Supplemental Studies for Natural Environment Features of Ruby Road Waste Disposal Site

Township of Bonnechere Valley

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November 2008

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Introduction

The initial environmental impact study of the Ruby Road waste disposal site (Snider 2008) identified the need to conduct supplemental studies during appropriate seasons to assess specific natural heritage features. The initial environmental impact study specifically stated the need for supplemental studies to assess the potential presence of threatened and endangered species, the potential presence of other significant species of flora or fauna that could indicate significant wildlife habitat and lastly to assess the nearby watercourses for their potential as fish habitat.

This study addresses those identified needs specifically:

- A breeding bird survey to observe for threatened and endangered, species, species of special concern and provincially significant species on the site, the potential lands of purchase, as well as the adjacent areas.
- A vascular plant survey to observe for threatened and endangered species, species of special concern and provincially significant species on the site, the potential lands of purchase, as well as the adjacent areas.
- A survey of other possible species at risk including reptiles, amphibians and mammals on the site, the potential lands of purchase, as well as the adjacent areas.
- A survey of fish habitat in nearby watercourses identified with the numbers 77, 78 and 121 (Figure 1).

Field investigations were conducted on April 15 and 16, 2008, May 16, 2008, June 19 and 20, 2008 and July 30, 2008 on the Ruby Road waste site.

The licensed waste site is a 0.5 ha area that received municipal waste until December 2003 (Cambium 2007). The proposed waste disposal site is to the southwest (Figure 2) of the transfer site.

There is a 33 ha area on lot 27 con 9 extending in a southerly direction from the waste site that are potential lands for purchase for the contaminant attenuation zone.

Field investigations focused on the licensed site and on the 33 ha potential contaminant attenuation zone. Field investigations then paid attention to watercourses closest to the licensed site primarily within a 1 km radius of the transfer site. Vegetation communities on the north side of Ruby Road opposite the licensed site were also assessed for plants and wildlife as seen from the road right of way.

Table 1 Dates of Field Investigation

Date	Survey focus
April 15, 2008	Breeding bird survey
April 16, 2008	Breeding bird survey
May 16, 2008	Breeding bird and vascular plant survey
June 19, 2008	Breeding bird and vascular plant survey
June 20, 2008	Breeding bird and vascular plant survey
July 30, 2008	Fish habitat survey

Breeding Bird Survey

The initial environmental impact study (Snider 2008) had field investigations in April 2008 outside of the normal breeding period of most birds. To assess for significant birds a breeding bird inventory at the appropriate time of the year was carried out to assess for the presence of threatened or endangered species, species of special concern or other provincially significant species.

The Ontario Breeding Bird Atlas (OBBA 2008) has an extensive database of breeding bird information on a 10X10 km square grid pattern. UTM 18UR42 (a 10X10 km square) includes the study area was investigated on line and it was found that there are no significant bird species identified in this square for the last atlas period (2001 to 2005).

Table 2 Provincial Rarity or S Ranks Definitions from the NHIC Website

S1	**Critically Imperiled**—Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
S2	**Imperiled**—Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
S3	**Vulnerable**—Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4	**Apparently Secure**—Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5	**Secure**—Common, widespread, and abundant in the nation or state/province.
SNR	**Unranked**—Nation or state/province conservation status not yet assessed.
SE	**Exotic;** not believed to be a native component of Ontario's flora.
SU	**Unrankable**—Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
SNA	**Not Applicable** —A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
S#S#	**Range Rank** —A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

The Pembroke District indicated in a letter to Cambium Environmental (Appendix 1 Snider 2008) that red-shouldered hawks and the redheaded woodpeckers are two species of special concern that are known to occur in the general area of the waste site.

The red-shouldered hawk is a species of special concern nationally (SARA 2008) and has been downlisted provincially. The red-shouldered hawk prefers deciduous or mixed-wood forests (SARA 2008) containing shade-tolerant hardwood trees close to wetland areas. Large woodlots (10 to 100 hectares) can sustain viable red-shouldered hawk populations provided larger raptors do not interfere.

Attention was paid to the presence of red-shouldered hawks calls particularly during the May 16, 2008 field visit. No red-shouldered hawks were heard or seen during field investigations. No nesting raptors were detected in the area of the nests that were detected in April. These nests were considered as probably too small to be red-shouldered hawk nests. No hawk activity was seen in the area of the 3 nest areas (see Figure 3 Snider 2008).

Redheaded woodpeckers live in open woodland and woodland edges, especially in oak savannahs and riparian forest (ROM 2008). No redheaded woodpeckers were seen during field investigations.

There were 40 species of birds detected and these are listed in Table 4. No threatened or endangered species, species of special concern or provincially significant species were detected.

Vascular Plant Survey

The initial environmental impact study (Snider 2008) identified a need to carry out a plant survey during the appropriate time of the year to assess for threatened and endangered species, species of special concern and plant species of provincial significance.

