

# Natural Heritage System Study for the County of Lennox and Addington

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For Ecoregion 6E



# Purpose of Meeting

- Indicate why the County is developing a Natural Heritage System
- Identify what a Natural Heritage System is
- Establish what part of the County will be subject to the Natural Heritage System
- Identify sources of information for developing a Natural Heritage System
- Present the approach to mapping and present the mapping completed to date
- Present potential land use planning implications
- Identify next steps

# Establishing NHS Responds to the Provincial Policy Statement

- 2.1.2 The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.
- 2.1.3 Natural heritage systems shall be identified in Ecoregions 6E & 7E, recognizing that natural heritage systems will vary in size and form in settlement areas, rural areas, and prime agricultural areas.
- The direction provided in the PPS is reflected in the County of Lennox and Addington's Official Plan policies D1.9 through D1.11

# What is a Natural Heritage System?

- **"Natural heritage system:** means a system made up of natural heritage features and areas, and linkages intended to provide connectivity (at the regional or site level) and support natural processes which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species, and ecosystems. These systems can include natural heritage features and areas, federal and provincial parks and conservation reserves, other natural heritage features, lands that have been restored or have the potential to be restored to a natural state, areas that support hydrologic functions, and working landscapes that enable ecological functions to continue. The Province has a recommended approach for identifying natural heritage systems, but municipal approaches that achieve or exceed the same objective may also be used."

# Linkage Areas as a Component of the NHS – What does current Official Plan say?

- Section D1.11 - Linkage areas are defined as linear natural features such as streams, floodplains, and steep slopes, valleys, contiguous narrow woodlands and wetlands that connect two or more natural heritage features. It is the intent of the County to identify these corridors when a natural heritage system is developed in accordance with Section D1.9 of this Plan.

