1.0	X 9	=
Fibric:		X	=
Granite:		X	=
Total			

GDD/Soils Score (maximum 30 points) 9

1.1.2 Wetland Type

(Fractional Areas = area of wetland type/total wetland area)

	Fractional Area		Score
Bog		x 3 =	
Fen		x 6 =	
Swamp	.75	x 8 =	6.0
Marsh	.25	x 15 =	3.75
Total		=	9.75

Wetland Type Score (maximum 15 points) 10

1.1.3 Site Type

(Fractional Area = area of site type/total wetland area)

	Fractional Area		Score
Isolated		x 1 =	
Palustrine (permanent or intermittent flow)		x 2 =	
Riverine		x 4 =	
Riverine (at rivermouth)		x 5 =	
Lacustrine (at rivermouth)	0.4	x 5 =	2
Lacustrine (with barrier beach)		x 3 =	
Lacustrine (exposed to lake)	0.6	x 2 =	1.2
Total		=	

Site Type Score (maximum 5 points) 3

1.2 BIODIVERSITY

1.2.1 Number of Wetland Types

(Check only one)

<input type="checkbox"/>	One	=	9 points
<input checked="" type="checkbox"/>	Two	=	13
<input type="checkbox"/>	Three	=	20
<input type="checkbox"/>	Four	=	30

Number of Wetland Types Score
(maximum 30 points) 13

1.2.2. Vegetation Communities

Use the data sheet provided in Appendix 4 to record and score vegetation communities (the completed form must be attached to this data record)

Scoring (circle only one option for each of the columns below):

Total # of communities with 1-3 forms	
1 =	1.5 pts
2 =	2.5
3 =	3.5
4 =	4.5
5 =	5
6 =	5.5
7 =	6
8 =	6.5
9 =	7
10 =	7.5
11 =	8
+ 0.5 for each additional community	
=	

Total # of communities with 4-5 forms	
1 =	2 pts
2 =	3.5
3 =	5
4 =	6.5
5 =	7.5
6 =	8.5
7 =	9.5
8 =	10.5
9 =	11.5
10 =	12.5
11 =	13
+ 0.5 for each additional community	
=	

Total # of communities with 6 or more forms	
1 =	3 pts
2 =	5
3 =	7
4 =	9
5 =	10.5
6 =	12
7 =	13.5
8 =	15
9 =	16.5
10 =	18
11 =	19
+ 1.0 for each additional community	
= 5	

Vegetation Communities Score
(maximum 45 points) 5

1.2.3 Diversity of Surrounding Habitat

Check all appropriate items. Only habitat within 1.5 km of the wetland boundary and at least 0.5 ha in size are to be scored.

<input type="checkbox"/>	recent burn (<5 yr)
<input checked="" type="checkbox"/>	abandoned agricultural land
<input checked="" type="checkbox"/>	utility corridor
<input checked="" type="checkbox"/>	deciduous forest
<input checked="" type="checkbox"/>	recent cutover or clearcut (<5 yr)
<input checked="" type="checkbox"/>	coniferous forest
<input checked="" type="checkbox"/>	mixed forest*
<input type="checkbox"/>	crops
<input type="checkbox"/>	abandoned pits and quarries
<input type="checkbox"/>	pasture
<input type="checkbox"/>	ravine
<input type="checkbox"/>	fencerows
<input checked="" type="checkbox"/>	open lake or deep river
<input checked="" type="checkbox"/>	creek floodplain
<input type="checkbox"/>	rock outcrop

* "Mixed forest" is defined as either 25% coniferous trees distributed singly or in clumps in deciduous forest, or 25% deciduous trees distributed singly or in clumps in coniferous forest. Note that Forest Resource Inventory (FRI) maps can be misleading since 25% conifer within a unit could be entirely concentrated around a lake.

Score 1 point for each feature checked, up to a maximum of 7 points.

Diversity of Surrounding Habitat Score
(maximum 7 points) 7

1.2.4 Proximity to Other Wetlands

Check highest appropriate category. (Note: if the wetland is lacustrine, score option #1 at 8 points).

✓		Points
<input checked="" type="checkbox"/>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or to open lake or river within 1.5 km	8
<input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
<input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or to open lake or river from 1.5 to 4 km away	5
<input type="checkbox"/>	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
<input type="checkbox"/>	Within 0.75 km of other wetlands (different dominant wetland type) or open lake or river, but not hydrologically connected by surface water	5
<input type="checkbox"/>	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
<input type="checkbox"/>	No wetland within 1 km	0

Name and distance (from wetland) of wetlands/waterbodies scored above:
Wabigoon Lake, WLD6

Proximity to other Wetlands Score
(maximum 8 points) 8

1.2.5 Interspersion

Number of Intersections = 58

✓	Number of Intersections <i>(Check one only)</i>	Points
<input type="checkbox"/>	26 or less	= 3
<input type="checkbox"/>	27 to 40	= 6
<input checked="" type="checkbox"/>	41 to 60	= 9
<input type="checkbox"/>	61 to 80	= 12
<input type="checkbox"/>	81 to 100	= 15
<input type="checkbox"/>	101 to 125	= 18
<input type="checkbox"/>	126 to 150	= 21
<input type="checkbox"/>	151 to 175	= 24
<input type="checkbox"/>	176 to 200	= 27
<input type="checkbox"/>	>200	= 30

Interspersion Score (*maximum 30 points*) 9

1.2.6 Open Water Types

NOTE: *this attribute is only to be scored for permanently flooded open water within the wetland (adjacent lakes do not count). Check one option only.*

	Open Water Type	Characteristic	Points
<input checked="" type="checkbox"/>	Type 1	Open water occupies < 5 % of wetland area	= 8
<input type="checkbox"/>	Type 2	Open water occupies 5-25% of wetland (occurring in central area)	= 8
<input type="checkbox"/>	Type 3	Open water occupies 5-25% (occurring in various-sized ponds, dense patches of vegetation or vegetation in diffuse stands)	= 14
<input type="checkbox"/>	Type 4	Open water occupies 26-75% of wetland (occurring in a central area)	= 20
<input type="checkbox"/>	Type 5	Open water occupies 26-75% of wetlands (small ponds and embayments are common)	= 30
<input type="checkbox"/>	Type 6	Open water occupies 76%-95% of wetland (occurring in large central area; vegetation is peripheral)	= 8
<input type="checkbox"/>	Type 7	Open water occupies 76-95% of wetland (vegetation in patches or diffuse open stands)	= 14
<input type="checkbox"/>	Type 8	Open water occupies more than 95% of wetland area	= 3
<input type="checkbox"/>	No open water		= 0

Open Water Type Score (*maximum 30 points*) 8

1.3 SIZE

(BIOLOGICAL COMPONENT)

Total Size of Wetland = 15.41 ha

Sum of scores from Biodiversity Subcomponent

- 1.2.1
- + 1.2.2
- + 1.2.3
- + 1.2.4
- + 1.2.5
- + 1.2.6

Circle the appropriate score from the table below.

