

Study Site NL-01

Fireman's Park

Municipality Niagara-on-the-Lake

Formerly Fireman's Park/ St. David's Waterworks (Brady, et al., 1980)

Approximate Area 187 hectares

Watershed The drainage of this site is complex. It drains south to the Welland Canal subwatershed. It drains south and west to Six Mile Creek/ Airport Drain, and north and east to Four Mile Creek.

Ownership Private – Stamford Volunteer Firefighters and others

Public – City of Niagara Falls

General Summary

This study site is located in the municipality of Niagara-on-the-Lake near the border with Niagara Falls. It is bound on the north by General Brock Parkway also known as Highway 405, and on the south by Mountain Road. The eastern boundary is Stanley Avenue, and the Queen Elizabeth Way is the western boundary.

One of the largest properties visited is locally known as Fireman's Park since it is owned by the Stamford Volunteer Firefighters. This area and the area surrounding the park that is publically owned has also been studied in some detail by the local naturalist club.

Physical Description

This natural area is situated on a height of land of the Niagara Escarpment. The northern portion of the study site is characterized by shallow soils over the shale, sandstone, dolostone, and limestone of the Clinton-Cataract Formation.

The southern portion is characterized by the shale, dolostone, and limestone of the Lockport Formation. In areas associated with the slopes south of the escarpment, deeper till moraine soils are evident.

Soils

Soil Type	Percentage of Study Site
ALLUVIUM	2.92
BENNINGTON	0.38
BEVERLY	0.26
BRANT	5.88
BRANT - RED PHASE	13.35
CASHEL	0.36
CHINGUACOUSY	0.36
CHINGUACOUSY - LOAMY PHASE	0.92
ESCARPMENT	4.36
FLOODPLAIN	1.18
FONTHILL	0.11
GRIMSBY	1.03
MALTON - RED PHASE	2.08

ONEIDA	0.39
ONEIDA - RED PHASE	10.70
ONEIDA - WASHED PHASE	2.16
PEEL	0.08
PEEL - LOAMY RED PHASE	0.90
PEEL - RED PHASE	2.70
RIDGEVILLE	0.11
TAVISTOCK - RED PHASE	1.06
TUSCOLA - RED PHASE	0.09
WATER	0.00
NOT MAPPED	48.59
Total %	100.00

Ecological Land Classification

Summary

The dominant community in this study site was described as a Sassafras (*Sassafras albidum*) Deciduous Forest with fresh to moist characteristics in some areas and drier in others.

Other areas within the confines of Fireman's Park were very complex due to the diversity of topography found in the area making it very difficult to classify into communities. The site contained a complex of toe slope, mid slope, upper slope and crest communities which represent different moisture regimes depending on their position.

The driest communities found at the upper reaches were composed of Black Oak (*Quercus velutina*), or Bitternut Hickory (*Carya cordiformis*) dominated forests with a mix of other oak species, and Black Cherry (*Prunus serotina*).

The middle of the slopes were the areas of the dominant Sassafras community and the lower slopes were composed of largely Bitternut Hickory with associated Black Walnut (*Juglans nigra*), and Green Ash (*Fraxinus pennsylvanica*) with some mixing in the transition areas between communities.

The presence of prairie and savanna species such as Big Bluestem Grass (*Abdropogon gerardii*), Hairy Bush clover (*Lespedeza hirta*), Butterfly Milkweed (*Asclepias tuberosa*), and Black Oak (one of the dominants in some areas) would indicate a historical presence of prairie and savanna communities. A look at 1934 air photos confirmed the absence of forest in this area.

In areas of the study site where the mowing along the creek has stopped, there were wet Meadow Marsh communities mixed with dry meadow communities. The Meadow Marshes were dominated by Spotted Touch-me-nots (*Impatiens capensis*) and Green Ash. There were also some pockets of Cattails (*Typha sp.*) throughout.

The drier Meadow communities noted were a mix of Raspberries (*Rubus sp.*), Pointed-leaved Tick-trefoil (*Desmodium glutinosum*), Hairy Bush-clover (*Lespedeza hirta*),

Goldenrods (*Soidago sp.*), and Asters (*Aster sp.*) with Black Walnut throughout.

Another interesting community noted for this study site was found on the talus slope of the Niagara Escarpment. The parent material was right at the surface making it impossible to determine the soil characteristics. The slopes were steep with many boulders of all shapes and sizes right at the surface. The NAI team did their best to classify this site although it did not meet the characteristic talus community as outlined in the ELC manual.

Vegetation Communities

There are a total of 320 recorded taxa (unique plant records) for this study site.