## Ecoregions and Ecodistricts – Unique Attributes

6E-9 – limestone plain and till moraine

6E-15 – shallow-soiled limestone plains with clay and silt

***The above means that the NHS will only be established for southern two-thirds of the County***

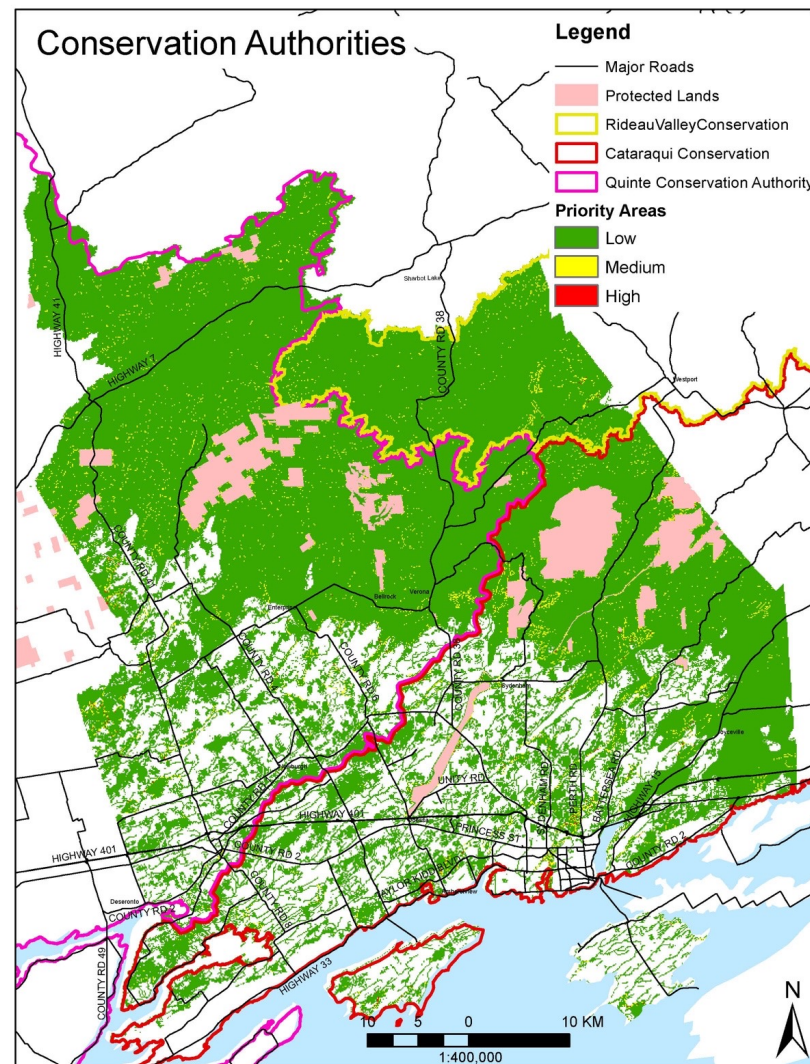


# Previous Natural Heritage System Studies:

- Cataraqui Region Natural Heritage Study (Cataraqui Region Conservation Authority 2006)
- Proposed Natural Heritage Strategy for Consideration by the Municipalities and First Nations Territory of the Bay of Quinte Region (Lower Trent Conservation 2015)
- Natural Heritage Plan for the Land Conservancy of Kingston, Frontenac, Lennox and Addington (North-South Environmental Inc. and LC-KFLA 2018).
- The Land Between
- Adirondack to Algonquin Collaborative (A2A)
- Town of Greater Napanee Natural Heritage Report (December 2005) prepared by Cataraqui Conservation, Lower Trent Conservation and Quinte Conservation



# Conservation Authority Mapping






## Building Blocks of an NHS – Available in GIS

- Representative areas
- Protected areas
- Wetlands
- Woodlands
- Watercourses

## Building Blocks of an NHS – Not Available in GIS

- Valleylands
- Other habitats such as thickets and grasslands with attributes that qualify them as Significant Wildlife Habitat
- Headwater Drainage Features
- Habitat of threatened and endangered species
- Linkages between features



# Considerations for System Composition

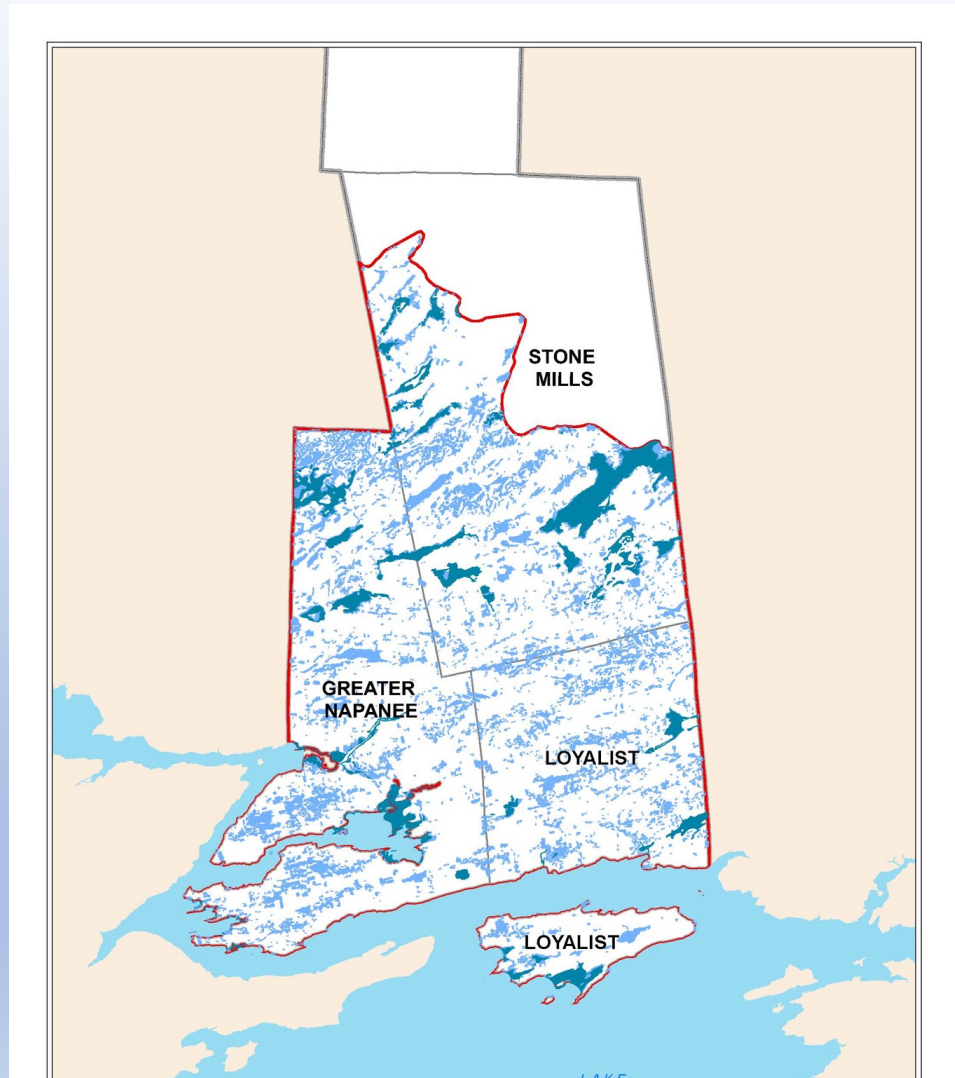
- Ecodistrict representation
- Size
- Shape
- Proximity
- Linkage
- Significance
- We have included the consideration that much of Lennox and Addington County is a Working Landscape per the definition of Natural Heritage System in the PPS: “These [NHS] systems can include natural heritage features and areas, federal and provincial parks and conservation reserves, other natural heritage features, lands that have been restored or have the potential to be restored to a natural state, areas that support hydrologic functions, and working landscapes that enable ecological functions to continue.”

