

Meadowlily Woods ESA

Conservation Master Plan – Phase 1



NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

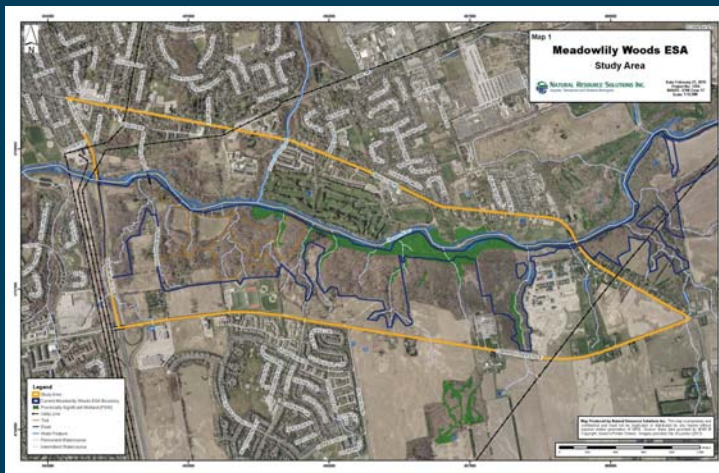
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The Study Area

The Meadowlily Woods Environmentally Significant Area

- Natural area in the City of London
- Important habitat for flora and fauna
- Archeology
- City-owned and private properties
- 60 hectares
- Public Trails



NRSI's Role

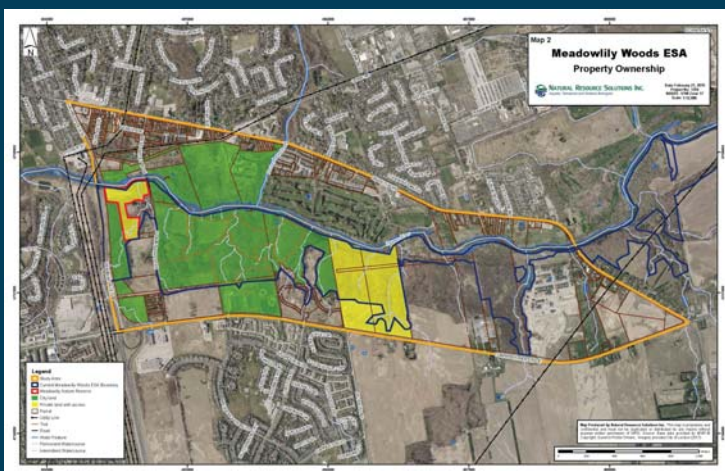
To conduct an ecological inventory of Meadowlily Woods and prepare a Phase 1 Conservation Master Plan for the Meadowlily Woods Environmentally Significant Area.

Comprehensive Inventory:

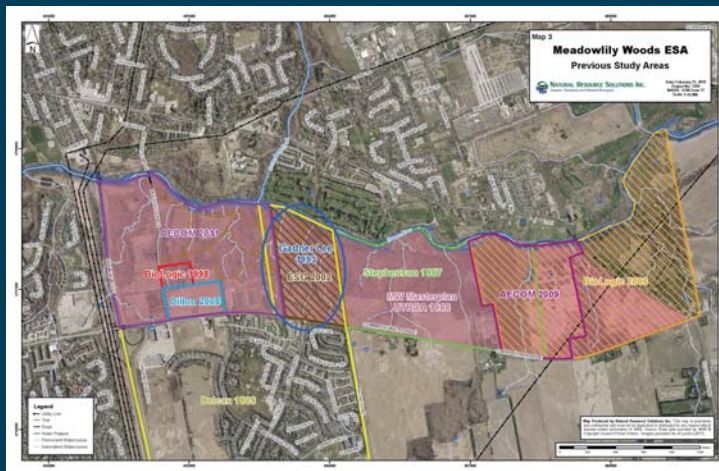
- Background review
- Field visits by NRSI biologists

The Conservation Master Plan:

- Analysis
- Boundary delineation
- Management Zones
- Restoration Areas
- Consultation with City of London



Property Ownership



Previous Study Areas

NRSI Field Studies

- Vegetation Surveys
- Bird Surveys
- Anuran Surveys
- Snake Surveys
- Turtle Surveys
- Mammal Surveys
- Butterfly Surveys
- Odonate Surveys
- Aquatic Surveys