		Total Score for Biodiversity Subcomponent									
		<37	37-47	48-60	61-72	73-84	85-96	97-108	109-120	121-132	>132
Wetland size (ha)	<20 ha	1	5	7	8	9	17	25	34	43	50
	20-40	5	7	8	9	10	19	28	37	46	50
	41-60	6	8	9	10	11	21	31	40	49	50
	61-80	7	9	10	11	13	23	34	43	50	50
	81-100	8	10	11	13	15	25	37	46	50	50
	101-120	9	11	13	15	18	28	40	49	50	50
	121-140	10	13	15	17	21	31	43	50	50	50
	141-160	11	15	17	19	23	34	46	50	50	50
	161-180	13	17	19	21	25	37	49	50	50	50
	181-200	15	19	21	23	28	40	50	50	50	50
	201-400	17	21	23	25	31	43	50	50	50	50
	401-600	19	23	25	28	34	46	50	50	50	50
	601-800	21	25	28	31	37	49	50	50	50	50
	801-1000	23	28	31	34	40	50	50	50	50	50
	1001-1200	25	31	34	37	43	50	50	50	50	50
	1201-1400	28	34	37	40	46	50	50	50	50	50
	1401-1600	31	37	40	43	49	50	50	50	50	50
1601-1800	34	40	43	46	50	50	50	50	50	50	
1801-2000	37	43	47	49	50	50	50	50	50	50	
>2000	40	46	50	50	50	50	50	50	50	50	

Size Score (Biological Component)
(maximum 50 points) 7

2.0 SOCIAL COMPONENT

2.1 ECONOMICALLY VALUABLE PRODUCTS

2.1.1 Wood Products

Check the option that best reflects the total area (ha) of forested wetland (i.e., areas where the dominant vegetation form is h or c). Note that this is the area of all the forested vegetation communities, not total wetland size. Do not include area where harvest is not permitted. Check only one option.

Area of wetland used for scoring 2.1.1: 11 ha

<input type="checkbox"/>	< 5 ha	= 0 pts
<input checked="" type="checkbox"/>	5 - 25 ha	= 4
<input type="checkbox"/>	26 - 50 ha	= 6
<input type="checkbox"/>	51 - 100 ha	= 8
<input type="checkbox"/>	101 - 200 ha	= 11
<input type="checkbox"/>	> 200 ha	= 14

Source of information:
photo interpretation

Wood Products Score (maximum 14 points) 4

2.1.2 Lowbush Cranberry

Check only one.

<input type="checkbox"/>	Present	= 2 pts
<input checked="" type="checkbox"/>	Absent	= 0
<input type="checkbox"/>	Harvest not permitted	= 0

Source of information:
not found during field surveys

Lowbush Cranberry Score (maximum 2 points) 0

2.1.3 Wild Rice

Check only one.

<input type="checkbox"/>	Present (min. size 0.5 ha)	= 10 pts
<input checked="" type="checkbox"/>	Absent	= 0
<input type="checkbox"/>	Harvest not permitted	= 0

Source of information:
not found during field surveys and no overlap with Ontario Wild Rice spatial data layer

Wild Rice Score (maximum 10 points) 0

2.1.4 Commercial Baitfish

Check only one.

<input checked="" type="checkbox"/>	Present	=	12 pts
<input type="checkbox"/>	Absent	=	0
<input type="checkbox"/>	Fishing not permitted	=	0

Source of information:
Wetland attached to lake with some open water,
therefore minnows surely present

Commercial Baitfish Score (maximum 12 points) 12

2.1.5 Furbearers

Only species recognized as furbearers under the Fish & Wildlife Conservation Act may be scored. Score 3 points for each furbearer species listed, up to a maximum of 12 points. Score 0 points if trapping is prohibited.

	Name of furbearer	Source of information
1.		
2.		
3.		
4.		
5.		
6.		

Furbearer Score (maximum 12 points) 0

2.2 RECREATIONAL ACTIVITIES

Sources of information and reasons for scoring a wetland under high or moderate use below, must be included below.

Circle one score for each of the activities listed. Score is cumulative – add score for hunting, nature enjoyment and fishing together for final score.

Intensity of Use	Type of Wetland-Associated Use		
	Hunting	Nature Enjoyment/ Ecosystem Study	Fishing
High	40 points	40 points	40 points
Moderate	20	20	20
Low	8	8	8
Not Possible/ No evidence	0	0	0

Sources of information (include evidence/criteria forming basis for score and any relevant reference used to obtain that information):

- e.g., Hunting scored at 20 points: 5 hunting blinds observed; hunters using area frequently monitored for compliance (source: D. Black, MNR Conservation Officer)

Hunting: No known presence of cabins, trails, blinds, etc, but some hunting for ducks assumed in the fall. Score = 8

Nature: No trails or interpretive signs present, but some sporadic use assumed. Score = 8

Fishing: Some recreational fishing assumed because it is immediately adjacent to a highly used recreational fishery in Thunder Lake. Score = 20

Recreational Activities Score
(maximum 80 points) 36

2.3 LANDSCAPE AESTHETICS

2.3.1 Distinctness

Check only one.

<input checked="" type="checkbox"/>	Clearly Distinct	= 3 pts
<input type="checkbox"/>	Indistinct	= 0

Landscape Distinctness Score
(maximum 3 points) 3

2.3.2 Absence of Human Disturbance

Check only one.

<input type="checkbox"/>	Human disturbances absent or nearly so	= 7 pts
<input checked="" type="checkbox"/>	One or several localized disturbances	= 4
<input type="checkbox"/>	Moderate disturbance; localized water pollution	= 2
<input type="checkbox"/>	Wetland intact but impairment of ecosystem quality intense in some areas	= 1
<input type="checkbox"/>	Extreme ecological degradation, or water pollution severe and widespread	= 0

Details regarding type, extent and location of disturbance scored:

Creeks draining into this wetland are impacted just upstream by a road and a utility corridor.

Source of information:

Google Earth imagery, field visits

Absence of Human Disturbance Score
(maximum 7 points) 4

2.4 EDUCATION AND PUBLIC AWARENESS

2.4.1 Educational Uses

Check highest appropriate category.

<input type="checkbox"/>	Frequent	= 20 pts
<input type="checkbox"/>	Infrequent	= 12
<input type="checkbox"/>	No visits	= 0

Details regarding the type and frequency of education uses scored above:

Source of information:

Educational Uses Score (maximum 20 points) 0

2.4.2 Facilities and Programs

Check all appropriate options, score highest category checked.

<input type="checkbox"/>	Staffed interpretation centre with shelters, trails, literature	= 8 pts
<input type="checkbox"/>	No interpretation centre or staff, but a system of self-guiding trails and observation points or brochures available	= 4
<input type="checkbox"/>	Facilities such as maintained paths (e.g., woodchips), boardwalks, boat launches or observation towers, but no brochures or other interpretation	= 2
<input type="checkbox"/>	No facilities or programs	= 0

Additional Notes/Comments:

Source of information:

Facilities and Programs Score
(maximum 8 points) 0

2.4.3 Research and Studies

Check all that apply; score highest category checked.

