

Summary Review of Bowesville Maintenance Yard and Storage Facility Prepared by Albert Dugal

BOWESVILLE ROAD WOODS LRT SITE

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The Bowesville Road Woods consists of three parts - two young sections (originating from abandoned fields) dominated by Gray Birch, *Betula populifolia*, on the north and south side of a much older section. Since the older section of the woodland is the part that will be most impacted by the LRT system, this study was confined to that area.

OLDER PART OF WOODLAND

Comments

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This is clearly a lowland woodland. Prior to settlement by Europeans in the 19th century, it was part of an extensive treed wetland. The flora indicates that much of the woods would be classified as wetland. Ferns, such as Sensitive Fern, *Onoclea sensibilis* and Interrupted Fern, *Osmunda claytoniana*, are very abundant and cover a significant portion of the forest floor, indicating a high moisture content in the soil. The 1989 aerial photo No. A27398 shows a high soil moisture regime in the area, an indication of the past wetland nature of the low-lying and fairly flat terrain. Another indication of wetland is the fact that in parts of the woodland water lies on the ground from late fall to late spring, very evident in the south western part. Adjacent to this south western part, the firm of Marshall, Macklin and Monaghan have indicated a wetland area. Based on my observations of wetland regeneration, I would suggest that the newer sections of woodland (to the north and south) are in the process of reverting back to treed wetland.

The woodland is dominated by Trembling Aspen, *Populus tremuloides*, and Red Maple, *Acer rubrum*. Other tree species noted include Balsam Poplar, *Populus balsamifera*, Red Ash, *Fraxinus pennsylvanica*, White Spruce, *Picea glauca*, White Pine, *Pinus strobus*, Cedar, *Thuja occidentalis*, White Birch, *Betula papyrifera*, Yellow Birch, *Betula alleghaniensis*, Service berry, *Amelanchier laevis*, Black Cherry, *Prunus serotina*, Silver Maple, *Acer saccharinum*, Bur Oak, *Quercus macrocarpa*, Beech, *Fagus grandifolia*, Basswood, *Tilia americana*, (1) and Sugar maple, *Acer saccharum* (1).

Throughout much of the woodland are impressive specimens of mature Trembling Aspen (probably in the 60 to 80 year range). Along the fence row at the southern edge of the woodland were a number of ancient, Red Maples, probably over 150 years old, with branching near the base of the trunk indicating that these trees were once surrounded by cleared land either due to land cultivation (to the south) or lumbering (to the north). An elderly Red Ash, perhaps as old as 150 years, and a large Serviceberry (about 25 feet high with a 10 inch diameter) were also noted along the southern fence line. North of the southern limit of the old woodland there were a number of trees in the 80 to 100 year range including many Red Maple, 2 Yellow Birch, a couple of Silver Maple, a couple of White Pine, 2 White Birch and a Black Cherry that was about 18

inches across (about 3 feet above the ground). Scattered throughout the woodland were a few Red Maple trees more than 100 years old - one appeared to be about 150 years old.

Black Buckthorn, *Rhamnus frangula*, is the dominant under story shrub.

Most of the woodland is not densely shaded (fairly open), probably due to a long history of grazing by cattle. (The woods were full of trails and there is a scarcity of young hardwood trees, a common feature of grazed woodlots). Consequently, there is an abundance of herbaceous plants.

The woodland contains a large population of *Carex debilis*, a Regionally Significant vascular Plant species, as well as 13 species of Regionally Uncommon vascular plants. I must admit that, on first glance, I did not expect to find so many plants with some degree of significance.

The fact that the 1923 topographic map did not show the woodland puzzled me, as there were, as indicated by their age, trees present in the woodland area at the time. The diverse flora also suggests the ongoing presence of a woodland. (Based on the distances to the closest woodlots circa 1923, it would have taken many decades, due to the various methods of seed dispersal, to re-establish such a flora). Viewing the 1945 aerial photo stereo pairs (A9557-24 & -25 and A9609-88 & -89), was most helpful. The stereo pairs showed a woodland that had been lumbered over time, with patches of trees and areas with shrubs and/or herbaceous plants. One set of aerials showed 5 older trees scattered throughout the northern 2/3 of the woodland. Obviously, this woodland was in existence in 1923.