The Pembroke District (Appendix 1 Snider 2008) indicated that American ginseng and butternut are two endangered species that are known to occur in the general area of the waste disposal site. Special attention was given to searching for these two species. Both American ginseng and butternut are at the northern edge (ROM 2008) of their range. No ginseng or butternut were seen during field investigations.

Vascular plant species were identified during work on May 16 and June 19 and 20, 2008. Some species were taken from notes made in April 2008. All of the plant species identified in field investigation are listed in Table 3.

The vegetation communities in which the species were found are listed in Table 3. The vegetation communities are mapped on Figure 3 (Snider 2008) in the preliminary report. The Natural Heritage Information Centre (NHIC 2008) maintains a list of all species of plants found in Ontario as well as the status of the plant species, this information is available on the NHIC website. Table 3 provides the NHIC provincial rarity ranking and global ranking for each species of plant identified in the study area. No provincially rare species that is species with an S Rank of S1, S2 or S3 were identified with all of the species identified being either S5 or S4 species, species that are considered common and secure within the province or SE species which represent alien or exotic species.

A total of 102 species of plants were identified and are listed in Table 3. All of the species identified were S4 or S5 species the most common and secure species or alien or exotic species (SE). Of the total of 102 species identified 25 were exotic or alien species or 25% of the total. Most of the 25 exotic species were located as expected in the old field habitat or the old gravel pit with the natural habitats having a much lower ratio of exotic species. No threatened or endangered species or species of special concern were identified.

A waste disposal site offers the potential for alien plant material coming in with the household waste.

Other Significant Species

The Pembroke District indicated that the southern flying squirrel, milksnake, eastern wolf and monarch butterfly four species of special concern are known to occur in the general area of the waste disposal site. Species of special concern is defined as a species with characteristics that make it sensitive to human activities or natural events. A species of special concern is not necessarily rare.

Mammals detected were all common and expected species (Table 5). Similarly the amphibians and reptiles detected were limited and were common and expected species (Table 6).

The only species of special concern that was detected was the monarch butterfly. Several monarch butterflies were seen in the old field habitat on several occasions. The monarch butterfly can be found in Ontario (ROM 2008) wherever there are milkweed plants for its caterpillars and wildflowers for a nectar source. Monarchs are often found on abandoned farmland and roadsides, but also in city gardens and parks. The eastern North American population migrates to Mexico each fall to overwinter at 12 sites in the central mountains.

The eastern wolf is a smaller form (ROM 2008) of the grey wolf. Recent genetic analyses have shown that it contains both red wolf and coyote genes.The Eastern Wolf is protected under Ontario's Fish and Wildlife Conservation Act, 1997, and hunting and trapping of this wolf are permitted only under a license. In 2004, the eastern wolf was included on the list of Species at Risk in Ontario with a status of Special Concern. No evidence of the eastern wolf was detected. However the eastern wolf is both a secretative and wide ranging species and the study area could be expected to be used by the eastern wolf.

The milksnake is best known for occurring in rural areas, where it is most frequently reported (ROM 2008) in and around buildings, especially old structures. However, it is found in a wide variety of habitats, from prairies, pastures, and hayfields, to rocky hillsides and a wide variety of forest types. Two other important features of good milksnake habitat are proximity to water, and suitable locations for basking and egg-laying. No milksnakes were detected in the study area. However the milksnake is a difficult to detect species.

Southern Flying Squirrels (ROM 2008) inhabit hardwood forests in eastern North America. Dead hollow trees are used as den sites. The southern flying squirrel has been dowlisted and is no longer a species of special concern. No flying squirrels were detected in the study area but this species is a particularly difficult species to detect.

The MNR guidelines on significant wildlife habitat (MNR 2000) provides specific guidelines on interpreting the habitat of species of special concern in Appendix Q3. The guidelines were used to assess the potential of significant wildife habitat specifically for monarch butterfly but also for the eastern wolf, eastern, the southern flying squirrel and the milksnake. Features mentioned in Appendix Q3 (MNR 2000) as indicators of significant habitat include size of species population at the site, degree of rarity of species at the site, documented significant decline in its critical habitat. It was concluded that the habitat of the study area is not critical habitat of the monarch butterfly or the other three secretive species of special concern that may possibly exist on the site.

Fish Habitat

The MNR stated that there was a potential of coldwater tributaries in the vicinity of the waste site and also a potential for spawning fish from Golden Lake using the tributaries in the vicinity of the waste site. Mapping indicated that the tributaries were intermittent and not permanent however mapping can be inaccurate.

The status of the streams were investigated. A licence to collect fish was obtained from the MNR Pembroke District (licence number 1047045). It was intended to use dip nets and set minnow traps to determine the presence and species of fish present. Minnow traps were not set however because not enough water was found to place the traps.