<input type="checkbox"/>	Long term research has been done	= 12 pts
<input type="checkbox"/>	Research papers published in refereed scientific journal or as a thesis	= 10
<input checked="" type="checkbox"/>	One or more (non-research) reports have been written on some aspect of the wetland's flora, fauna, hydrology, etc.	= 5
<input type="checkbox"/>	No research or reports	= 0

List of reports, publications, research studies etc scored above:

Wetland Baseline Studies conducted in 2013 and 2016 in support of Goliath Gold Mine (Treasury Metals) Environmental Assessment

Research and Studies Score
(maximum 12 points) 5

2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT

Name of Settlement: City of Dryden

Distance of wetland from settlement: <15 km from City of Dryden

Population of settlement: ~7600 (Source: Google Earth Imagery)

Circle only the highest score applicable

Distance of wetland to settlement	population >10,000	population 2,500-10,000	population <2,500 or cottage community
	within or adjoining settlement	40 points	26 points
0.5 to 10 km from settlement	26	16	10
10 to 60 km from settlement	12	8	4
60-100 km from nearest settlement	5	2	0
>100 km from nearest settlement	0	0	0

Proximity to Human Settlement Score
(maximum 40 points) 8

2.6 OWNERSHIP

FA of wetland on land held by or held under a legal contract by a conservation body (as defined by the <i>Conservation Land Act</i>) for wetland protection	_____ x 10 = _____
FA of wetland occurring in provincially or nationally protected areas (e.g., parks and conservation reserves)	_____ x 10 = _____
FA of wetland area in Crown/public ownership, not as above	<u>1.0</u> x 8 = <u>8</u>
FA of wetland area in private ownership, not as above	_____ x 4 = _____

Source of information:

Ownership Score (maximum 10 points) 8

2.7 SIZE (SOCIAL COMPONENT)

Total Size of Wetland = 15.41 ha Sum of scores from Subcomponents 2.1, 2.2, and 2.5 = 60

Circle the appropriate score from the table below.

Total for Size Dependent Social Features										
	<31	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
<5	1	2	4	8	12	13	14	14	15	16
5-8	2	2	5	9	13	14	15	15	16	16
9-12	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	18	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	19	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	20	20

Total Size Score (Social Component) 7

2.8 ABORIGINAL VALUES AND CULTURAL HERITAGE

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

Full documentation of sources must be attached to the data record.

2.8.1 Aboriginal Values

<input type="checkbox"/>	Significant	= 30 pts
<input type="checkbox"/>	Not Significant	= 0
<input checked="" type="checkbox"/>	Unknown	= 0

Additional Comments/Notes:

2.8.2 Cultural Heritage

<input type="checkbox"/>	Significant	= 30 pts
<input type="checkbox"/>	Not Significant	= 0
<input checked="" type="checkbox"/>	Unknown	= 0

Additional Comments/Notes:

Aboriginal Values/Cultural Heritage Score
(maximum 30 points) 0

3.0 HYDROLOGICAL COMPONENT

3.1 FLOOD ATTENUATION

Check one of the following five options.

If wetland is a *single contiguous coastal wetland*, ⇒ score 0 points for this section.

If the wetland is a *single contiguous lacustrine wetland* where the ratio of wetland area to lake area is less than 0.1, ⇒ score 0 points for this section.

If all wetland units of the wetland complex are coastal wetland units, or if all wetland units are all lacustrine and the ratio of the wetland area (total area of all wetland units) to the lake areas is less than 0.1 ⇒ score 0 points for this section.

If wetland or wetland complex is entirely isolated in site type, ⇒ score 100 points automatically.

Wetland not as above – proceed through steps A through O below.

- (A) Total wetland area = _____ ha
(B) Size of wetland's catchment = _____ ha
(C) Size of other detention areas in catchment = _____ ha
(D) Size of 'isolated' portions of wetland = _____ ha (FA = _____)
(E) Size of coastal units of wetland complex = _____ ha (FA = _____)
(F) Size of small lacustrine units of a wetland complex (when wetland area : lake area < 0.1)⁵ = _____ ha (FA = _____)

Wetland Surface Form (select the form which best describes the non-coastal units of the wetland):

- flooded with little or no aquatic vegetation = 0
 flooded but with submergent, emergent, or floating vegetation = 0.2
 flat (lawn) vegetation (typical of fens) = 0.5
 hummock-depression microtopography = 0.7
 patterned (e.g. string bog, ribbed fen) = 1.0

- (G) Wetland Surface Form Factor = _____ (maximum 1.0)

Points for Isolated Wetland Unit(s) (if not applicable, enter '0'):

- (H) (FA of D) x 100 pts = _____ pts

Points for Coastal Wetland Unit(s) (if not applicable, enter '0'):

- (I) (FA of E) x 100 pts = _____ pts

Points for Small Lacustrine Wetland Unit(s) (if not applicable enter '0'):

- (J) (FA of F) x 100 pts = _____ pts

- (K) Size of wetland minus isolated, coastal and small lacustrine portions = {A – D – E – F} = _____ ha

- (L) Number of points available to score 'rest' of wetland = {100 – H – I – J}

- (M) Total area of upstream detention areas* = {A + C} = _____ ha

- (N) Upstream Detention Factor = {(K/M) x 2} = _____ (maximum 1.0)

- (O) Attenuation Factor = {(K/B) x 10} = _____ (maximum 1.0)

- (P) Surface Form Factor = _____ (maximum 1.0)

Flood Attenuation Final Score = {(N + O + G] / 3} x L] + H} = _____

Flood Attenuation Score (maximum 100 points) 0

3.2 GROUNDWATER RECHARGE

3.2.1 Site Type

Wetland > 50% lacustrine (by area) or located on the St. Mary's River	=	0 pts
Wetland not as above. Calculate final score as follows:		
■ FA of isolated or palustrine wetland	=	x 20 =
■ FA of riverine wetland	=	x 5 =
■ FA of lacustrine wetland (when wetland is <50% lacustrine)" =100		x 0 = 0

Groundwater Recharge/Wetland Site Type Score
(maximum 20 points) 0

3.2.2 Soil Recharge Potential

Circle only one choice that **best** describes the soils in the area surrounding the wetland being evaluated (the soils within the wetland are not scored here).

Dominant Wetland Type	Group A, B, C (sands, gravels, loams)	Group D (clays, substrates in high water tables, shallow substrates over impervious materials such as bedrock)
	Lacustrine or on St. Mary's River	0
Isolated	10	5
Palustrine	7	4
Riverine (not on a major river)	5	2

Groundwater Recharge/Wetland Soil Recharge Potential Score (maximum 10 points) 0

3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

3.3.1 Watershed Improvement Factor

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

			Improvement Factor
FA of isolated wetland	=	x 0.5 =	
FA of riverine wetland	=	x 1.0 =	
FA of palustrine wetland with no inflow	=	x 0.7 =	
FA of palustrine wetland with inflows	=	x 1.0 =	
FA of lacustrine on lake shoreline	=.6	x 0.2 =	.12
FA of lacustrine at lake inflow or outflow	=.4	x 1.0 =	.4

Watershed Improvement Score (IF x 30)
 (maximum = 30) 15.6

3.3.2 Adjacent and Watershed Land Use

EVALUATION:

Step 1. Determination of Maximum Initial Score

- Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)
- All other wetlands (Go through steps 2, 3, 4, and 5b)

Step 2. Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in an extensive manner.