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Survey Locations

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Field Study Results – Vascular Plants

- 435 plant species
- Ecological Land Classification
 - 26 vegetation communities
- 3 Species at Risk plants observed
 - Butternut
 - Kentucky Coffee Tree
 - Wood Poppy
- 1 Provincially Rare Species
- 5 Regionally Rare Species
- Invasive species
 - Common Buckthorn
 - Japanese Knotweed



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Ecological Land Classification

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Field Study Results - Birds

- 178 species identified in background review
- 81 species identified by NRSI
- 3 Species at Risk
 - Barn Swallow
 - Chimney Swift
 - Eastern Meadowlark
- 2 Species of Conservation Concern
 - Wood Thrush
 - Eastern Wood-Pewee
- 4 Woodland-Area Sensitive Species



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Field Study Results- Herpetofauna and Mammals

Herpetofauna

- 19 species identified in background review
- 9 species observed by NRSI biologists
- 1 Species of Conservation Concern
 - Snapping Turtle

Mammals

- 24 species identified during background review
- 9 species or evidence of their presence observed by NRSI
- Bat SAR assumed to be present



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Field Study Results- Butterflies and Odonates

Butterflies

- 29 species observed by NRSI
- 1 Species of Conservation Concern
 - Monarch

Odonates

- 22 species identified by NRSI



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Aquatic Features

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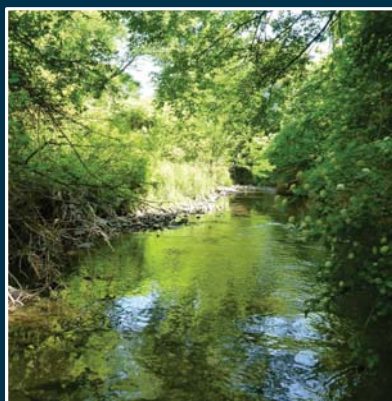
Aquatic Features

South Thames River

- Largest aquatic feature
- Confined to valleylands
- Warmwater regime
- Carolinian forest
- 77 fish and 31 mussel species

Pottersburgh Creek

- North of Thames River
- Residential and industrial land-uses
- Warmwater system
- Fish barriers
- 12 fish species
- Excellent to suitable fish habitat



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Aquatic Features

Un-named Creek

- Southwest of the study area
- Drains into the Thames River
- Deciduous forest shoreline
- Headwaters north of Commissioners Road East
- Suitable to poor quality fish habitat

Ravine Features

- 11 ravine features
- A to D assessed by AECOM
- E through H assessed by NRSI
- Indirect fish habitat
- Fish barriers
- Fish observed in ravine H



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Significant Natural Features

Features and areas, including wetlands, coastal wetlands, fish habitat, woodlands, valleylands, habitat of endangered and threatened species, significant wildlife habitat and areas of scientific and natural interest that are ecologically important in terms of features, functions, representation or amount, and contribute to the quality and diversity of an identifiable geographic area or natural heritage system.

Provincially Significant Wetland

- Located along the edge of the South Thames River

Significant Woodland

- Woodlands meet all 5 criteria for significance

Significant Valleylands

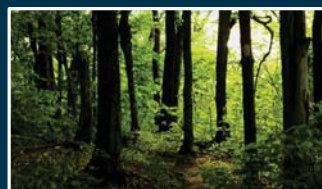
- Thames River Valley considered significant



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Significant Wildlife Habitat

Areas where plants, animals, and other organisms live, and find adequate amounts of food, water, shelter and space to sustain their populations, that are ecologically important in terms of features, functions, representation or amount and that contribute to the quality and diversity of an identifiable geographic area or Natural Heritage System.