# Approach to Mapping

- Used layers that were available in GIS
- Used criteria in the Natural Heritage Reference Manual to define some features
- Modified some criteria to bring protected area in line with targets indicated in How Much Habitat is Enough
- Assumed much of the current land outside the features mapped using this approach is a working landscape – it does not provide perfect connections but features have persisted for over 100 years in this landscape
- Provided linkages using watercourses and modelling within working landscape
- Areas of aggregate extraction, major roads and settlement areas are not considered part of the working landscape – NHS must be handled differently

# Wetlands

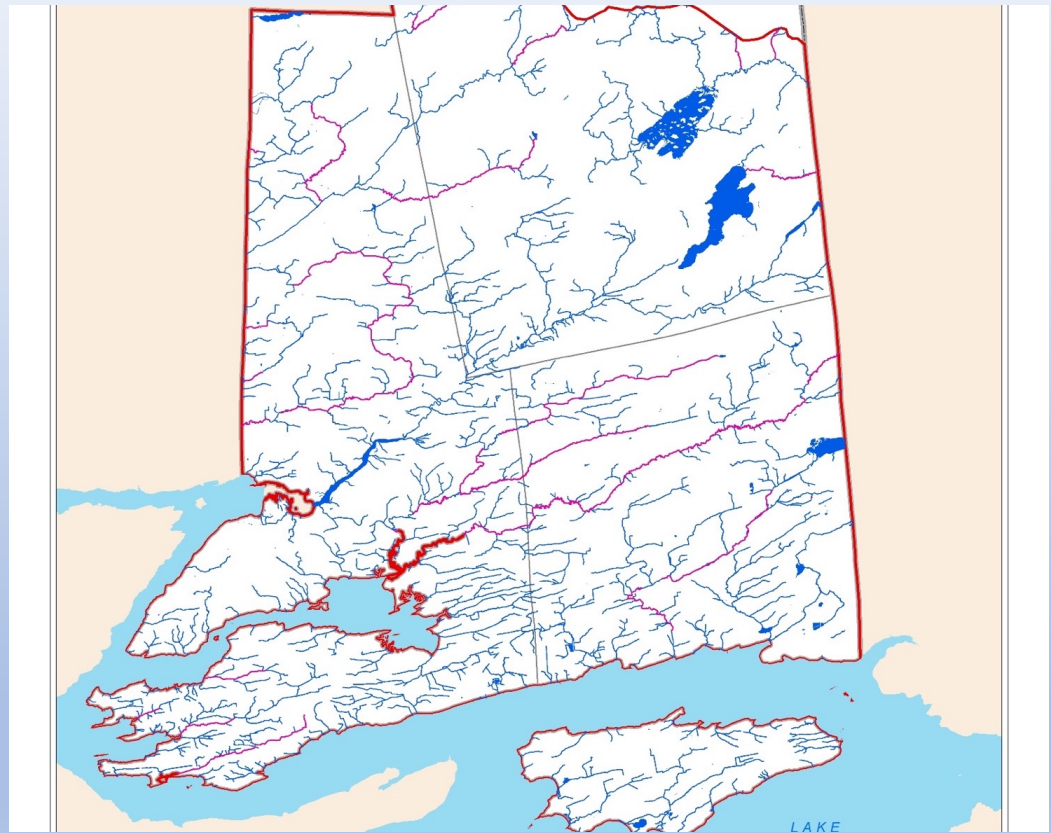
All wetlands on existing layers  
were mapped





# Permanent and Intermittent Watercourses

Fish Habitat mapped in draft but there are likely more watercourses that provide fish habitat than shown here