- | Choose one | Score |
|---|-------|
| <input type="checkbox"/> > 50% of catchment basin | 20 |
| <input checked="" type="checkbox"/> 20-50% of catchment basin | 14 |
| <input type="checkbox"/> < 20% of catchment basin | 4 |

Score for BLU 14

Step 3. Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

	Score
<input checked="" type="checkbox"/> Major corridor ¹	15
<input type="checkbox"/> Secondary corridor	11
<input type="checkbox"/> Tertiary corridor	6
<input type="checkbox"/> Temporary or abandoned	3
<input type="checkbox"/> None	0

Score for LUU 15

Step 4. Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits use for local road construction), etc. Score as 'present' only if a point source land use is located less than 1 km upstream from the wetland.

	Score
<input type="checkbox"/> Present	15
<input checked="" type="checkbox"/> Not present	0

Score for PS 0

Step 5. Calculation of total score for Adjacent and Watershed Land Use

	Score
<input type="checkbox"/> a) Wetland on the Great Lakes or St. Mary's River	0
<input checked="" type="checkbox"/> b) All other wetlands, calculate as follows:	

Final Score BLU + LUU + PS 29

3.3.3 Vegetation Form

Choose the category that best describes the vegetation of the wetland.

	Score
<input checked="" type="checkbox"/> Trees, shrubs or herbs (h, c, ts, ls, gc)	8 points
<input type="checkbox"/> Emergents, submergents (ne, re, be, f, ff, su)	10
<input type="checkbox"/> Little or no vegetation (u)	0

Dominant Vegetation Form Score
(maximum 10 points) 8

1. Major, secondary and tertiary roads are those that are indicated as such on the provincial highways map. Major hydro corridors are trunk lines coming directly from a generating station. Major pipelines are trans-continental lines. Secondary corridors are regional distribution lines (i.e. multi-cable hydro corridors not emanating directly from a generating station or regional gas distribution lines). Tertiary corridors are single hydro lines or local gas distribution lines (i.e. to domestic users).

3.4 CARBON SINK

Check only one of the following

<input type="checkbox"/>	Bog or fen with more than 50% coverage by organic soil	= 15 pts
<input type="checkbox"/>	Wetland with between 10 to 50% coverage by organic soil (i.e., mainly mineral or undesignated soils, any wetland type)	= 6
<input checked="" type="checkbox"/>	Marshes and swamps with more than 50% coverage organic soil	= 9
<input type="checkbox"/>	Wetland with less than 10% soils organic	= 0

Source of information:
Google Earth image interpretation and field data

Carbon Sink Score (maximum 15 points) 9

3.5 SHORELINE EROSION CONTROL

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.

Step 1:

<input type="checkbox"/>	Wetland entirely isolated or palustrine	= 0 pts
<input checked="" type="checkbox"/>	Any part of the wetland is riverine or lacustrine	= Go to step 2

Step 2: Choose the one characteristic that best describes the shoreline vegetation (see page 112 for description of "shoreline".)

<input checked="" type="checkbox"/>	Trees and shrubs	= 15 pts
<input type="checkbox"/>	Emergent vegetation	= 8
<input type="checkbox"/>	Submergent vegetation	= 6
<input type="checkbox"/>	Other shoreline vegetation	= 3
<input type="checkbox"/>	No vegetation	= 0

Shoreline Erosion Control Score
(maximum 15 points) 15

3.6 GROUNDWATER DISCHARGE

Circle the characteristics that best describe the wetland being evaluated and then sum the scores. If the sum exceeds 30 points, assign the maximum score of 30). NOTE: for wetland type, wetland type scored does not have to be the dominant type in the wetland.

Catchment Interaction/Potential for Discharge				
	None to Little	Some	High	
Wetland Characteristics	Wetland type Presence/absence	Bog = 0	Swamp/Marsh = 2	Fen = 5
	Basin Topography	Flat/rolling = 0	Hilly = 2	Major Relief Break = 5
	Wetland area: Upslope catchment area	Large (>50%) = 0	Moderate (5-50%) = 2	Small (<5%) = 5
	Lagg development	None found = 0	Minor = 2	Extensive = 5
	Seeps	None = 0	≤ 3 seeps = 2	> 3 seeps = 5
	Iron precipitates	None = 0	≤ 3 sites = 2	> 3 sites = 5
	Surface marl deposits	None = 0	≤ 3 sites = 2	> 3 sites = 5
	Wetland pH	Low < 4.2 = 0	Moderate 4.2-5.7 = 5	High >5.7 = 10
	Catchment soil coverage	Patchy = 0	Thin (<20 cm) = 2	Thick = 5
	Catchment soil permeability	Low = 0	Moderate = 2	High = 5

Additional Comments/Notes:

Groundwater Discharge Score
(maximum 30 points) 17

4.0 SPECIAL FEATURES

COMPONENT

4.1 RARITY

4.1.1 Wetlands

Wetland type (check one or more)

<input type="checkbox"/>	Bog
<input type="checkbox"/>	Fen
<input checked="" type="checkbox"/>	Swamp
<input checked="" type="checkbox"/>	Marsh

Ecoregion/Ecodistrict		Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	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
5E-1	Thessalon	10	0	30	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tomiko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E-13	Western Sault Ste. Marie – Lake Superior Coast	20	0	10	30
5-S	Lake of the Woods	10	10	20	10

Rarity of Wetland Type Score
(maximum 70 points) 30

4.1.2 Species

4.1.2.1 Reproductive Habitat for an Endangered or Threatened Species

Under the “Activity” column, when scoring animal species, record what the animal was doing when observed (e.g., nesting, courtship, singing, etc).

Common Name	Scientific Name	Activity	Date Observed	Info Source

For each species score 250 points. (Score is cumulative, no maximum score)

Additional Notes/Comments:

Reproductive Habitat for Endangered or Threatened Species (no maximum) 0

4.1.2.2 Traditional Migration or Feeding Habitat for an Endangered or Threatened Species

Under the “Activity” column, when scoring animal species, record what the animal was doing when observed (e.g., nesting, courtship, singing, feeding, resting etc). Dates that species has been recorded using the wetland must be included in the table below.

Common Name	Scientific Name	Activity	Dates Observed	Info Source

For one species score 150 points; for each additional species score 75 points. (Score is cumulative)

Additional Notes/Comments:

Traditional Habitat for Endangered or Threatened Species (no maximum) 0

4.1.2.3 Provincially Significant Animal Species

Common Name	Scientific Name	Activity	Dates Observed	Info Source

Additional Notes/Comments:

One species = 50 pts	9 species = 140 pts	17 species = 160 pts
2 species = 80	10 species = 143	18 species = 162
3 species = 95	11 species = 146	19 species = 164
4 species = 105	12 species = 149	20 species = 166
5 species = 115	13 species = 152	21 species = 168
6 species = 125	14 species = 154	22 species = 170
7 species = 130	15 species = 156	23 species = 172
8 species = 135	16 species = 158	24 species = 174
		25 species = 176

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Animal Species
(no maximum) 0

4.1.2.4 Provincially Significant Plant Species

Common Name	Scientific Name	Activity	Dates Observed	Info Source

Additional Notes/Comments:

One species = 50 pts	9 species = 140 pts	17 species = 160 pts
2 species = 80	10 species = 143	18 species = 162
3 species = 95	11 species = 146	19 species = 164
4 species = 105	12 species = 149	20 species = 166
5 species = 115	13 species = 152	21 species = 168
6 species = 125	14 species = 154	22 species = 170
7 species = 130	15 species = 156	23 species = 172
8 species = 135	16 species = 158	24 species = 174
		25 species = 176

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species
(no maximum) 0

4.1.2.5 Regionally Significant Species

Common Name	Scientific Name	Activity	Dates Observed	Info Source

** Score only if there is an approved list.

Scoring:

One species= 20 pts	4 species = 45 pts	7 species = 58 pts
2 species = 30	5 species = 50	8 species = 61
3 species = 40	6 species = 55	9 species = 64
		10 species = 67

For each significant species over 10 in wetland, add 1 point.