Community Series

Deciduous Forest (FOD)
Deciduous Thicket (THD)
Graminoid Meadow (MEG)
Meadow Marsh (MAM)
Mixed Meadow (MEM)
Shallow Marsh (MAS)
Thicket Swamp (SWT)

Vegetation Type

Buckthorn Deciduous Shrub Thicket Type (THDM2-6)
Cattail Graminoid Mineral Meadow Marsh Type (MAMM1-2)
Common Reed Graminoid Mineral Meadow Marsh Type (MAMM1-1)
Common Reed Mineral Shallow Marsh Type (MASM1-1)
Dry Big Bluestem Graminoid Tallgrass Prairie Type (MEGM1-2)
Dry-Fresh Black Oak Deciduous Forest Type (FODM1-3)
Dry-Fresh Oak-Hardwood Deciduous Forest Type (FODM2-4)
Dry-Fresh Oak-Hickory Deciduous Forest Type (FODM2-2)
Dry-Fresh White Ash-Hardwood Deciduous Forest Type (FODM4-2)
Fresh-Moist Bitternut Hickory Deciduous Forest Type (FODM9-5)
Fresh-Moist Cottonwood Deciduous Forest Type (FODM8-3)
Fresh-Moist Green Ash-Hardwood Lowland Deciduous Forest Type (FODM7-2)
Fresh-Moist Oak Carolinian Deciduous Forest Type (FODM10-2)
Fresh-Moist Sassafras Deciduous Forest Type (FODM8-2)
Gray Dogwood Mineral Deciduous Thicket Swamp Type (SWTM2-3)
Jewelweed Forb Mineral Meadow Marsh Type (MAMM2-1)
Open Graminoid Meadow Type (MEGM4-1)

Significant Flora

Species at Risk

Castanea dentate (American Chestnut) (NPCA, 2006-2009) – Endangered
Cornus florida (Eastern Flowering Dogwood) (Brady, 1980; Niagara Falls Nature Club 2004-2007; NPCA, 2006-2009; TERRA Geographical Studies Inc.) - Endangered
Eurybia divaricata (White Wood Aster) (NPCA, 2006-2009) – Threatened
Gymnocladus dioicus (Kentucky Coffee-tree) (Niagara Falls Nature Club, 2004-2007) – Threatened
Juglans cinerea (Butternut) (Brady, 1980; Niagara Falls Nature Club, 2004-2007; NPCA, 2006-2009) – Endangered

Provincially Rare Species

Asimina triloba (Pawpaw) (Brady, 1990) – S3

Gleditsia triacanthos (Honey Locust) (Brady, 1980; Niagara Falls Nature Club, 2004-2007) – S2

Quercus ellipsoidalis – (Northern Pin Oak) (NPCA 2006-2009) – S3 not confirmed

Points of Interest

The areas with prairie indicator species might be good candidates for prairie restoration projects with the application of prescribed burn and invasive species removal (primarily Buckthorn (*Rhamnus sp.*)).

Faunal Records:

75 – Birds

24- Mammals

13- Reptiles & Amphibians

8 – Moths & Butterflies

Recommendations

Development of stronger partnership with the Stamford Volunteer Firefighters

Association is recommended to aid in the preservation of this uniquely diverse site.

Site Visits

September 1, 1980

Brady, et al

October 1, 1989

TERRA Geographical Studies Inc.

2004-2007 (several visits/ all seasons)

Niagara Falls Nature Club

September 8, 2006

Niagara Falls Nature Club

June 29, 2007

Niagara Falls Nature Club

July 21, 2008

R. Kitchen, B. Porter

August 7, 2008

R. Kitchen, B. Porter

August 8, 2008

R. Kitchen, B. Porter

August 11, 2008

R. Kitchen, B. Porter

August 13, 2008

R. Kitchen, B. Porter

2008

R. Kitchen, B. Porter, M. Nikitzuk

% of site visited

25.92 % of the total study site was visited by NAI teams.

References Cited

Brady, R., et al. 1980. *Environmentally Sensitive Areas*. Regional Municipality of Niagara, Brock University, Department of Geography, St. Catharines, Ontario.

Government of Ontario, Ministry of Natural Resources. 2009. Deciduous Forest. Species at Risk in Ontario. Retrieved 11/05, 2009, from <http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/276504.html>