The watercourses were investigated April 15/16, June 20 and July 30, 2008. Collected information is provided in Table 7 and provides information on permanence, water temperatures and other characteristics.

Tributaries identified as 77 and 78 to the west of the waste site were flowing in April and in June but when investigated on July 30, 08 both sites were not flowing. There were pockets of water present and this water was a cool 15°C at both locations on July 30. No fish were seen or aquatic vegetation. Several caddis fly larvae invertebrates were seen in tributary 77. Any pockets of water were searched for fish and invertebrates with a dip net. No fish were seen or caught.

Tributary 121 is downstream of the confluence of the tributaries identified as 77 and 78. There was water flow in this tributary on April 15/16 and June 20 but on July 30 there was no water flowing in the watercourse. There was a small amount of water seeping out of the banks where it came through a swamp on the road right of way. This water was a cool 14°C. However this water was not sufficient to establish a flow in the watercourse. Pockets of water were sampled with a dip net for invertebrates and fish but none were captured and none were seen.

The watercourses of the stream system closest to the proposed waste site represented by numbers 77, 78 and 121 are defined as intermittent watercourses that do not directly provide fish habitat in the vicinity of the road crossing.

The watercourse identified as 122 at the corner of Wolfe Rd and Ruby Rd had a trickle of flow on April 15/16 but no flow when investigated June 20 or July 30, 2000. This watercourse is defined as a ditch that transports surface runoff during storm events. The pond a few metres to the north of where 122 crosses Wolfe Rd is a dug farm pond.

Watercourse identified as 80 at the corner of Wolfe Rd and O'Connor Rd is not a watercourse but only a wet area. No culvert was discovered and no flowing water was seen at any time.

A waterbody is mapped on some maps and is shown on Figure 2 280m to the west of the proposed waste site. This waterbody was not investigated directly but investigated from air photos and observed from the property boundary. The closest water body as shown on Figure 1 was observed to be a shrub swamp. It was not flooded open water during any of the 4 observation time periods.

In conclusion no permanent watercourses were identified there was some coldwater seepage that was not sufficient in July to maintain a flow in a year with above average rainfall. Water courses could provide nutrients and organisms such as invertebrates to downstream fish populations. No fish were seen or captured.

Conclusions

The breeding bird survey did not identify any threatened or endangered species or species of special concern or provincially significant species. Only common and expected bird species were observed in the study area. There was no significant wildlife species detected other than the ubiquitous monarch butterfly.

Butternut and American ginseng, two endangered species, were specifically searched for in the study area and not found. The vascular plant survey did not identify any threatened or endangered species or species of special concern or provincially significant plant species.

It was concluded that there was not critical habitat of a threatened or endangered species or significant wildlife habitat within the study area.

The watercourses next to the disposal site were determined to be intermittent seasonal and did not contain any fish and would not be important fish habitat.

The proposed waste site located within the 33 ha contaminant attenuation zone is located in an area of early successional white pine regeneration and cultural meadow. The area is presently being pastured and did not contain any significant natural heritage features.

References

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Table 3 Vascular Plants Observed in the Ruby Road Study Area

Family	Scientific Name	Common Name	Provincial or S Rank	Vegetation Community
ACERACEAE	Acer pensylvanicum	Striped Maple	S5 (1995-01-01)	4
ACERACEAE	Acer rubrum	Red Maple	S5 (1995-01-01)	2
ACERACEAE	Acer saccharum ssp. saccharum	Sugar Maple	S5 (1995-01-01)	2, 3, 5
ANACARDIACEAE	Rhus typhina	Staghorn Sumac	S5 (1995-01-01)	ogp
APOCYNACEAE	Apocynum androsaemifolium	Spreading Dogbane	S5 (1995-12-19)	1
ARALIACEAE	Aralia nudicaulis	Wild Sarsaparilla	S5 (1995-12-19)	3
ASCLEPIADACEAE	Asclepias syriaca	Kansas Milkweed	S5 (1995-12-19)	1
ASTERACEAE	Antennaria howellii ssp. neodioica	Pussy-toes	SU (1995-12-19)	1
ASTERACEAE	Arctium minus ssp. minus	Common Burdock	SE5 (1995-12-19)	1
ASTERACEAE	Chrysanthemum leucanthemum	Oxeye Daisy	SE5 (1995-12-19)	1
ASTERACEAE	Erigeron strigosus	Daisy Fleabane	S5 (1995-12-19)	1
ASTERACEAE	Hieracium aurantiacum	Orange Hawkweed	SE5 (1995-12-19)	1
ASTERACEAE	Hieracium pilosella	Mouseear	SE5 (1995-12-19)	1
ASTERACEAE	Solidago canadensis var. canadensis	Canada goldenrod	S5 (1997-03-26)	ogp
BETULACEAE	Alnus incana	Speckled Alder	S5 (1995-12-19)	1
BETULACEAE	Betula alleghaniensis	Yellow Birch	S5 (1995-12-19)	4
BETULACEAE	Betula papyrifera	Paper Birch	S5 (1995-12-19)	ogp, 3, 5
BETULACEAE	Ostrya virginiana	Eastern Hop-hornbeam	S5 (1995-12-19)	3
BORAGINACEAE	Echium vulgare	Common Viper's-bugloss	SE5 (1995-12-19)	1
BRASSICACEAE	Erysimum hieraciifolium	European Wallflower	SE5 (1995-12-19)	1
BRASSICACEAE	Lepidium densiflorum	Dense-flower Pepper-grass	SE5 (1995-12-19)	1
CAPRIFOLIACEAE	Lonicera involucrata	Fly Honeysuckle	S5 (1995-12-19)	3
CAPRIFOLIACEAE	Lonicera tatarica	Tartarian Honeysuckle	SE5 (1995-12-19)	1
CAPRIFOLIACEAE	Viburnum acerifolium	Maple-leaf Viburnum	S5 (1995-12-19)	3
CAPRIFOLIACEAE	Viburnum cassinoides	Northern Wild-raisin	S5 (1995-12-19)	1