A list of the vascular plants observed to date is appended below.

Albert W. Dugal

Vascular Plants of the Older Section of the Bowesville Woods

EQUISETACEAE

Equisetum arvense

Equisetum sylvaticum

OSMUNDACEAE

Osmunda claytoniana **Uc.**

Osmunda regalis

POLYPODIACEAE

Athyrium filix-femina

Dryopteris cristata **Uc.**

Dryopteris spinulosa

Onoclea sensibilis

Pteridium aquilinum

Thelypteris palustris

PINACEAE

Picea glauca
Pinus strobus

CUPRESSACEAE

Thuja occidentalis

ALISMATACEAE

Alisma triviale

POACEAE

Agrostis stolonifera
Dactylis glomerata
Echinocloa sp.
Glyceria striata
Phalaris arundinacea
Phleum pratense
Poa palustris
Poa pratensis

CYPERACEAE

Carex bebbii
Carex crinita
Carex debilis **R.S.**
Carex gracillima
Carex intumescens
Carex lupulina
Carex projecta **Uc.**
Carex rosea
Carex vulpinoidea
Scirpus atrovirens
Scirpus cyperinus

ARACEAE

Arisaema triphyllum

JUNCACEAE

Juncus bufonius
Juncus effusus
Juncus tenuis

LILIACEAE

Maianthemum canadense
Trillium sp. (*erectum* or *cernuum*)

ORCHIDACEAE

Epipactis helleborine
Platanthera lacera **Uc.**

SALICACEAE

Populus balsamifera
Populus tremuloides
Salix bebbiana

BETULACEAE

Alnus rugosa
Betula alleghaniensis
Betula papyrifera

FAGACEAE

Fagus grandifolia (a couple, oldest about 30 years)
Quercus macrocarpa (several, the oldest about 30 years)

ULMACEAE

Ulmus americana

CANNABACEAE

Cannabis sativa (5 plants noted)

URTICACEAE

Pilea pumila
Urtica dioica

POLYGONACEAE

Polygonum cilinode
Polygonum hydropiper
Polygonum pensylvanicum
Rumex crispus

CARYOPHYLLACEAE

Cerastium sp.
Silene vulgaris
Stellaria graminea

RANUNCULACEAE

Actaea rubra
Anemone virginiana
Clematis virginiana
Ranunculus abortivus
Ranunculus acris

CRUCIFERAE (BRASSICACEAE)

Alliaria officinalis

SAXIFRAGACEAE

Ribes cynosbati

ROSACEAE

Agrimonia gryposepala

Amelanchier laevis (tree, several impressive specimens)

Fragaria virginiana

Geum aleppicum

Geum canadense

Malus sylvestris

Potentilla simplex **Uc.**

Potentilla norvegica

Prunus virginiana

Rosa acicularis

Rubus alleghaniensis

Rubus pubescens

Rubus strigosus

Spiraea alba

Spiraea tomentosa

LEGUMINOSAE (FABACEAE)

Lotus corniculatus

Trifolium hybridum

Trifolium pratense

Trifolium repens

Vicia cracca

OXALIDACEAE

Oxalis sp. (yellow flowered)

EUPHORBIACEAE

Acalypha rhomboidea

ANACARDIACEAE

Rhus radicans

ACERACEAE

Acer rubrum

Acer saccharinum

Acer saccharum (one tree on higher ground)

BALSAMINACEAE

Impatiens capensis

RHAMNACEAE

Rhamnus cathartica

Rhamnus frangula

VITACEAE

Parthenocissus vitacea

Vitis riparia

TILIACEAE

Tilia americana (one tree noted, 40-50 years old)

HYPERICACEAE

Hypericum perforatum

VIOLACEAE

Viola sororia

LYTHRACEAE

Lythrum salicaria

ONAGRACEAE

Circaea lutetiana

Epilobium ciliatum

Epilobium coloratum **Uc.**

ARALIACEAE

Aralia nudicaulis

Aralia racemosa **Uc.**

UMBELLIFERAE (APIACEAE)