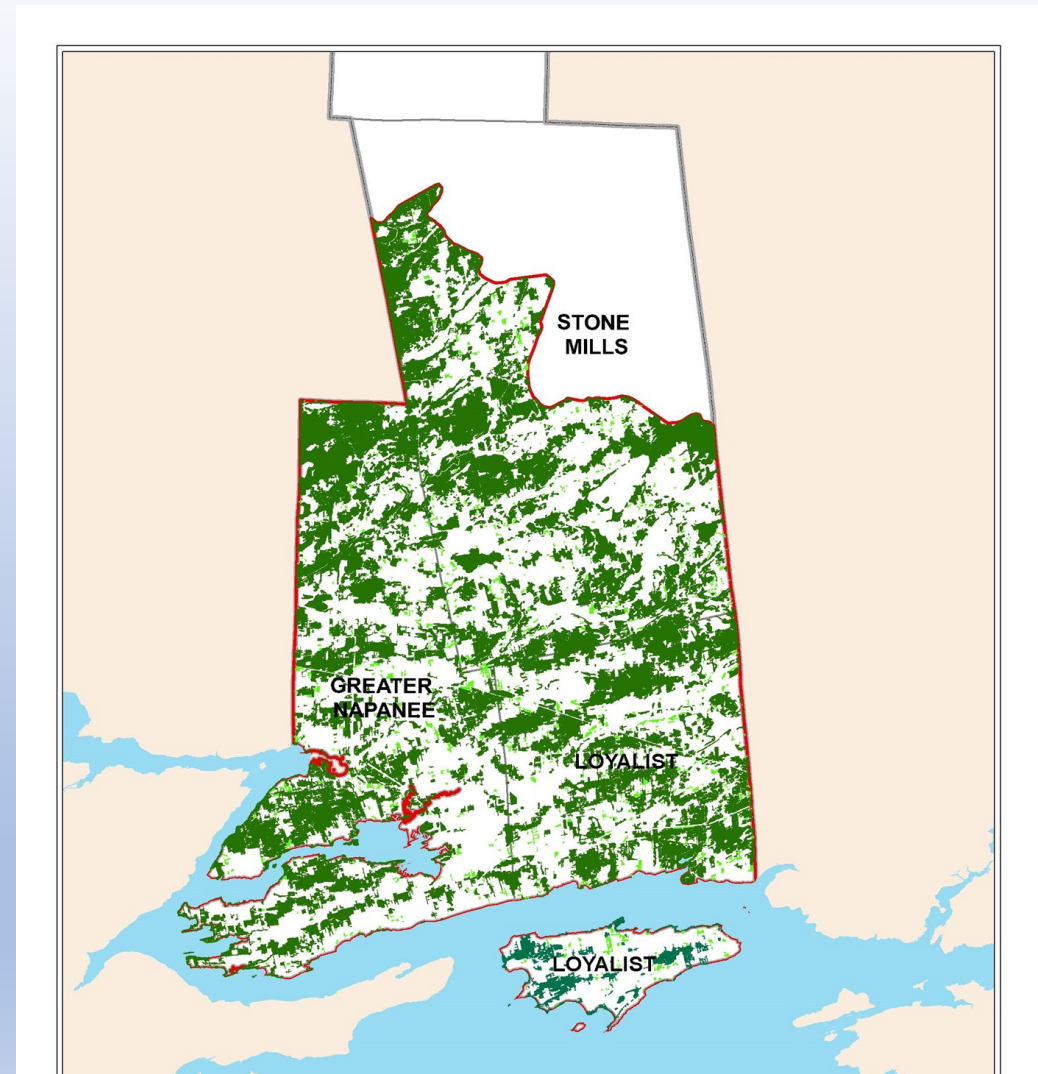
# Woodland and Significant Woodland - Size

Size criteria from NHRM used to map significant woodlands according to proportion of landscape occupied by woodland. County of Lennox and Addington Mainland has 40,996 ha of woodlands, making up 35% woodland cover

Recommended size threshold for significance in a landscape with over 30% woodland cover is 50 ha. This would result in only 4% of woodland patches being captured (far less than the amount recommended by Environment Canada), so size threshold reduced to 20 ha: 9% of woodland patches and 86% of woodland area captured.

Woodlands on the mainland are considered significant if they:

- Are 20ha in size or larger, or
- Meet certain additional criteria (shown on next slide):



# Additional Criteria

- Have a minimum patch width  $> 40$  m for features less than 1 ha and a minimum patch width  $> 20$  m for features greater than 1 ha (i.e., are not hedgerows), and
- Contain 2 ha or greater of forest interior, measured as the area  $> 100$  m from the woodland edge (canopy edge), or
- Occur within 30 m of a mapped permanent or intermittent stream or waterbody.