Regionally Significant Species Score (no maximum score) 0 _____
--

4.1.2.6 Locally Significant Species (Ecodistrict)

Common Name	Scientific Name	Activity	Dates Observed	Info Source

Scoring:

One species= 10 pts	4 species = 31 pts	7 species = 43 pts
2 species = 17	5 species = 38	8 species = 45
3 species = 24	6 species = 41	9 species = 47
		10 species = 49

For each significant species over 10 in wetland, add 1 point.

Locally Significant Species Score (no maximum score) 0 _____

4.1.2.7 Species of Special Status

Black Duck

Suitable breeding habitat present and within assessment range (Figure 25)

Assessment Category	Check one	Points
20 - 40 Indicated Pairs/100 km sq	<input type="checkbox"/>	= 20
10 - 20 Indicated Pairs/100 km sq	<input type="checkbox"/>	= 15
5 - 10 Indicated Pairs/100 km sq	<input checked="" type="checkbox"/>	= 10
1 - 5 Indicated Pairs/100 km sq	<input type="checkbox"/>	= 5
Habitat not suitable	<input type="checkbox"/>	= 0
Out of assessment range	<input type="checkbox"/>	= 0

Additional Notes/Comments:

Black Duck Score
(maximum 20 points) 10

4.2 SIGNIFICANT FEATURES AND HABITATS

4.2.1 Colonial Waterbirds

Record all available information. Score the highest applicable category. Include additional information as possible (e.g., nest locations, etc).

Activity	Species	Info Source	Points
Currently nesting			= 50
Known to have nested within the past 5 years			= 25
Active feeding area (great blue heron excluded)			= 15
None known			= 0

Additional Notes/Comments:

Colonial Waterbird Nesting Score
(maximum 50 points) 0

4.2.2 Winter Cover for Wildlife

Score highest appropriate category. Include rationale/sources of information.

<input type="text"/>	Provincially significant	= 100 pts
<input type="text"/>	Significant in Ecoregion	= 50
<input type="text"/>	Significant in Ecodistrict	= 25
<input type="text"/>	Locally significant	= 10
<input type="text"/>	Little or poor winter cover	= 0

Species/habitat/vegetation community scored (e.g., winter deer cover in hemlock swamp, S3 and S4b):

Source of information:

Winter Cover for Wildlife Score
(maximum 100 points) 0

4.2.3 Waterfowl Staging and/or Moulting Areas

Check highest level of significance for both staging and moulting; add scores for staging and for moulting together for final score. However, maximum score for evaluation under this section is 150 points.

	Staging	Moulting
Nationally/internationally significant	<input type="text"/> = 150 pts	<input type="text"/> = 150 pts
Provincially significant	<input type="text"/> = 100	<input type="text"/> = 100
Significant in the Ecoregion	<input type="text"/> = 50	<input type="text"/> = 50
Significant in the Ecodistrict	<input type="text"/> = 25	<input type="text"/> = 25
Locally Significant/ Known to occur	<input type="text"/> = 10	<input type="text"/> = 10
Not possible/Unknown	<input checked="" type="checkbox"/> = 0	<input checked="" type="checkbox"/> = 0

Species/habitat/vegetation community scored (e.g., approx 20 mallards in W3):

Source of information:

Waterfowl Staging/Moulting Score
(maximum 150 points) 0

4.2.4 Waterfowl Breeding

Check highest level of significance.

<input type="checkbox"/>	Nationally/internationally significant	= 150 pts
<input type="checkbox"/>	Provincially significant	= 100
<input type="checkbox"/>	Significant in Ecoregion	= 50
<input type="checkbox"/>	Significant in Ecodistrict	= 25
<input checked="" type="checkbox"/>	Locally significant/Known to occur	= 10
<input type="checkbox"/>	Habitat not suitable	= 0

Species/habitat/vegetation community scored (e.g., mallard in W3):

Source of information:

Waterfowl Breeding Score

(maximum 150 points) 10

4.2.5 Migratory Passerine, Shorebird or Raptor Stopover Area

Check highest level of significance.

<input type="checkbox"/>	Nationally/Internationally significant	= 150 pts
<input type="checkbox"/>	Provincially significant	= 100
<input type="checkbox"/>	Significant in Ecoregion	= 50
<input type="checkbox"/>	Significant in Ecodistrict	= 25
<input type="checkbox"/>	Locally significant/Known to occur	= 10
<input checked="" type="checkbox"/>	Not possible/Unknown	= 0

Species/habitat/vegetation community scored:

Source of information:

Passerine, Shorebird or Raptor Stopover Score

(maximum 150 points) 0

4.2.6 Ungulate habitat

EVALUATION:

Score (1) + (2) + one of (3) to (6)

	Score
<input type="checkbox"/> 1. Ungulate summer cover	= 15 points
<input type="checkbox"/> 2. Mineral licks	= 50
<input type="checkbox"/> 3. Moose aquatic feeding area Class 1	= 0
<input type="checkbox"/> 4. Moose aquatic feeding area Class 2	= 10
<input checked="" type="checkbox"/> 5. Moose aquatic feeding area Class 3	= 20
<input type="checkbox"/> 6. Moose aquatic feeding area Class 4	= 35

(Score is cumulative for a maximum possible score of 100)

Ungulate Habitat Score

(maximum 100 points) 20

4.2.7 Fish Habitat

4.2.7.1 Spawning and Nursery Habitat

Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5 – 4.9	0.2
5.0 – 9.9	0.4
10.0 – 14.9	0.6
15.0 – 19.9	0.8
20.0 +	1.0

Step 1:

Fish habitat is not present within the wetland

Go to Step 7, Score 0 points

Fish habitat is present within the wetland

Go to Step 2

Step 2: Choose only one option

Significance of the spawning and nursery habitat within the wetland is known

Go to Step 3

Significance of the spawning and nursery habitat within the wetland is not known

Go through Steps 4, 5 and 6

Step 3: Select the highest appropriate category below, attach documentation:

Significant in Ecoregion

Go to Step 7, Score 100 points

Significant in Ecodistrict

Go to Step 7, Score 50 points

Locally Significant Habitat (5.0+ ha)

Go to Step 7, Score 25 points

Locally Significant Habitat (<5.0 ha)

Go to Step 7, Score 15 points

Step 4: Low Marsh = the 'permanent' marsh area, from the existing water line out to the outer boundary of the wetland.