Table 3 Vascular Plants Observed in the Ruby Road Study Area

Family	Scientific Name	Common Name	Provincial or S Rank	Vegetation Community
CARYOPHYLLACEAE	Cerastium fontanum	Common Mouse-ear Chickweed	SE5 (1995-12-19)	1
CARYOPHYLLACEAE	Dianthus armeria	Deptford-pink	SE5 (1995-12-19)	ogp
CARYOPHYLLACEAE	Silene vulgaris	Maiden's Tears	SE5 (1995-12-19)	1
CONVOLVULACEAE	Calystegia sepium	Hedge Bindweed	S5 (1995-12-19)	3
CUPRESSACEAE	Juniperus communis	Ground Juniper	S5 (1995-12-19)	1
DENNSTAEDTIACEAE	Pteridium aquilinum	Bracken Fern	S5 (1995-12-19)	ogp, 1, 2
DRYOPTERIDACEAE	Athyrium filix-femina var. angustum	Lady Fern	S5 (1995-12-19)	3
DRYOPTERIDACEAE	Deparia acrostichoides	Silvery Spleenwort	S4 (1995-12-19)	3
DRYOPTERIDACEAE	Dryopteris carthusiana	Spinulose Shield Fern	S5 (1995-12-19)	3
DRYOPTERIDACEAE	Dryopteris marginalis	Marginal Wood-fern	S5 (1995-12-19)	3
DRYOPTERIDACEAE	Gymnocarpium dryopteris	Oak Fern	S5 (1995-12-19)	5
DRYOPTERIDACEAE	Matteuccia struthiopteris	Ostrich Fern	S5 (1995-12-19)	5
DRYOPTERIDACEAE	Onoclea sensibilis	Sensitive Fern	S5 (1995-12-19)	1, 3, 5
EQUISETACEAE	Equisetum hyemale ssp. affine	Scouring Rush	S5 (1995-12-19)	1
EQUISETACEAE	Equisetum variegatum	Variegated Horsetail	S5 (1995-12-19)	1
FABACEAE	Lotus corniculatus	Birds-foot Trefoil	SE5 (1995-12-19)	1
FABACEAE	Trifolium aureum	Yellow Clover	SE5 (1995-12-19)	1
FABACEAE	Trifolium pratense	Red Clover	SE5 (1995-12-19)	1
FABACEAE	Trifolium repens	White Clover	SE5 (1995-12-19)	1
FABACEAE	Vicia cracca	Tufted Vetch (Cow Vetch)	SE5 (1995-12-19)	1
FAGACEAE	Fagus grandifolia	American Beech	S5 (1995-12-19)	3, 5
GERANIACEAE	Erodium cicutarium	Pin Clover	SE3 (1995-12-19)	1
GROSSULARIACEAE	Ribes cynosbati	Prickly Gooseberry	S5 (1995-12-19)	1, 2
LAMIACEAE	Prunella vulgaris ssp. lanceolata	Self-heal	S5 (1995-12-19)	1
LILIACEAE	Erythronium americanum	Yellow Trout-lily	S5 (1995-12-19)	3
LILIACEAE	Maianthemum canadense	Wild-lily-of-the-valley	S5 (1995-12-19)	3