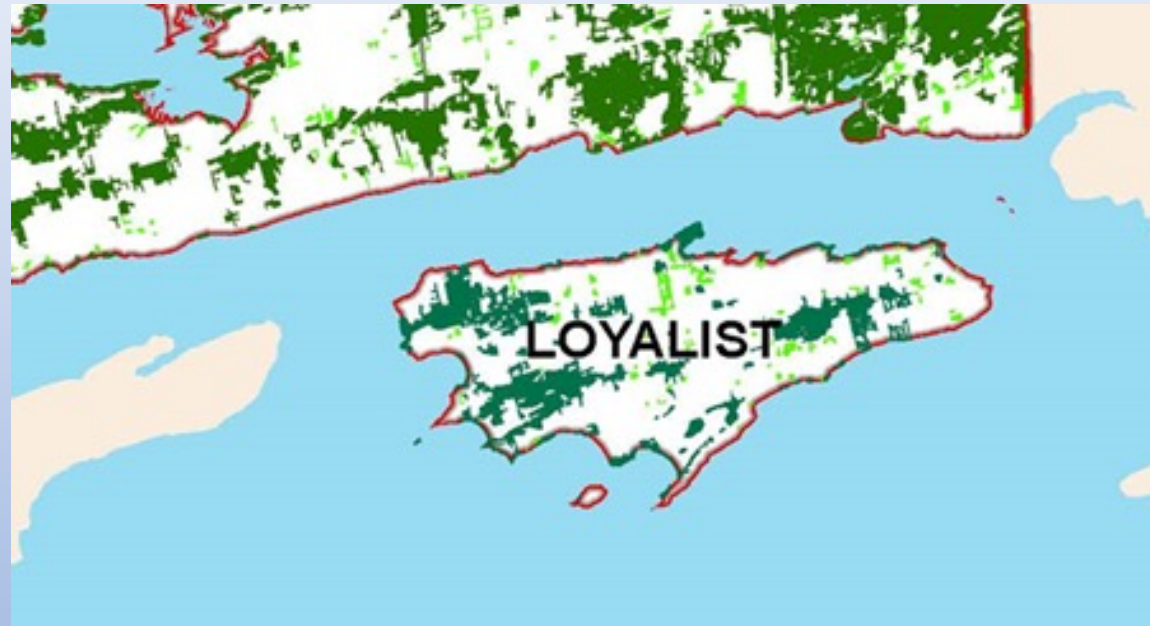


# Amherst Island

Amherst Island has 17% woodland cover.

Significant woodlands are included in NHS mapping for Amherst Island if they meet one or more of the following criteria:

- According to NHRM, if 15–30% of the land cover is woodland, woodlands 20 ha in size or larger should be considered significant;
- Woodlands with a minimum of 2 ha of forest interior: Interior habitat being more than 100 m from the edge; and,
- Woodlands within 30 m of a watercourse or water body.
- This is the same threshold used for the mainland, since the lower threshold of significance was used for the mainland.