Low marsh not present

Go to Step 5

Low marsh present

Continue through Step 4, scoring as noted below

Scoring of Low Marsh:

1. Check the appropriate **Vegetation Group** (see Appendix 7) for each Low Marsh community. (Based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community.)
2. Sum the areas (ha) of the vegetation communities assigned to each **Vegetation Group**.
3. Use these areas to assign an Area Factor (from Table 8) for each checked **Vegetation Group**.
4. Multiply the **Area Factor** by the **Multiplication Factor** for each row to calculate **Score**.
5. Sum all numbers in Score column to get **Total Score for Low Marsh**.

Scoring for Presence of Key Vegetation Groups – Low Marsh						
Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
1	Tallgrass	<input type="checkbox"/>			6	
2	Shortgrass-Sedge	<input type="checkbox"/>			11	
3	Cattail-Bulrush-Burreed	<input type="checkbox"/>			5	
4	Arrowhead-Pickerelweed	<input type="checkbox"/>			5	
5	Duckweed	<input type="checkbox"/>			2	
6	Smartweed-Waterwillow	<input type="checkbox"/>			6	
7	Waterlily-Lotus	<input type="checkbox"/>			11	
8	Waterweed-Watercress	<input type="checkbox"/>			9	
9	Ribbongrass	<input type="checkbox"/>			10	
10	Coontail-Naiad-Watermilfoil	<input type="checkbox"/>			13	
11	Narrowleaf Pondweed	<input type="checkbox"/>			5	
12	Broadleaf Pondweed	<input type="checkbox"/>			8	
Total Score for Low Marsh (maximum 75 points)						

Continue to Step 5

Step 5: High Marsh = the 'seasonal' marsh area, from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as a wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.



High marsh not present

Go to Step 6



High marsh present

Continue through Step 5, scoring as noted below

Scoring of High Marsh:

1. Check the appropriate **Vegetation Group** (see Appendix 7) for each High Marsh community. (Based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community.)
2. Sum the areas (ha) of the vegetation communities assigned to each **Vegetation Group**.
3. Use these areas to assign an **Area Factor** (from Table 8) for each checked **Vegetation Group**.
4. Multiply the Area Factor by the **Multiplication Factor** for each row to calculate **Score**.
5. Sum all numbers in Score column to get **Total Score for High Marsh**.

Scoring for Presence of Key Vegetation Groups – High Marsh

Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
1	Tallgrass	<input type="checkbox"/>			6	
2	Shortgrass-Sedge	<input type="checkbox"/>			11	
3	Cattail-Bulrush-Burreed	<input checked="" type="checkbox"/>	3.8	0.2	5	1
4	Arrowhead-Pickerelweed	<input type="checkbox"/>			5	
Total Score for High Marsh (maximum 25 points)						1

Continue to Step 6

Step 6:

Swamp: Swamp communities containing fish habitat, either seasonally or permanently. Determine the total area of seasonally flooded swamps and permanently flooded swamps containing fish habitat.



Swamp containing fish habitat not present

Go to Step 7



Swamp containing fish habitat present

Continue through Step 6, scoring as follows

Scoring of Swamp:

1. Determine the total area (ha) of seasonally flooded swamp communities within the wetland containing fish habitat and record below.
2. Determine the total area (ha) of permanently flooded swamp communities within the wetland containing fish habitat and record in below.
3. Use these areas to assign an **Area Factor** (from Table 8).
4. Multiply the **Area Factor** by the **Multiplication Factor** for each row to calculate Score.
5. Sum all numbers in Score column to get **Total Score for Swamp**.

Scoring Swamps for Fish Habitat (Seasonally Flooded; Permanently Flooded)					
Swamp Containing Fish Habitat	Present (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
Seasonally Flooded Swamp	X	11.5	0.6	10	6
Permanently Flooded Swamp				10	
Total Score for Swamp (maximum 20 points)					6

Continue to Step 7

Step 7: CALCULATION OF FINAL SCORE

NOTE: Scores for Steps 4, 5 and 6 are only recorded if Steps 1 and 3 have not been scored.

- A. Score from Step 1 (fish habitat not present) = _____
- B. Score from Step 3 (significance known) = _____
- C. Score from Step 4 (Low Marsh) = _____
- D. Score from Step 5 (High Marsh) = 1
- E. Score from Step 6 (Swamp) = 6

Calculation of Final Score for Spawning and Nursery Habitat = A or B or Sum of C, D, and E

Score for Spawning and Nursery Habitat
(maximum 100 points) 7

4.2.7.2 Migration and Staging Habitat

Step 1:

<input type="checkbox"/>	Staging or Migration Habitat is not present in the wetland	Go to Step 4, Score 0 points
<input type="checkbox"/>	Staging or Migration Habitat is present in the wetland, significance of the habitat is known	Go to Step 2
<input checked="" type="checkbox"/>	Staging or Migration Habitat is present in the wetland, significance of the habitat is not known	Go to Step 3

Step 2: Select the highest appropriate category below. Ensure that documentation is attached to the data record.

<input type="checkbox"/>	Significant in Ecoregion	Score 25 points in Step 4
<input type="checkbox"/>	Significant in Ecodistrict	Score 15 points in Step 4
<input type="checkbox"/>	Locally Significant	Score 10 points in Step 4
<input type="checkbox"/>	Fish staging and/or migration habitat present, but not as above	Score 5 points in Step 4

Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to be the dominant site type). Note name of river for ones within 0.75 km of rivermouth.

<input checked="" type="checkbox"/>	Wetland is riverine at rivermouth or lacustrine at rivermouth	Score 25 points in Step 4
<input type="checkbox"/>	Wetland is riverine, within 0.75 km of rivermouth	Score 15 points in Step 4
<input type="checkbox"/>	Wetland is lacustrine, within 0.75 km of rivermouth	Score 10 points in Step 4
<input type="checkbox"/>	Fish staging and/or migration habitat present, but not as above	Score 5 points in Step 4

Step 4: Enter a score from only one of the three above Steps.

<p>Score for Staging and Migration Habitat (maximum score 25 points) <u>25</u></p>
--

4.3 ECOSYSTEM AGE

(Fractional Area = Area of wetland type/total area of wetland)

	Fractional Area		Score
Bog	=	x 25 =	
Fen, treed to open on deep soils, floating mats or marl	=	x 20 =	
Fen, on limestone rock	=	x 5 =	
Swamp	= .75	x 3 =	2.25
Marsh	= .25	x 0 =	0
	Total	=	2.25

Ecosystem Age Score (maximum 25 points) 2

4.4 GREAT LAKES COASTAL WETLANDS

Choose one only. Only coastal wetland units may be scored.