Daucus carota

Osmorhiza claytonii

Pastinaca sativa

CORNACEAE

Cornus alternifolia (small)

Cornus stolonifera

PYROLACEAE

Pyrola elliptica

OLEACEAE

Fraxinus pennsylvanica

GENTIANACEAE

Gentiana andrewsii **Uc.**

APOCYNACEAE

Apocynum androsaemifolium

VERBENACEAE

Verbena hastata

LABIATAE (LAMIACEAE)

Galeopsis tetrahit

Lycopus americanus

Lycopus uniflorus

Prunella vulgaris

SOLANACEAE

Solanum dulcamara

SCROPHULARIACEAE

Agalinis tenuifolia **Uc.**

Veronica officinalis

PLANTAGINACEAE

Plantago sp.

RUBIACEAE

Galium mollugo

Galium palustre

Galium triflorum

CAPRIFOLIACEAE

Diervilla lonicera

Sambucus canadensis (young) **Uc.**

Viburnum trilobum **Uc.**

LOBELIACEAE

Lobelia inflata

COMPOSITAE (ASTERACEAE)

Achillea millefolium

Ambrosia artemisiifolia

Arctium minus

Aster cordifolius

Aster lanceolatus
 Aster lateriflorus
 Aster novae-angliae (western edge of woods)
 Aster umbellatus
 Bidens frondosa
 Erigeron annuus
 Erigeron philadelphicus
 Eupatorium perfoliatum
 Eupatorium maculatum
 Gnaphalium uliginosum (western edge of woods)
 Hieracium sp.
 Lactuca biennis **Uc.**
 Lactuca canadensis
 Rudbeckia hirta
 Solidago canadensis
 Solidago gigantea **Uc.**
 Solidago graminifolia (western edge of woods)
 Solidago nemoralis (western edge of woods)
 Solidago rugosa

APPENDIX A

Important Vascular Plants of Bowesville Road Woods LRT Site

Regionally Significant

Carex debilis	Weak Sedge
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Regionally Uncommon

Osmunda claytoniana	Interrupted Fern
Dryopteris cristata	Crested Woodfern
Carex projecta	Spreading Sedge
Platanthera lacera	Ragged-fringed Orchid
Potentilla simplex	Common Cinquefoil
Epilobium coloratum	Purple-leaved Willow-herb
Aralia racemosa	Spikenard
Gentiana andrewsii	Bottle Gentian
Agalinis tenuifolia	Slender Gerardia
Sambucus canadensis	Canada Elderberry
Viburnum trilobum	Highbush-cranberry
Lactuca biennis	Blue-lettuce
Solidago gigantea	Giant Goldenrod

Note: Significance ratings for vascular plants derived from URBAN NATURAL AREAS ENVIRONMENTAL EVALUATION STUDY, APPENDIX A - Vascular Plants of the City of Ottawa, with Identification of Significant Species.

**PRELIMINARY LIST OF VASCULAR PLANTS OF THE PROPOSED LRT MAINTENANCE
YARD SITE NEAR BOWESVILLE ROAD**

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OLD MEADOW
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The old meadow has been in agricultural use for a long period of time, probably over 150 years. The Belden Atlas of Carleton County (1879) indicates 3 farmsteads along the stretch of High Road between Bowesville Road and the CPR tracks.

The meadow is well drained in the high area next to High Road and moderately to poorly drained toward the west, especially adjacent to the woodland area. The variable water regimes in the meadow promotes a good diversity of plant species, both native and introduced.

EQUISETACEAE

Equisetum arvense

POLYPODIACEAE

Onoclea sensibilis

POACEAE

Agropyron repens

Agrostis gigantea

Agrostis stolonifera

Alopecurus aequalis **Uc.**

Bromus inermis

Dactylis glomerata

Festuca rubra **Uc., #**

Phalaris arundinacea

Phleum pratense

Poa compressa

Poa pratensis

CYPERACEAE

Carex debilis **R.S.**

Carex scoparia **R.S.**

Carex vulpinoidea

Carex species

Scirpus atrovirens

JUNCACEAE

Juncus effusus

Juncus tenuis

ORCHIDACEAE

Platanthera lacera **Uc.**

SALICACEAE

Salix bebbiana

Salix petiolaris

BETULACEAE

Betula populifolia

ULMACEAE

Ulmus americana (young)

POLYGONACEAE

Rumex crispus

Rumex acetosella

Polygonum sp.