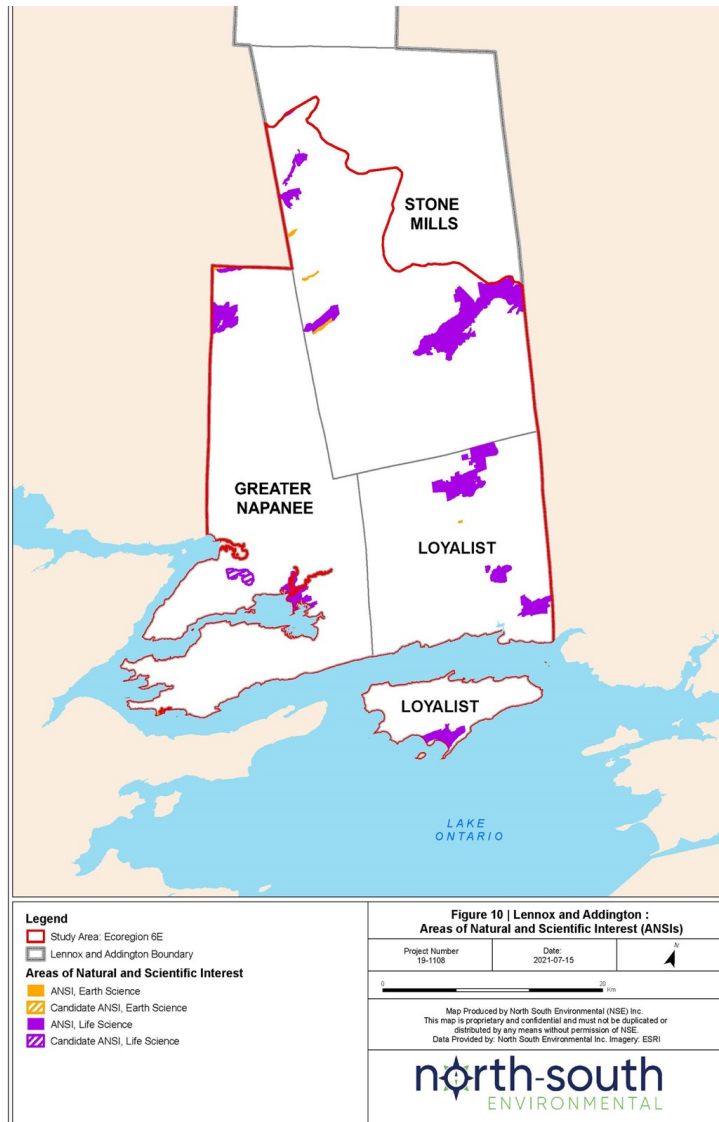


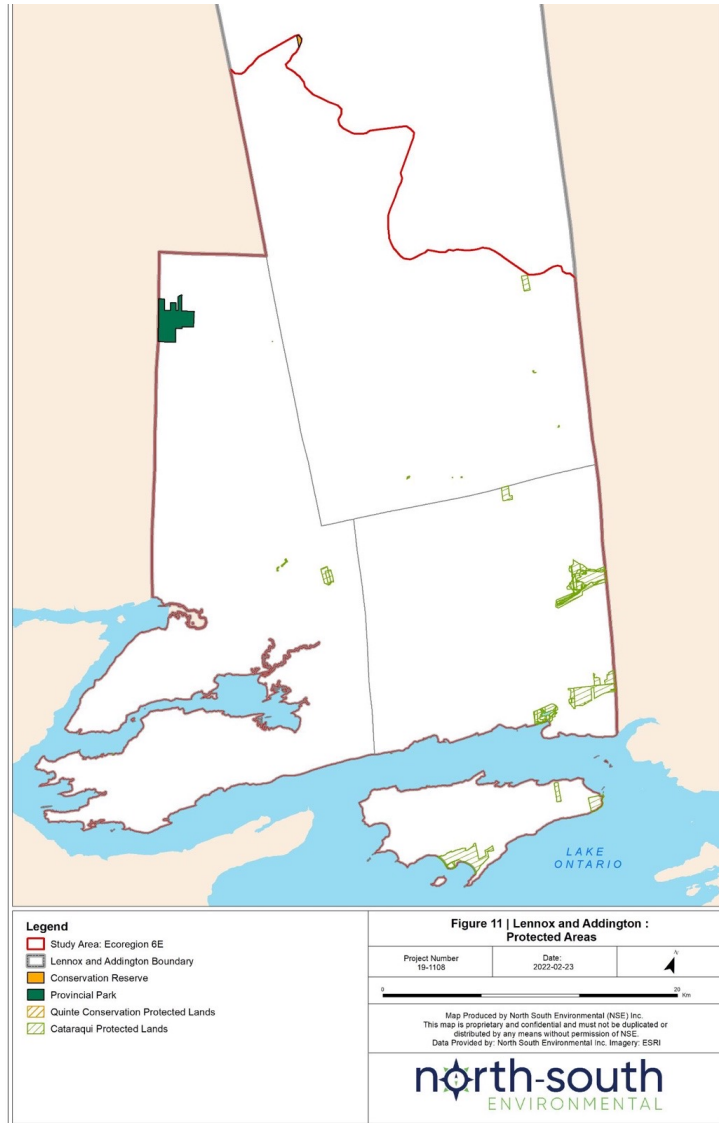
# Additional Criteria could be Considered

- Site-specific studies may indicate woodlands with the following significant features
  - Unusual composition
  - High native diversity
  - Unique species
  - Rare plants
  - Old growth
  - Social values such as high educational value, historical value, cultural value

# Areas of Natural and Scientific Interest (ANSIs)

- Both provincially significant and candidate ANSIs





# Protected Areas

- Provincial Parks
- Conservation Reserves
- Quinte conservation protected lands
- Cataraqui Conservation protected lands
- Additional potential areas suggested by TAC:
  - NCC lands (if GIS layer available)