<input type="checkbox"/>	Wetland < 10 ha	=	10 pts
<input type="checkbox"/>	Wetland 10-50 ha	=	25
<input type="checkbox"/>	Wetland 51-100 ha	=	50
<input type="checkbox"/>	Wetland > 100 ha	=	75

If the wetland is a complex, identify which wetlands units or wetland communities are being scored as coastal:

Great Lakes Coastal Wetland Score
(maximum 75 points) 0

Appendix B. List of Plant Species Identified during 2012 and 2016 wetland field surveys

Latin name	Common name	2012	2016
<i>Abies balsamea</i>	Balsam fir	x	x
<i>Acer spicatum</i>	Mountain maple		x
<i>Achillea millefolium</i>	Yarrow		x
<i>Acorus calamus</i>	Sweetflag	x	
<i>Actaea rubre</i>	Baneberry		x
<i>Agrostis scabra</i>	Tickle grass	x	
<i>Alisma plantago-aquatica</i>	Water plantain	x	x
<i>Alnus rugosa</i>	Speckled alder	x	x
<i>Anaphalis margaritacea</i>	Pearly everlasting		x
<i>Andromeda glaucophylla</i>	Bog rosemary	x	x
<i>Andromeda polifolia</i>	Dwarf bog rosemary		x
<i>Anemone canadensis</i>	Canada anemone		x
<i>Anemone quinquefolia</i>	Wood anemone		x
<i>Araila nudicaulis</i>	Sarsaparilla		x
<i>Asarum canadense</i>	Wild ginger		x
<i>Asclepias incarnata</i>	Swamp milkweed	x	
<i>Aster borealis</i>	Rush aster	x	
<i>Aster lanceolatus</i>	Lance-leaved aster	x	
<i>Aster nemoralis</i>	Bog aster	x	
<i>Aster puniceus</i>	Purple stemmed aster	x	x
<i>Aster spp.</i>	Aster	x	
<i>Astragalus americanus</i>	American vetch		x
<i>Astragalus canadensis</i>	Milk vetch		x
<i>Athyrium filix-femina</i>	Lady fern	x	x
<i>Aulacomnium palustre</i>	Ribbed bog moss	x	
<i>Betula papyrifera</i>	White birch	x	x
<i>Betula glandulosa</i>	Dwarf birch	x	x
<i>Bidens cernua</i>	Nodding bur-marigold	x	
<i>Bidens frondosa</i>	Devil's beggars-ticks	x	
<i>Brachythecium velutinum</i>	Feather moss		x
<i>Calamagrostis canadensis</i>	Canada bluejoint	x	x
<i>Calla palustris</i>	Water arum	x	x
<i>Callitriche hermaphroditica</i>	Submerged water starwort	x	
<i>Caltha palustris</i>	Marsh marigold	x	x
<i>Carex aquatilis</i>	Wire sedge	x	

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<i>Carex bebbii</i>	Bebb's sedge	x	
<i>Carex brunnescens</i>	Brownish sedge	x	
<i>Carex disperma</i>	Soft-leaved sedge	x	
<i>Carex exilis</i>	Starved sedge	x	
<i>Carex intumescens</i>	Bladder sedge	x	
<i>Carex lacustris</i>	Lakebank sedge	x	
<i>Carex lasiocarpa</i>	Wire Sedge	x	
<i>Carex magellanica</i>	Poor sedge	x	
<i>Carex oligosperma</i>	Few-seeded sedge	x	
<i>Carex pauciflora</i>	Few flowered sedge	x	
<i>Carex spp.</i>	Sedges	x	
<i>Carex trisperma</i>	3 fruited sedge	x	
<i>Carex utriculata</i>	Beaked sedge	x	
<i>Carex viridula</i>	Green sedge	x	
<i>Ceratophyllum demersum</i>	Coontail		x
<i>Chamaedaphne calyculata</i>	Leather leaf	x	x
<i>Chrysanthemum leucanthemum</i>	Daisy		x
<i>Cinna latifolia</i>	Drooping woodreed	x	
<i>Cirsium arvense</i>	Canada thistle		x
<i>Cirsium multicum</i>	Swamp thistle	x	
<i>Cladina rangiferina</i>	Reindeer lichen	x	
<i>Cladonia cristatella</i>	British Soldiers	x	
<i>Climacium dendroides</i>	Tree moss	x	
<i>Clintonia borealis</i>	Blue beard lilly		x
<i>Coptis trifolia</i>	Goldthread	x	x
<i>Cornus canadensis</i>	Bunch berry	x	x
<i>Cornus stolonifera</i>	Red-Osier dogwood	x	x
<i>Dicranum undulatum</i>	Wavy moss	x	
<i>Drepanocladus spp.</i>	sickle moss	x	
<i>Equisetum arvense</i>	Field Horsetail		x
<i>Equisetum palustre</i>	Marsh horsetail	x	x
<i>Equisetum pratense</i>	Meadow horsetail	x	
<i>Equisetum sylvaticum</i>	Wood horsetail	x	x
<i>Eriophorum angustifolium</i>	Tall gottongrass		x
<i>Eriophorum viridi-carniatum</i>	Green cottongrass	x	
<i>Eriophorum vaginatum</i>	Dense cottongrass	x	
<i>Eupatorium maculatum</i>	Spotted Joe-Pye weed	x	
<i>Eurybia macrophylla</i>	Large Leaf aster		x
<i>Fragaria virginiana</i>	Common strawberry	x	x
<i>Fraxinus nigra</i>	Black ash		x

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<i>Galium trifidum</i>	Small bedstraw	x	x
<i>Galium triflorum</i>	Fragrant bedstraw	x	x
<i>Gaultheria hispidula</i>	Creeping snowberry	x	x
<i>Geum rivale</i>	Purple Avens		x
<i>Glyceria borealis</i>	Northern manna grass	x	
<i>Glyceria canadensis</i>	Rattlesnake manna grass	x	
<i>Glyceria grandis</i>	Tall manna grass	x	
<i>Gymnocarpium dryopteris</i>	Oak fern	x	x
<i>Hypericum majus</i>	Canada St. John's wort	x	
<i>Impatiens capensis</i>	Jewelweed	x	x
<i>Iris versicolor</i>	Northern blue flag	x	x
<i>Juncus tenuis</i>	Path rush	x	
<i>Kalmia polifolia</i>	Bog laurel	x	x
<i>Larix laricina</i>	Tamarack	x	x
<i>Ledum groenlandicum</i>	Labrador tea	x	x
<i>Lemna minor</i>	Duckweed		x
<i>Lemna spp.</i>	Duckweed	x	
<i>Linnaea borealis</i>	Twinflower	x	x
<i>Lonicera oblongifolia</i>	Swamp honeysuckle	x	
<i>Lonicera villosa</i>	Canada honeysuckle		x
<i>Lycopodiella inundata</i>	Northern bog clubmoss	x	
<i>Lycopodium annotinum</i>	Clubmoss	x	
<i>Lycopus uniflorus</i>	Northern bugleweed	x	
<i>Magalodonta beckii</i>	Water marigold	x	
<i>Maianthemum canadensis</i>	Canada may mlower		x
<i>Maianthemum trifolium</i>	Three-Leaved solomon's seal	x	x
<i>Menyanthes trifoliata</i>	Buckbean	x	x
<i>Metha arvensis</i>	Mint		x
<i>Mitella nuda</i>	Naked mitrewort	x	x
<i>Mnium spp.</i>	Mniums	x	x
<i>Myrica gale</i>	Sweet Gale	x	x
<i>Myriophyllum sibiricum</i>	Northern water milfoil	x	
<i>Najas flexilis</i>	Water nymph	x	
<i>Nuphar pumila</i>	Small yellow pond lily	x	x
<i>Oxycoccus microcarpus</i>	Small nog cranberry		
<i>Petasites frigidus</i>	Northern sweet coltsfoot	x	x
<i>Phalaris arundinacea</i>	Reed canary grass	x	
<i>Phragmites australis</i>	Common reed	x	
<i>Picea mariana</i>	Black spruce	x	x
<i>Plantago major</i>	Plantain		x