Table 3 Vascular Plants Observed in the Ruby Road Study Area

Family	Scientific Name	Common Name	Provincial or S Rank	Vegetation Community
LILIACEAE	Maianthemum stellatum	Starflower False Solomon's-seal	S5 (1995-12-19)	3
LILIACEAE	Streptopus amplexifolius	White Mandarin	S4S5 (1995-12-19)	3
LILIACEAE	Trillium grandiflorum	White Trillium	S5 (1995-12-19)	3
LYCOPODIACEAE	Diphasiastrum digitatum	Fan Club-moss	S5 (1995-12-19)	2, 3
ONAGRACEAE	Oenothera biennis		S5 (1995-12-19)	1
OPHIOGLOSSACEAE	Botrychium virginianum	Rattlesnake Fern	S5 (1995-12-19)	3
ORCHIDACEAE	Epipactis helleborine	Eastern Helleborine	SE5 (1995-12-19)	3
OROBANCHACEAE	Epifagus virginiana	Beechdrops	S5 (1995-12-19)	3
OSMUNDACEAE	Osmunda claytoniana	Interrupted Fern	S5 (1995-12-19)	5
PINACEAE	Abies balsamea	Balsam Fir	S5 (1995-12-19)	1, 2, 3
PINACEAE	Pinus strobus	Eastern White Pine	S5 (1995-12-19)	2, 5
PINACEAE	Tsuga canadensis	Eastern Hemlock	S5 (1995-12-19)	3, 4
POACEAE	Danthonia spicata	Poverty Oatgrass	S5 (1995-12-19)	1
POACEAE	Festuca rubra	Red Fescue	S5 (1995-12-19)	1
POACEAE	Lolium perenne var. perenne	Perrenial ryegrass	SE4 (1997-03-26)	1
POACEAE	Oryzopsis asperifolia	White-grained Mountain-ricegrass	S5 (1995-12-19)	2
POACEAE	Poa compressa	Canada Bluegrass	SE5 (2001-11-26)	1
POACEAE	Poa pratensis	Kentucky Bluegrass	S5 (1996-06-20)	1, 2
PRIMULACEAE	Trientalis borealis	Northern Starflower	S5 (1995-12-19)	3
PYROLACEAE	Pyrola chlorantha	Greenish-flowered Wintergreen	S4S5 (1995-12-19)	3
RANUNCULACEAE	Actaea rubra	Red Baneberry	S5 (1995-12-19)	3
RANUNCULACEAE	Anemone virginiana	Virginia Anemone	S5 (1995-12-19)	1
RANUNCULACEAE	Clematis virginiana	Virginia Virgin-bower	S5 (1995-12-19)	1
RANUNCULACEAE	Ranunculus acris	Tall Butter-cup	SE5 (1995-12-19)	1
ROSACEAE	Amelanchier laevis	Allegheny Service-berry	S5 (1995-12-19)	1
ROSACEAE	Aruncus dioicus	Common Goatsbeard	SE1 (1995-12-19)	1

Table 3 Vascular Plants Observed in the Ruby Road Study Area

Family	Scientific Name	Common Name	Provincial or S Rank	Vegetation Community
ROSACEAE	Crataegus chrysocarpa var. aboriginum	A Hawthorn	S4? (1996-06-28)	1
ROSACEAE	Crataegus mollis	Downy Hawthorn	S5 (1995-12-19)	ogp
ROSACEAE	Fragaria vesca	Woodland Strawberry	S5 (1995-12-19)	3
ROSACEAE	Fragaria virginiana	Virginia Strawberry	S5 (1995-12-19)	ogp
ROSACEAE	Malus pumila	Common Apple	SE5 (1995-12-19)	1
ROSACEAE	Potentilla argentea	Silvery Cinquefoil	SE5 (1995-12-19)	ogp, 1
ROSACEAE	Prunus serotina	Wild Black Cherry	S5 (1995-12-19)	3
ROSACEAE	Rosa blanda	Smooth Rose	S5 (1995-12-19)	ogp, 1, 3
ROSACEAE	Rubus allegheniensis	Allegheny Blackberry	S5 (1995-12-19)	ogp, 1
ROSACEAE	Rubus idaeus ssp. melanolasius	Wild Red Raspberry	S5 (1996-06-24)	1, 3
ROSACEAE	Rubus odoratus	Purple Flowering Raspberry	S5 (1995-12-19)	3
ROSACEAE	Spiraea alba	Narrow-leaved Meadow-sweet	S5 (1995-12-19)	1
RUBIACEAE	Galium aparine	Catchweed Bedstraw	S5 (1995-12-19)	2
RUBIACEAE	Mitchella repens	Partridge-berry	S5 (1995-12-19)	3
SALICACEAE	Populus grandidentata	Large-tooth Aspen	S5 (1995-12-19)	ogp, 2, 3, 5
SALICACEAE	Populus tremuloides	Trembling Aspen	S5 (1995-12-19)	2, 3, 4
SALICACEAE	Salix bebbiana	Bebb's Willow	S5 (1995-12-19)	1
SALICACEAE	Salix petiolaris	Meadow Willow	S5 (1995-12-19)	1
SCROPHULARIACEAE	Verbascum thapsus	Great Mullein	SE5 (1995-12-19)	1
THYMELAEACEAE	Dirca palustris	Eastern Leatherwood	S4? (1995-12-19)	3
TILIACEAE	Tilia americana	American Basswood	S5 (1995-12-19)	3, 5
ULMACEAE	Ulmus americana	American Elm	S5 (1995-12-19)	1
URTICACEAE	Urtica dioica ssp. gracilis	Nettle	S5 (1995-12-19)	3
VERBENACEAE	Verbena stricta	Hoary Vervain	S4 (1995-12-19)	1
VITACEAE	Parthenocissus vitacea	Virginia Creeper	S5 (2000-09-20)	ogp