# Candidate Significant Wildlife Habitat

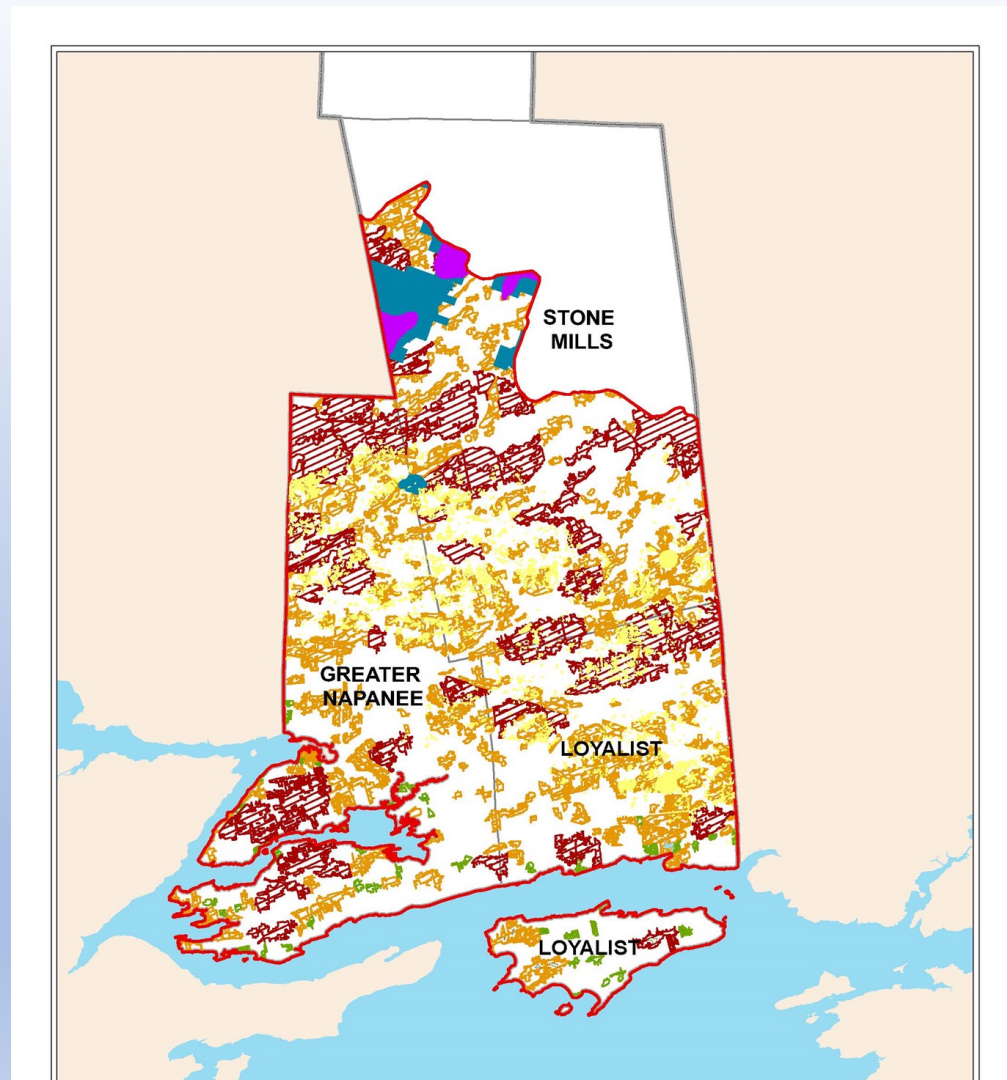
Alvars (yellow – areas of potential mapped by NCC.)

Candidate Area-sensitive Breeding Bird Habitat (orange cross-hatching)

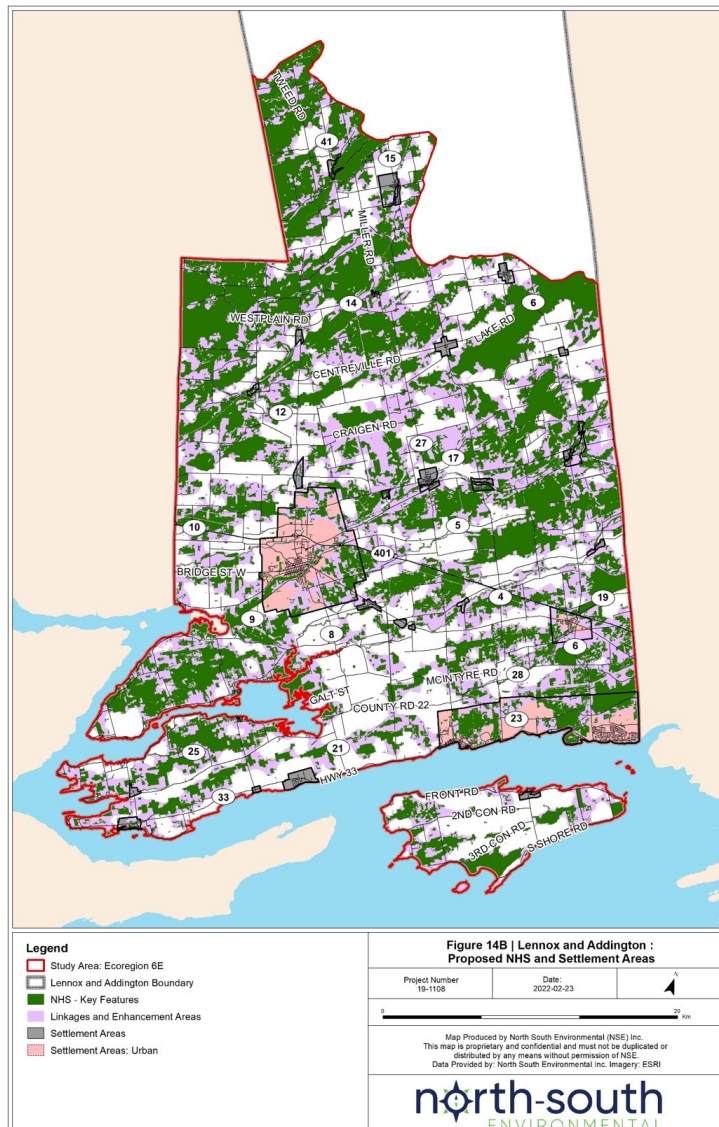
Candidate Raptor Nesting Habitat (red cross-hatching)