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<i>Poa palustris</i>	Fowl blue grass	x	
<i>Polygonum periscaria</i>	Lady's thumb	x	
<i>Polytrichum commune</i>	Haircap moss		x
<i>Polytrichum spp.</i>	Haircap moss	x	
<i>Populus balsamifera</i>	Balsam poplar	x	x
<i>Populus tremuloides</i>	Trembling aspen		x
<i>Potamogeton amplifolius</i>	Large-Leaved pondweed		x
<i>Potamogeton natans</i>	Floating-leaved pondweed	x	
<i>Potamogeton pusillus</i>	Slender pondweed	x	
<i>Potamogeton richardsonii</i>	Richardson's pondweed	x	
<i>Potamogeton robbinsii</i>	Fern pondweed	x	
<i>Potentilla palustris</i>	Marsh cinquefoil	x	x
<i>Prunus virginiana</i>	Choke cherry		x
<i>Ptilium crista-castensis</i>	Plume moss		x
<i>Pyrola asarifolia</i>	Pink pyrola	x	
<i>Pyrola spp.</i>	Pyrola		x
<i>Ranunculus acris</i>	Buttercup		x
<i>Rhamnus alnifolia</i>	Alderleaf buckthorn		x
<i>Rhododendron groenlandicum</i>	Labrador tea		
<i>Rhytidiadelphus triquetrus</i>	Electrified cat's tail moss		
<i>Ribes lacustre</i>	Gooseberry		x
<i>Ribes spp.</i>	Currant	x	x
<i>Rosa acicularis</i>	Prickly wild rose	x	x
<i>Rubus idaeus</i>	Red raspberry	x	x
<i>Rubus pubescens</i>	Dwarf raspberry	x	x
<i>Rumex orbiculatus</i>	Great water dock	x	x
<i>Sagittaria cuneata</i>	Floating arrowhead	x	
<i>Sagittaria rigida</i>	Broad-leaved arrowhead	x	
<i>Salix spp.</i>	Willow	x	x
<i>Sarracenia purpurea</i>	Pitcher-plant	x	x
<i>Scirpus acutus</i>	Hardstem bulrush	x	
<i>Scirpus cyperinus</i>	Wool grass	x	
<i>Scorpidium scorpiodes</i>	Scorpion's tail	x	
<i>Scirpus cespitosus</i>	Tufted clubrush	x	
<i>Sium suave</i>	Water parsnip	x	
<i>Solidago spp</i>	Golden Rod		x
<i>Solidago uliginosa</i>	Northern bog goldenrod	x	
<i>Sorbus americana</i>	Mountain ash	x	x
<i>Sparganium emersum</i>	Common burreed	x	
<i>Sparganium eurycarpum</i>	Large-Fruited Burreed	x	

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<i>Sparganium fluctuans</i>	Floating-leaved Burreed	x	
<i>Sphagnum girgensohnii</i>	Common Green peat moss	x	
<i>Sphagnum russowii</i>	Wide-tongued peat moss	x	
<i>Sphagnum spp.</i>	Common peat moss	x	
<i>Thalictrum pubescens</i>	Tall meadow rue	x	x
<i>Thuidium delicatulum</i>	Common fern moss	x	
<i>Thuja occidentalis</i>	Eastern white cedar	x	x
<i>Tomenthypnum nitens</i>	Fuzzy brown moss	x	
<i>Triadenum fraseri</i>	Marsh St. John's wort	x	
<i>Trientalis borealis</i>	Starflower	x	x
<i>trifolium hybridum</i>	Clover		x
<i>Trillium cernuum</i>	Nodding trillium		x
<i>Typha latifolia</i>	Common cattail	x	x
<i>Utricularia vulgaris</i>	Common bladderwort	x	x
<i>Vaccinium macrocarpon</i>	Large cranberry	x	
<i>Vaccinium myrtilloides</i>	Velvet leaf blueberry		x
<i>Vaccinium oxycoccos</i>	Small cranberry	x	
<i>Vaccinium spp.</i>	Blueberry	x	
<i>Vallisneria americana</i>	Tape grass	x	
<i>Viburnim opulus</i>	Highbush cranberry	x	x
<i>Viola spp.</i>	Violet	x	x
<i>Zizania palustris</i>	Wild rice	x	

Appendix C. Request for Information Letter



Treasury METALS INC.

Goliath Gold Project P.O. Box 783 Dryden, Ontario, P8N 2Z4, Canada
Tel: (807) 938-6961 Fax: (807) 938-6499
www.treasuremetals.com

January 28, 2014

SUBJECT: **Wetland Evaluations and Aboriginal Values**

Chief Gardner,

Treasury Metals Inc., through its consultant DST Consulting Engineers, is currently undertaking a baseline wetlands assessment using the OWES (Ontario Wetland Evaluation System) protocol from the Ontario Ministry of Natural Resources. We would like to inform you of this study and to request some information from you about the specific area in which wetlands are being evaluated.

What are wetlands?

Wetlands are areas where water-saturated soils favour the type of plants which are adapted to grow there. Marshes, bogs, swamps, and fens are all types of wetlands. Wetlands provide unique and specialized habitat for a great variety of species.

What is the wetlands evaluation program all about?

The purpose of the wetlands evaluation program is to describe the wetlands and identify their ecological and cultural significance. This is done by applying a standard procedure for collecting information to each wetland that we wish to evaluate.

There are many types of information collected on each wetland which enables us to determine its significance in terms of its biological productivity, the diversity of habitat it supports, the human uses which it may have (like hunting or wild rice harvest), its ability to attenuate floods and recharge ground water, and the rare or endangered plant and animal species it may support.

What does it all mean?

What this means is that once the information is collected, each wetland can then be ranked according to provincial guidelines, which determines its level of provincial significance.

Why do we need your help?

One of the attributes in the wetland evaluation system is "Aboriginal Values". In this, we seek to include and acknowledge any cultural heritage or aboriginal values that are identified. For example, a wetland may be used for wild rice harvesting or trapping, or it may have special cultural or spiritual values.

Treasury Metals Inc. has contracted biologists from DST Consulting Engineers Inc. to evaluate several wetlands within the area of interest. We have provided a map of this area and are requesting that you identify wetland areas in which there are any special values that your community may have attached to the wetland. All applicable information will be incorporated into the evaluation.

Please respond in writing prior to February 21, 2014 or by directly contacting the consultant biologist, Krista Prosser (DST Consulting Engineers) at (807) 548-2383 ext. 221. Krista can provide you with any other information about wetland evaluations you may require. We look forward to hearing from you.

Yours truly,
<Original signed by>

Murray Ferguson
Director of Community Development
Treasury Metals Inc.
murray@treasurymetals.com
807 938 6961 ext. 211

<Original signed by>

Krista Prosser
Consultant Biologist
DST Consulting Engineers
kprosser@dstgroup.com
807 548 2383 ext. 221