Table 4. Birds Observed in the Ruby Road Study Area

Bird Species	Dates Observed	Highest Breeding Evidence	Global Ranking	Provincial Ranking
Mallard	A16	Observed	G5	S5B,SZN
Ring-billed Gull	A15	Observed	G5	S5B,SZN
Common Snipe	A16	Possible	G5	S5B,SZN
Ruffed Grouse	A15 M16	Possible	G5	S5
Wild Turkey	A15	Possible	G5	S4
Sharp-shinned Hawk	J20	Possible	G5	S5B,SZN
Broad-winged Hawk	M16	Possible	G5	S5B,SZN
Turkey Vulture	M16	Observed	G5	S4B,SZN
American Kestrel	A16 X	Probable	G5	S5B,SZN
Pileated Woodpecker	A16	Observed	G5	S4S5
Northern Flicker	A16 M16	Probable	G5	S5B,SZN
Yellow-bellied Sapsucker	A15 M16, J20	Probable	G5	S5B,SZN
Hairy Woodpecker	A16	Possible	G5	S5
Great-crested Flycatcher	J20	Possible	G5	S5B,SZN
Eastern Kingbird	M16 Jly30	Probable	G5	S5B,SZN
Eastern Wood Pewee	J20	Possible	G5	S5B,SZN
Tree Swallow	M16	Possible	G5	S5B,SZN
American Crow	A16	Observed	G5	S5B,SZN
Blue Jay	M16	Observed	G5	S5
Black-capped Chickadee	A15, J20	Probable	G5	S5
White-breasted Nuthatch	A15 M16	Probable	G5	S5
Gray Catbird	M16	Possible	G5	S5B,SZN
Brown Thrasher	M16	Possible	G5	S5B,SZN
American Robin	A15 M16	Probable	G5	S5B,SZN
Hermit Thrush	M16	Probable	G5	S5B,SZN
Veery	J19	Possible	G5	S4B,SZN
Cedar Waxwings	J20	Observed	G5	S5B,SZN
Red-eyed Vireo	J20	P	G5	S5B,SZN
Black-throated Blue Warbler	M16	Possible	G5	S5B,SZN
Yellow-rumped Warbler	M16 J19	Possible	G5	S5B,SZN
Oven Bird	M16 J19	Possible	G5	S5B,SZN
Red-winged Blackbird	M16	Observed	G5	S5B,SZN
Common Grackle	M16, J20	Possible	G5	S5B,SZN
Eastern Meadowlark	A15	Probable	G5	S5B,SZN
Northern Juncoe	A15	Observed	G5	S5B,SZN
Indigo Bunting	J19	Probable	G5	S5B,SZN
Rose-breasted Grosbeak	J20	Probable	G5	S5B,SZN
Chipping Sparrow	M16	Probable	G5	S5B,SZN
Song Sparrow	A16 M16	Probable	G5	S5B,SZN
Vesper Sparrow	J19 Jly 30	Probable	G5	S4B,SZN

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Table 5. Mammals Detected on the Ruby Road Study Area

Species	Date	Community	Global Rank	Provincial Rank
Red Fox	April 15	OGP	G5	S5
White-tailed deer	April 15 June 19	3,1	G5	S5
Woodchuck	April 15	OGP	G5	S5
Snowshoe Hare	April 15	3	G5	S5
Porcupine	April 16	3, 4	G5	S5
American Black Bear	June 19	1, 3, OGP	G5	S5
Red Squirrel	June 19	2, 3	G5	S5
Striped Skunk	June 19	OGP	G5	S5