CARYOPHYLLACEAE

Cerastium sp.

Dianthus armeria

Silene vulgaris

Stellaria graminea

RANUNCULACEAE

Ranunculus acris

CRUCIFERAE (BRASSICACEAE)

Berteroa incana

Erysimum cheiranthoides

Lepidium

ROSACEAE

Fragaria virginiana

Geum aleppicum

Potentilla argentea

Potentilla norvegica

Potentilla recta

Potentilla simplex **Uc.**

Rubus alleghaniensis

Spiraea alba

Spiraea tomentosa **Uc.**

LEGUMINOSAE (FABACEAE)

Lotus corniculatus

Trifolium agrarium

Trifolium hybridum
Trifolium pratense
Trifolium repens
Vicia cracca

ACERACEAE

Acer rubrum (young)
Acer saccharum (1 old tree on high ground near High Road)

RHAMNACEAE

Rhamnus frangula

HYPERICACEAE

Hypericum perforatum

LYTHRACEAE

Lythrum salicaria

ONAGRACEAE

Oenothera perennis **Uc.**

UMBELLIFERAE APIACEAE)

Daucus carota

VERBENACEAE

Verbena hastata

LABIATAE (LAMIACEAE)

Lycopus americanus
Lycopus uniflorus
Prunella vulgaris

SCROPHULARIACEAE

Penstemon digitalis
Verbascum thapsus

PLANTAGINACEAE

Plantago major

RUBIACEAE

Galium palustre

COMPOSITAE (ASTERACEAE)

Achillea millefolium
Ambrosia artemisiifolia

Aster lanceolatus
Aster novae-angliae
Chrysanthemum leucanthemum
Conyza canadensis
Erigeron annuus
Erigeron strigosus
Eupatorium maculatum
Eupatorium perfoliatum
Rudbeckia hirta
Solidago altissima
Solidago canadensis
Solidago gigantea **Uc.**
Solidago graminifolia
Solidago nemoralis
Solidago rugosa
Taraxacum officinale

APPENDIX A

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Important Vascular Plants of the

Old Meadow

Bowesville LRT Site

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Regionally Significant

Carex debilis

Carex scoparia

Regionally Uncommon

Alopecurus aequalis

Festuca rubra #

Platanthera lacera

Potentilla simplex

Spiraea tomentosa

Oenothera perennis

Solidago gigantea

Note: Significance ratings for vascular plants derived from URBAN NATURAL AREAS ENVIRONMENTAL EVALUATION STUDY, APPENDIX A - Vascular Plants of the City of Ottawa, with Identification of Significant Species.

THE OVAL-SHAPED WETLAND AT BASE OF HILL

At the base of the hill, which crests near High Road, is an oval-shaped wetland. This wetland, which measures approximately 79 metres by 47 metres, is located in a shallow depression. Whether the depression is natural or man-made is of little consequence because by 1945 - according to aerial photos - wetland vegetation was well developed. In the last decade, the eastern quarter was dredged creating a pond that is beneficial to wildlife - frogs, ducks (a family of baby ducks with mother noted) Great Blue Heron tracks noted as well as a small shorebird, turtles, etc.. The earth from the excavation was piled in a linear sequence -with one break- across the wetland. An interesting mix of weedy and native wetland plants (which survived the digging) are growing on the mounds. The flora of this little wetland is quite diverse, containing 4 Regionally Significant plants and 7 Regionally Uncommon plant species.