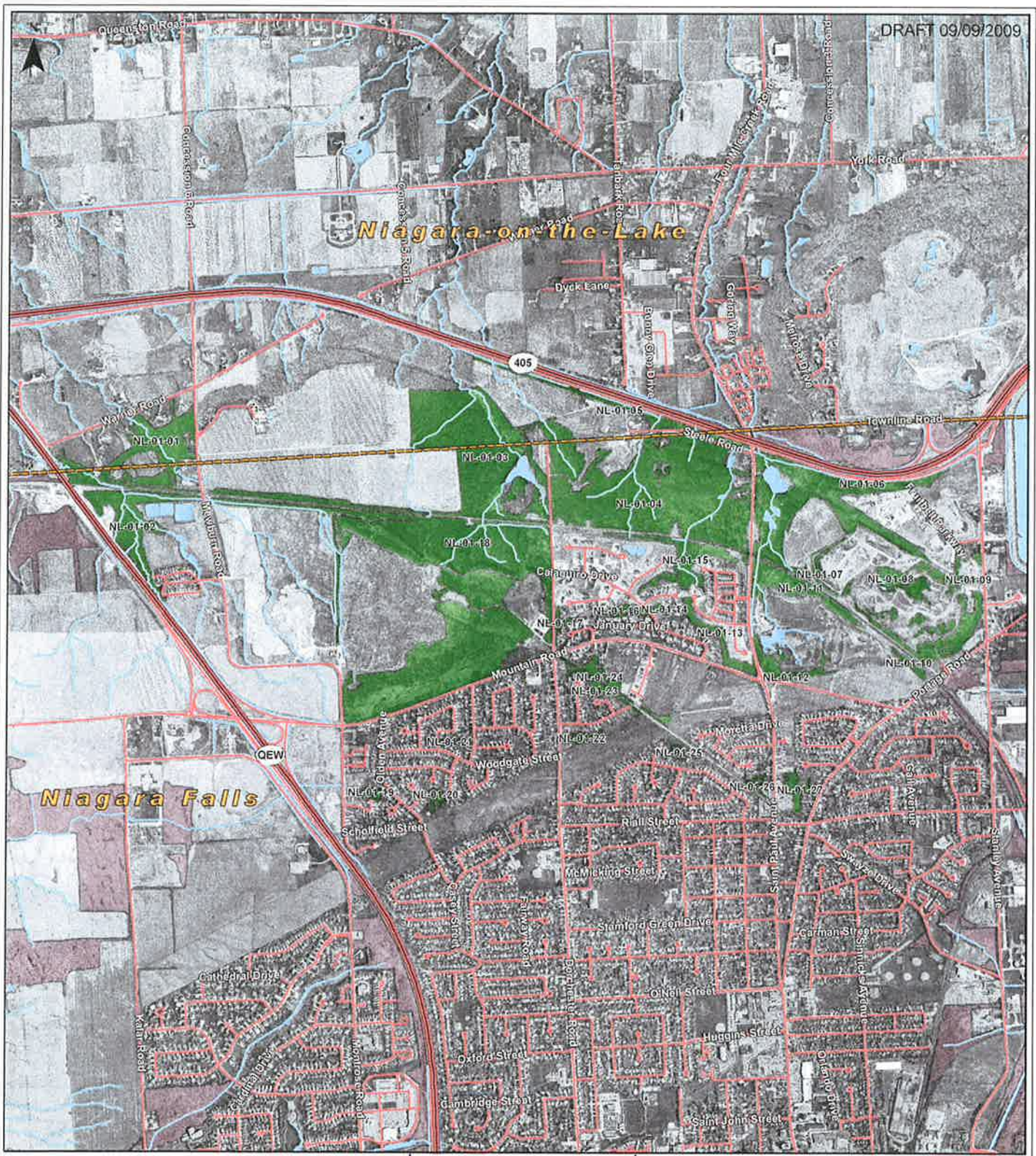
Natural Heritage Areas Inventory 2006-2009. Unpublished database, Niagara Peninsula Conservation Authority, Welland, Ontario.

Niagara Falls Nature Club. 2001-2009. [Flora and Fauna Inventories]. Unpublished raw data.

Oldham, M. J., & Brinker, S. R. 2009. *Rare Vascular Plants of Ontario (Fourth Edition ed.)*. Peterborough, Ontario: Natural Heritage Information Centre, Ontario Ministry of Natural Resources.

Ontario Ministry of Agriculture and Food. 1989. *The Soils of The Regional Municipality of Niagara*, Report No. 60 of the Ontario Institute of Pedology, Guelph, Ontario.

TERRA Geographical Studies Inc. 1989. "Mountain Road Landfill Site, Niagara Falls, Ontario." *Environmental Appraisal – Natural Environment*. Hamilton, Ontario. The Proctor & Redfern Group.



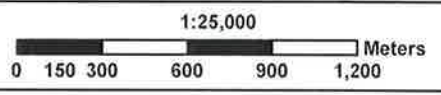
Legend

- Major Highways
- Regional Highways
- Roads
- Watercourses
- Waterbodies
- Municipal Boundaries
- Study Sites
- Study Site NL-01



Natural Areas Inventory

Study Site NL-01



Produced by the Niagara Peninsula Conservation Authority, 2009
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 All Frames: North American Datum 1983, Universal Transverse Mercator 6° Projection, Zone 17N, Central Meridian 81° West



There are a total of 320 recorded taxa (unique plant records) for this study site.

