



# Hamilton Natural Areas Inventory

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# Nature Counts 3

- A Natural Areas Inventory (NAI) involves surveying natural areas
  - as large as conservation areas
  - as small as urban woodlots
- Habitat, plants and wildlife
- Conservation and restoration
- NAI every 10 years since 1993
- The field work to be complete in 2026
  - Final report expected in 2027

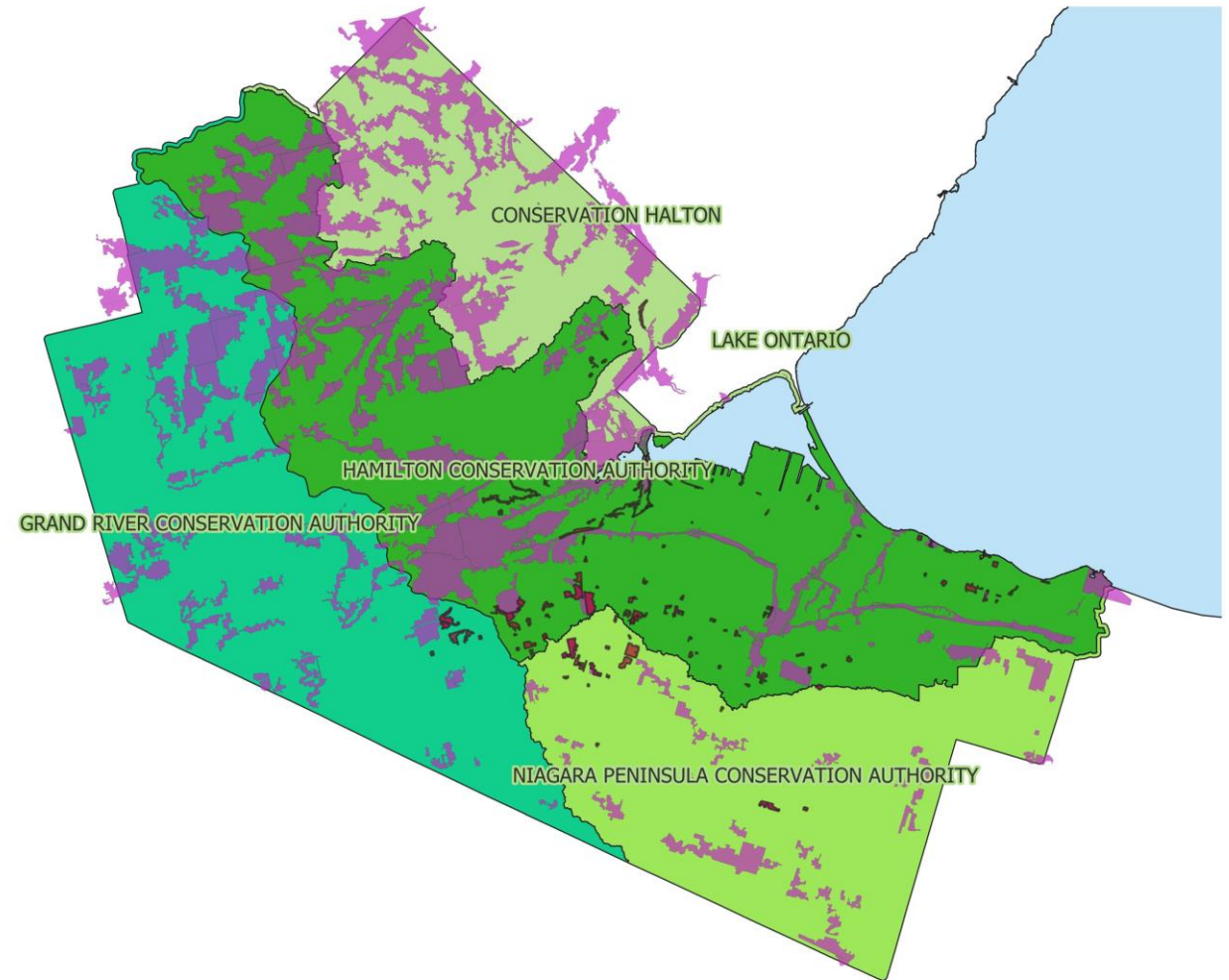


Running Strawberry Bush

# Map of Study Area



Hamilton, Ontario (World Map)



Hamilton's Conservation Authorities

# Collaboration

- Main partners: HCA, CoH, HNC
- Supporting partners include RBG, McMaster, GRCA, NPCA, and CH
- An action outlined in the Biodiversity Action Plan (BAP)



# Carolinian Canada

- Many species at their most northern range, and others at their most southern range
- Biodiversity here is exceptionally high
- Important to protect it from invasive species, habitat loss, climate change, etc