Table 6. Amphibians and Reptiles on the Ruby Road Study Area

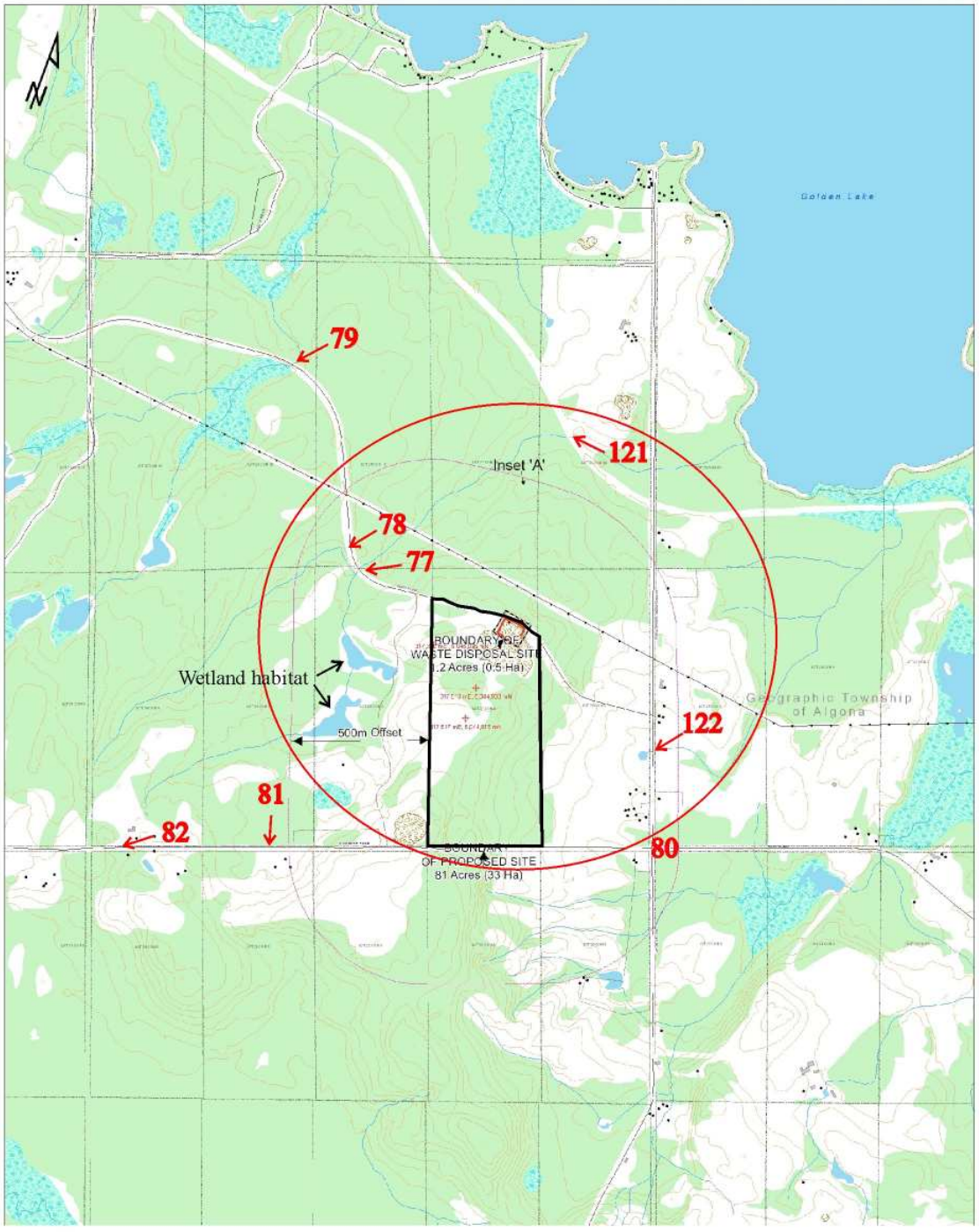
Species	Date Seen	Community	Global Rank	Provincial Rank
Gray tree frog	June 19	3	G5	S5
American toad	June 20	3	G5	S5
Northern leopard frog	July 30	1	G5	S5
Wood frog	July 30	3	G5	S5
Painted turtle	July 30	Watercourse 79	G5T5	S5

Table 7. Watercourse Characteristics in the Vicinity of the Ruby Road Study Area

Site number	Culvert diameter	Watercourse conditions April 15, 16, 08	Watercourse conditions June 20, 08	Watercourse conditions July 30, 08	Comments
77	36" (91.4cm)	5 cm of flowing clear water	Water flowing through culvert Caddis fly larvae found. 14°C	Stream bed dry at Ruby Road. Downstream some water in stream bed. Water 15°C No fish seen.	Intermittent stream. With seasonal spring activity. No direct fish habitat. with Channel present, clear water
78	36" (91.4cm)	10 cm of flowing clear water	Water flowing through culvert. Flooded terrestrial plants. No aquatic plants no invertebrates. Water 11°C	No water flow, a few pockets of standing water. Water 15°C. No fish seen.	Intermittent stream. With seasonal spring activity. No direct fish habitat Channel present, clear water
122	40" (101.6 cm)	trickle	No water flow	Culvert dry, wet pasture below culvert. Water in nearby dug pond	Seasonal storm waters. No Direct fish habitat. Best characterized as a grassy swale
80	No culvert seen could be hidden	Wet area but no detectable flow	No water flow	No water. Area moist but no flowing or standing water	Seasonal water only. Not fish habitat. wet area with no channel
121	29" (73.7cm)	Quarter full	Water flowing. No invertebrates no fish seen. Water 14°C	No stream flow but small amount of water coming from marsh. Water 14°C. No fish no invertebrates	Intermittent stream. With seasonal spring activity. No direct fish habitat Channel present, clear water