Community Series:	
Deciduous Forest (FOD)	Meadow Marsh (MAM)
Deciduous Thicket (THD)	Mixed Meadow (MEM)
Graminoid Meadow (MEG)	Thicket Swamp (SWT)

Study Site NL-04

Wood End

Municipality Niagara-on-the-Lake and Niagara Falls

Formerly Wood End (Brady, et al., 1980)

Approximate Area 95 hectares

Watershed The drainage of this study site mainly goes north east to Six Mile Creek/ Airport Drain. There is a small portion that drains north and west to Eight Mile Creek/ Airport Drain and a small portion that drains south to Ten Mile Creek.

Ownership Mainly private with a small portion in the north owned by the Niagara Peninsula Conservation Authority.

General Summary

This study site is located along the border between Niagara Falls and Niagara-on-the-Lake. It is bound on the west by Taylor Road and on the east by the Queen Elizabeth Way. The northern boundary is just north of Warner Road and the southern boundary is just south of Mountain Road.

Physical Description

This natural area is situated on a height of land of the Niagara Escarpment. The northern portion of the study site is characterized by the clay and silty clay soils of the Clay Plain over the shale, sandstone, dolostone, and limestone of the Clinton-Cataract Formation.

The southern portion is characterized by shallow soils over the shale, dolostone, and limestone of the Lockport Formation.

Soils

Soil Type	Percentage of Study Site
ALLUVIUM	3.10
CASHEL - HEAVY RED PHASE	2.72
CHINGUACOUSY - RED PHASE	5.32
ESCARPMENT	13.58
MALTON - RED PHASE	9.06
ONEIDA - RED PHASE	11.01
PEEL	3.12
PEEL - RED PHASE	52.10
WATER	0.00
NOT MAPPED	0.00
Total %	100.00

Ecological Land Classification

Summary

The Deciduous Forest communities of this study site are dominated by Shagbark Hickory (*Carya ovata*), Red Oak (*Quercus rubra*), and Sugar Maple (*Acer saccharum* ssp. *saccharum*).

The understory is largely regenerating canopy species with Hop Hornbeam (*Ostrya virginiana*), Green Ash (*Fraxinus pennsylvanica*), and Poison Ivy (*Rhus sp.*).

The successional areas were classified as Meadow Marshes dominated by Reed-canary Grass (*Phalaris arundinacea*) and Beggar-ticks species (*Bidens sp.*). The wetter depressions in these successional fields support stands of Common Reed (*Phragmites australis*), or Cattails (*Typha sp.*).

Some areas of secondary growth were also classified as Deciduous Thickets characterized by Gray Dogwood (*Cornus foemina ssp. racemosa*) and Staghorn Sumac (*Rhus typhina*).

The understory of these areas is largely Grass-leaved Goldenrod (*Euthamia graminifolia*), Timothy (*Phleum pratense*), and Kentucky Blue Grass (*Poa pratensis ssp. pratensis*).

Vegetation Communities

There are a total of 105 recorded taxa (unique plant records) for this study site.

Community Series

Coniferous Forest (FOC)
Deciduous Forest (FOD)
Deciduous Thicket (THD)
Meadow Marsh (MAM)
Shallow Marsh (MAS)

Vegetation Type

Common Reed Graminoid Mineral Meadow Marsh Type (MAMM1-12)
Fresh-Moist Shagbark Hickory Deciduous Forest Type (FODM9-4)
Fresh-Moist Sugar Maple- Beech Carolinian Deciduous Forest Type (FODM10-1)
Gray Dogwood Deciduous Thicket Type (THDM5-1)
Manna Grass Mineral Shallow Marsh Type (MASM1-1)
Reed-canary Grass Graminoid Mineral Meadow Marsh Type (MAMM1-3)

Significant Flora

Species at Risk

Juglans cinerea (Butternut) (Brady, 1980) - Endangered

Provincially Rare Species

Asimina triloba (Pawpaw) (Brady, 1980) – S3

Points of Interest

Faunal Records:

1- Reptiles & Amphibians
1- Mammals

Site Visits

September 1, 1980
Brady, et al.

July 10, 2008
R. Kitchen, B. Porter

July 28, 2008
R. Kitchen, B. Porter

July 29, 2008
R. Kitchen, B. Porter

% of site visited

10.03 % of the total study site was visited by NAI teams.

References Cited

Brady, R., et al. 1980. *Environmentally Sensitive Areas*. Regional Municipality of Niagara, Brock University, Department of Geography, St. Catharines, Ontario.

Government of Ontario, Ministry of Natural Resources. 2009. Deciduous Forest. Species at Risk in Ontario. Retrieved 11/05, 2009, from <http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/276504.html>

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Natural Areas Inventory

Study Site NL-04

1:12,500



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