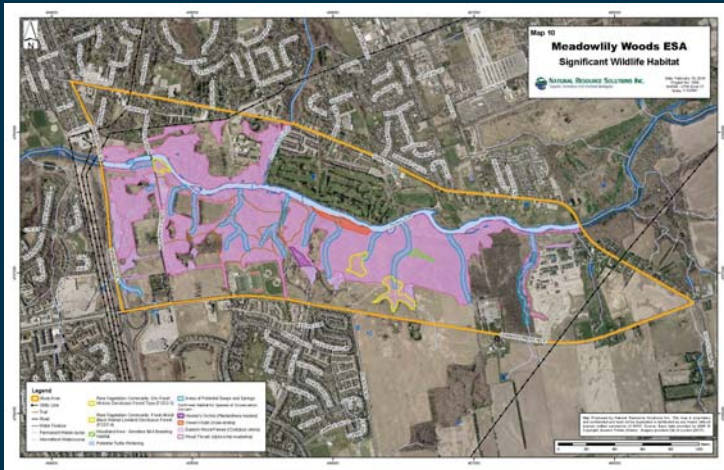


Significant Wildlife Habitat Criteria Schedules For Ecoregion 7E January, 2015

Ontario Ministry of Natural Resources and Forestry
Regional Operations Division
Southern Region Planning Section
300 Water Street, 4th Floor South
Peterborough, Ontario, Canada K9J 8B5



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Significant Wildlife Habitat

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Significant Wildlife Habitat

Seasonal Concentration Areas

Turtle Wintering Area: Confirmed

- In the Thames River
- Snapping Turtles observed
- Deep pools are Significant Wildlife Habitat

Bat Maternity Colonies: Candidate

- May be found within Meadowlily Woods
- Suitable cavity trees observed
- Presence of maternity colonies not confirmed



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Significant Wildlife Habitat

Rare Vegetation Communities

Other Rare Vegetation Communities: Confirmed

- Two rare vegetation communities identified
- Fresh-Moist Black Walnut Lowland Deciduous Forest
 - Provincially imperiled or vulnerable (S2S3)
- Dry-Fresh Hickory Deciduous Forest
 - Provincially vulnerable or apparently secure (S3S4)



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Significant Wildlife Habitat

Specialized Wildlife Habitat

Seeps and Spring: Confirmed

- Identified throughout the study area
- Exact location of seeps not recorded

Woodland Area-Sensitive Bird Breeding Habitat: Confirmed

- Located in the central-east of the study area
- Interior forest >200m from edge



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Significant Wildlife Habitat

Specialized Wildlife Habitat

Osprey Nesting, Foraging and Perching Habitat: Candidate

- Undisturbed forest along the Thames River
- Osprey observed by NRSI
- No nests observed

Turtle Nesting Habitat: Candidate

- Sand and gravel areas along the Thames River
- Habitat for Midland Painted Turtle and Snapping Turtle is present
- No nests or nesting activities observed



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Significant Wildlife Habitat

Habitats of Species of Conservation Concern

Eastern Wood-Pewee: Confirmed

- Woodland habitats throughout the study area

Wood Thrush: Confirmed

- Forest habitats in the study area

Snapping Turtle: Confirmed

- Observed multiple times, breeding is likely

Monarch: Confirmed

- Observed in meadow habitats with Milkweed
- Apparently secure on breeding grounds

Cream Violet: Confirmed

- Observed along the Thames River

Hooker's Orchid: Confirmed

- Known from the south-central area of the study area



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Species at Risk at Meadowlily Woods

6 Species at Risk observed by NRSI biologists

Butternut

- Found throughout the subject site
- Butternut Canker
- No Butternut Health Assessment completed

Kentucky Coffee Tree

- Near Meadowlily Road South and the Thames River
- Likely planted specimens

Wood Poppy

- Small population found in the study area
- First identified by Stephenson in 1987



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Species at Risk at Meadowlily Woods

Barn Swallow

- Observed over the subject site
- No nesting activities observed

Chimney Swift

- Observed foraging over the Thames River
- Nesting habitat is chimneys and large hollow trees
- No nesting activities observed

Eastern Meadowlark

- One individual observed
- Small habitat size
- Unlikely to be breeding in study area