Figure 1 taken from Snider 2008

Figure 1. Location map of the Ruby Road Waste Disposal Area



Waste disposal site and potential lands of purchase

500 m

1 km radius from proposed waste site

82 Location of watercourse crossing

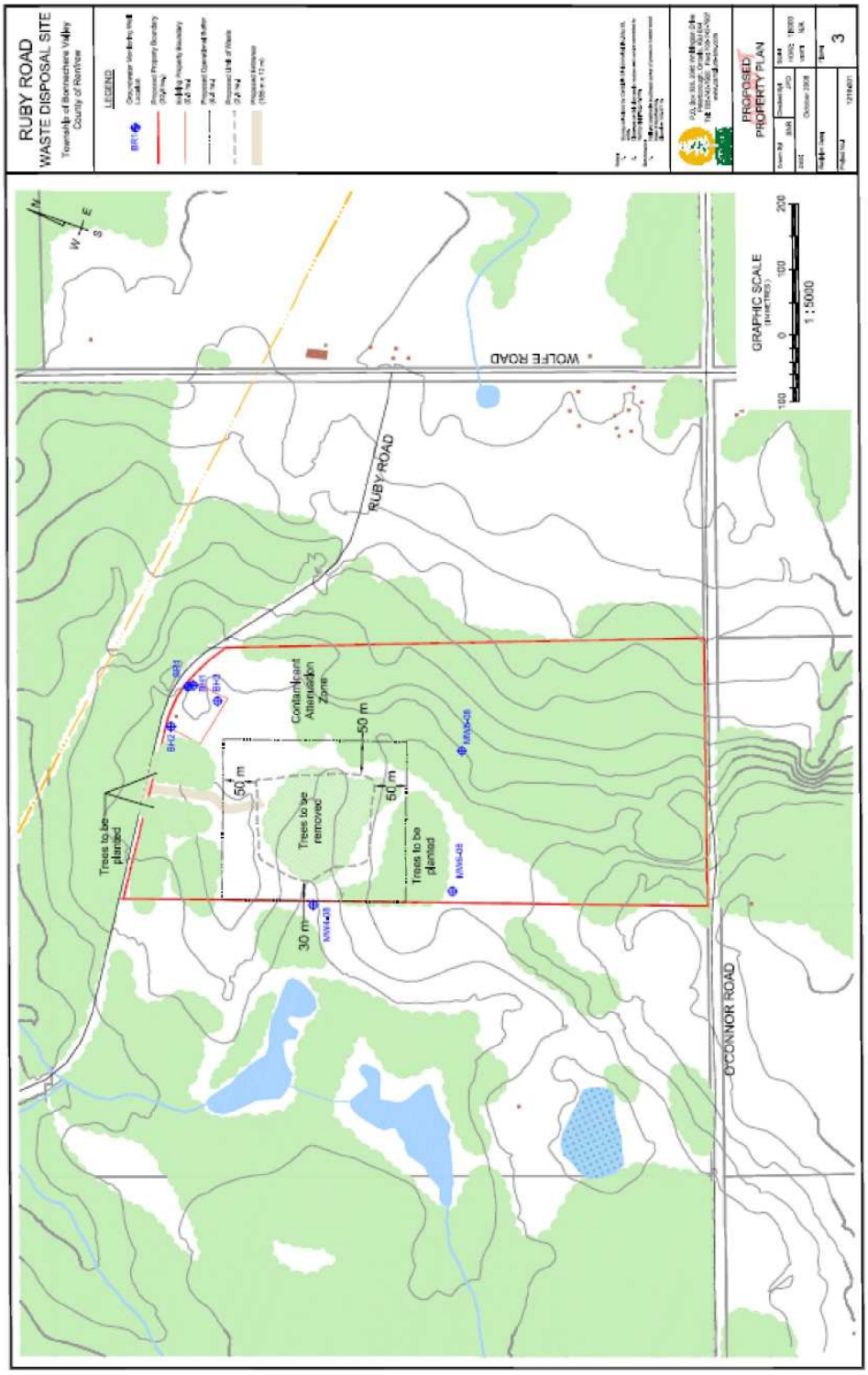


Figure 2. Location of the Ruby Road Waste Disposal Site