Candidate Migratory Landbird Stopover Habitat (green cross-hatching)

Winter Deer Congregation Habitat (Stratum 1, Stratum 2) (purple and green)



# Proposed NHS - Components



- Recommended NHS Features – dark green
  - All mapped wetlands
  - All mapped watercourses (likely includes most significant valleylands)
  - Significant woodlands
  - Protected areas
  - All ANSIs
- Linkages – modelled and watercourse oriented: Purple
- Linkages modified within larger settlement areas so that they are omitted from areas where no primary natural features or supporting features are present

# Candidate Areas: to be assessed at site-specific level

- Other woodlands
- Fish habitat and significant valleylands identified by a site-specific study
- Shoreline Areas (not mapped); with natural composition
- Candidate Significant Wildlife Habitat (including Alvars)
- Habitat of Threatened and Endangered Species (Regulated by MNRF)
- Habitat of special concern species
- Buffers/Vegetation Protection Zones
- Enhancement areas

Recommend when landscape change is proposed, as confirmed at a site-specific level



# Land Use Planning Implications

- **Wetlands** - All Provincially Significant Wetlands would continue to be designated Environmental Protection Area (EPA) – no development or site alteration permitted
- All other wetlands would be included in new Natural Heritage System overlay designation – no development and site alteration permitted unless no negative impact test satisfied
- **Woodlands** – All woodlands greater than 20 hectares would be included in EPA designation - no development and site alteration permitted unless no negative impact test satisfied
- Other woodlands would need to be studied to determine significance if application for development submitted
- **Areas of Natural and Scientific Interest (ANSI)** - all Provincially significant and Regionally significant ANSI's would be designated EPA - no development and site alteration permitted unless no negative impact test satisfied

# Land Use Planning Implications (Cont'd)

- **Wildlife habitat** - known mapped significant wildlife habitat would included in new Natural Heritage System overlay designation – no development and site alteration permitted unless no negative impact test satisfied
- Candidate wildlife habitat areas to also be included in new Natural Heritage System overlay designation – significance would be determined at time of Planning Act application
- **Other protected areas** - Provincial Parks, Conservation Reserves and Conservation Authority lands would be included in new Natural Heritage System overlay designation
- **Watercourses** - would be considered part of the Natural Heritage System but not mapped as such
- **Linkages** – would be included in new Natural Heritage System overlay designation – potential for retaining and enhancing linkage to be determined at time of Planning Act application
- **Enhancement areas** – these would be mapped as part of more detailed planning exercises

# Land Use Planning Implications (Cont'd)

**Screening exercise required** – before next step in mapping process completed screening exercise to be undertaken to take into account:

- Existing designated employment lands (developed and undeveloped)
- Existing licensed pits and quarries under the Aggregate Resources Act
- Approved development sites where supporting studies have already been completed
- Recent or on-going Secondary Plan areas where environmental studies recently completed or underway

# Next Steps

1. Consider comments made at Open Houses on November 7, 2022 and other written comments – **deadline December 2, 2022**
2. Finalize Natural Heritage System mapping – **December 2022/January 2023**
3. Prepare Final Background Report – **February 2023**
4. Meet with the technical advisory group and stakeholders – **February/March 2023**
5. Host Open House Sessions to obtain feedback from the public - **April 2023**
6. Present final Draft Natural Heritage System and Background Report to a Public Meeting – **June 2023**
7. Finalize Natural Heritage System Background Report and mapping to be presented to Council for adoption – **July 2023**