Turtlehead

# Goals

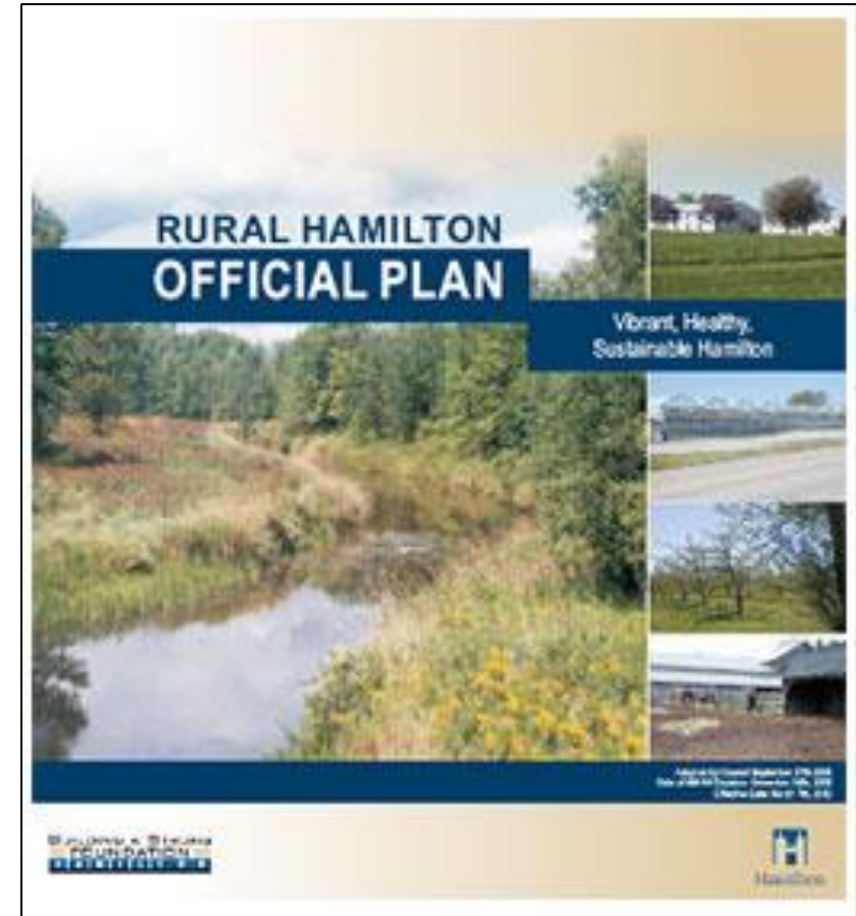
- Identifying significant natural areas for protection
- Defining threats to biodiversity and restoration opportunities across the city
- Engaging the public in biodiversity monitoring
- Contributing to policy and mapping amendments for conservation purposes



Bashful Bulrush

# Past NAIs

- First NAI in 1993 identified 67 areas as ESAs
  - Up from 37 areas before the NAI
- 2003 NAI identified 14 more (81 total)
- After another NAI in 2014, there are now around 85 ESAs



Source: City of Hamilton

# 2024-2027 NAI: Nature Counts 3

- Past NAIs have mainly gathered information with biologists in the field
  - This NAI includes more public participation
- Data coming in through iNaturalist
  - App or website that is free and simple to use to identify and document species
  - Used by scientists to understand the distribution of species



Michigan Lily

# Data Gaps

- Aquatic systems hadn't been surveyed
- Urban areas had been under-represented
- Natural areas had been undocumented
- There were areas without past surveys
- Returning to areas with repeat surveys



QGIS

# 2024 Fieldwork

- Fieldwork started 2024 for this NAI
  - The target was ELC in urban woodlots
- Often remnants of the habitats that used to cover the landscape
- Contain interesting and sometimes rare species
- Facing many threats



American Groundnut

# 2025 Fieldwork

- Ecological Land Classification (ELC)
- Aquatic systems
- Bioblitz Events
- Mapping Threats to Biodiversity
  - Invasive Species Workshops



Invasive Species Workshop

# Ecological Land Classification

- **23** urban woodlots
- **115** hectares of CA property (GRCA, NPCA, CH)
- **36** hectares of private property



ELC crew, Sherry and Spencer, with a Black Walnut

# ELC Data

- **11** woodlots had botanical surveys, **12** had full ELC
- The most common vegetation community was Fresh-Moist Black Walnut Lowland Deciduous Forest Type
- Average of **83** species per woodlot
  - High of **149**
  - Low of **38**
- Total of **266** species



An Urban Woodlot

# Aquatics

- **7** benthic sites sampled
- **6** fish sites sampled
- **2** minnow trap sites
- **31** benthic families identified
- **14** fish species identified



Aquatic Biology Coordinator, Val, Benthic Sampling

# Fish Species

- Largemouth Bass
- Central Mudminnow
- White Sucker
- Creek Chub
- Common Shiner
- Bluntnose Minnow
- Pumpkinseed
- Pearl Dace
- Western Blacknose Dace
- Bluegill
- Yellow Bullhead
- Rainbow Darter
- Rainbow Trout
- Golden Shiner



Val photographing fish



Pumpkinseed



Yellow Bullhead



Rainbow Darter

# iNaturalist

- Since beginning of 2024
  - Over **86,000** observations
  - **6,196** species
  - **3,692** research grade species

- 1,632 Insects
- 1,077 Plants
- 354 Fungi
- 250 Birds
- 109 Arachnids
- 14 Amphibians
- 12 Reptiles
- 34 Mammals
- 53 Fish
- 36 Molluscs
- 18 Protozoans

# What's Next?

- Returning to areas with consistent data for ELC
- Aquatic surveys starting in the spring
- Migratory bird surveys
- Public outreach
- Data analysis and reporting



Aquatic Field Technician, Emilia, sampling a stream

# Thank you

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