Endangered Bat Species

- Assumed to be present

13 additional SAR may be found in or adjacent to the Meadowlily Woods study area



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Boundary Review

Objective

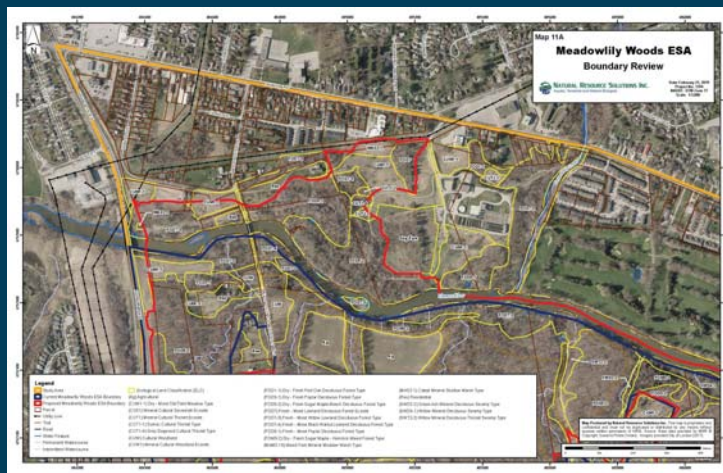
To refine the boundary of the Meadowlily Woods Environmentally Significant Area based on background information, field survey data and analysis using the City of London's *Guideline Documents for Environmentally Significant Areas, Identification, Evaluation and Boundary Delineation (1997)* and *Guidelines for Assessing Ecological Boundaries of Vegetation Patches*.

Process

- All lands in the study area considered for inclusion
- Qualifying as an Environmentally Significant Area
- Boundary refinement



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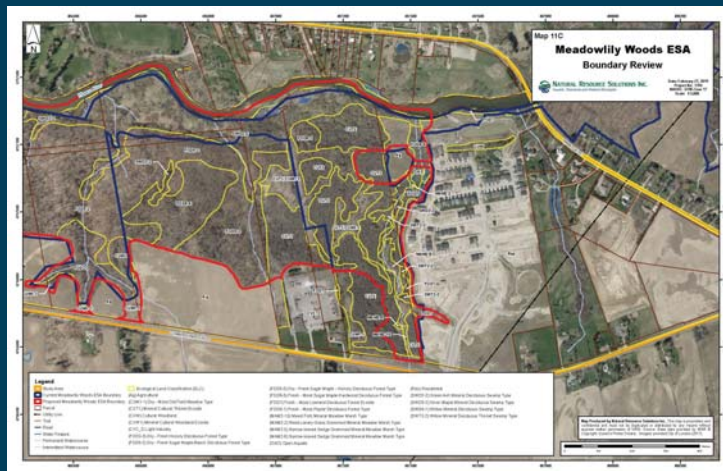
ESA Boundary Review

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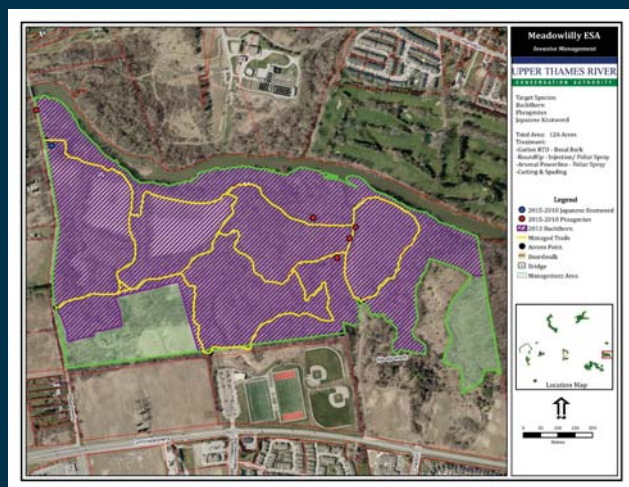
Management Zones

Restoration

Ecological restoration of natural areas which have been degraded through human disturbance and invasive species establishment is critical to improving the overall health, ecological form and ecological function of Environmental Significant Areas in London and across Ontario.

Restoration in City of London

- A leader among Ontario municipalities
- Invasive species management
- *London Invasive Plant Management Strategy (2017)*
- Hierarchical approach to invasive management
- Priority invasive plant species



Invasive Management



Disturbance Areas

Restoration – Recommended Activities

Waste Removal

- Dumping of household trash
- Removal and clean-up of these areas
- No dumping signs and vegetation plantings

Invasive Species Management

- Invasive species at Meadowlily Woods
- Compete with native plants
- Best Management Practices



Restoration – Recommended Activities

Vegetation Plantings

- Provide wildlife habitat
- Limit erosion
- Prevent invasive species establishment
- Restrict pedestrian access

Monitoring

- Ensure success of restoration
- Annual monitoring