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POLYPODIACEAE

Onoclea sensibilis
Thelypteris palustris

ALISMATACEAE

Alisma triviale
Sagittaria latifolia

POACEAE

Agrostis gigantea
Arostis stolonifera
Alopecurus
Bromus inermis
Echinocloa sp.
Glyceria borealis **Uc.**
Glyceria grandis
Phalaris arundinacea
Phleum pratense
Poa annua
Poa compressa
Poa palustris
Poa pratensis

CYPERACEAE

Eleocharis obtusa
Carex crawfordii **R.S.**
Carex lupulina
Carex retrorsa
Carex scoparia **R.S.**
Carex vesicaria **Uc.**

Scirpus atrovirens
Scirpus cyperinus

LEMNACEAE

Lemna minor

JUNCACEAE

Juncus bufonius
Juncus effusus
Juncus tenuis

SALICACEAE

Populus tremuloides
Salix amygdaloides **Uc.**
Salix petiolaris

ULMACEAE

Ulmus americana (baby)

URTICACEAE

Urtica dioica

POLYGONACEAE

Polygonum achoraceum
Polygonum amphibium
Polygonum aviculare
Polygonum lapathifolium
Polygonum pensylvanicum
Rumex acetosella
Rumex crispus

CHENOPODIACEAE

Chenopodium album (on disturbed ground due to recent dredging)

CARYOPHYLLACEAE

Cerastium sp.
Silene vulgaris *
Stellaria graminea

RANUNCULACEAE

Ranunculus acris
Ranunculus pensylvanicus **R.S.**

CRUCIFERAE (BRASSICACEAE)

Capsella bursa pastoris *
Cardamine pensylvanica

Lepidium densiflorum *
Rorippa islandica

ROSACEAE

Amelanchier sp. (young)
Potentilla argentea *
Potentilla norvegica

LEGUMINOSAE (FABACEAE)

Trifolium hybridum
Trifolium repens
Vicia cracca

EUPHORBIACEAE

Acalypha rhomboidea

AQUIFOLIACEAE

Ilex verticillata

ACERACEAE

Acer negundo

RHAMNACEAE

Rhamnus cathartica (1, small)
Rhamnus frangula (1, small)

VITACEAE

Parthenocissus vitacea
Vitis riparia

HYPERICACEAE

Hypericum mutilum **R.S.**
Triadenum fraseri

ONAGRACEAE

Oenothera biennis *

UMBELLIFERAE (APIACEAE)

Cicuta bulbifera
Sium suave

OLEACEAE

Fraxinus pennsylvanica

ASCLEPIADACEAE

Asclepias syriaca

VERBENACEAE

Verbena hastata

LABIATAE (LAMIACEAE)

Lycopus americanus

Lycopus uniflorus

Mentha arvensis

Prunella vulgaris

Scutellaria lateriflora

SOLANACEAE

Solanum dulcamara

Solanum americanum

SCROPHULARIACEAE

Lindernia dubia

Mimulus ringens

Veronica scutellata **Uc.**

PLANTAGINACEAE

Plantago major

RUBIACEAE

Galium palustre

Galium tinctorium **Uc.**

Galium trifidum **Uc.**

LOBELIACEAE

Lobelia inflata

COMPOSITAE (ASTERACEAE)

Achillea millefolium

Ambrosia artemisiifolia

Bidens cernua

Cirsium arvense *

Cirsium vulgare

Conyza canadensis

Gnaphalium uliginosa **Uc., #** (on disturbed ground due to dredging)

Lactuca serriola *

Matricaria matricarioides *

Solidago rugosa

LEGEND

R.S. - Regionally Significant

Uc. - Regionally Uncommon

- Introduced (Non-native)

*** - On mound of soil from excavation of eastern part of wetland**

APPENDIX A

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Important Vascular Plants of the **OVAL-SHAPED WETLAND AT BASE OF HILL** **Bowesville LRT Site**

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Regionally Significant

Carex crawfordii

Carex scoparia

Ranunculus pensylvanicus

Hypericum mutilum

Regionally Uncommon

Glyceria borealis

Carex vesicaria

Salix amygdaloides

Veronica scutellata

Galium tinctorium

Galium trifidum

Gnaphalium uliginosa #

Note: Significance ratings for vascular plants derived from URBAN NATURAL AREAS ENVIRONMENTAL EVALUATION STUDY, APPENDIX A - Vascular Plants of the City of Ottawa, with Identification of Significant Species.