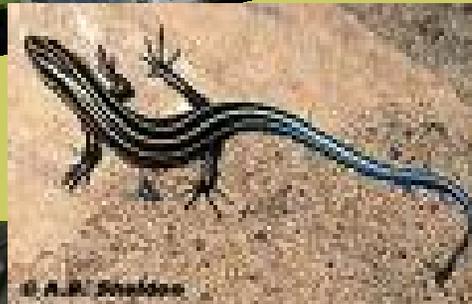


# Port Franks – In the Heart of a Carolinian Canada Biodiversity Hotspot



Jarmo Jalava,  
Carolinian Canada Coalition

# Cultural Context

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- ❑ Aboriginal source of flint, hunting, gathering
- ❑ Settled by Europeans in early 1800s
- ❑ Grand Bend, Port Franks, Thedford, Kettle and Stony Point First Nations, smaller villages
- ❑ Extensive cottage development; Grand Bend is major recreational destination
- ❑ Pinery Provincial Park receives 0.5 million visitors per year
- ❑ Inland areas primarily agricultural

# Ecological Context: Carolinian Life Zone

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40% of Canada's vascular plants

25% of Canada's human population

>94% upland forest lost

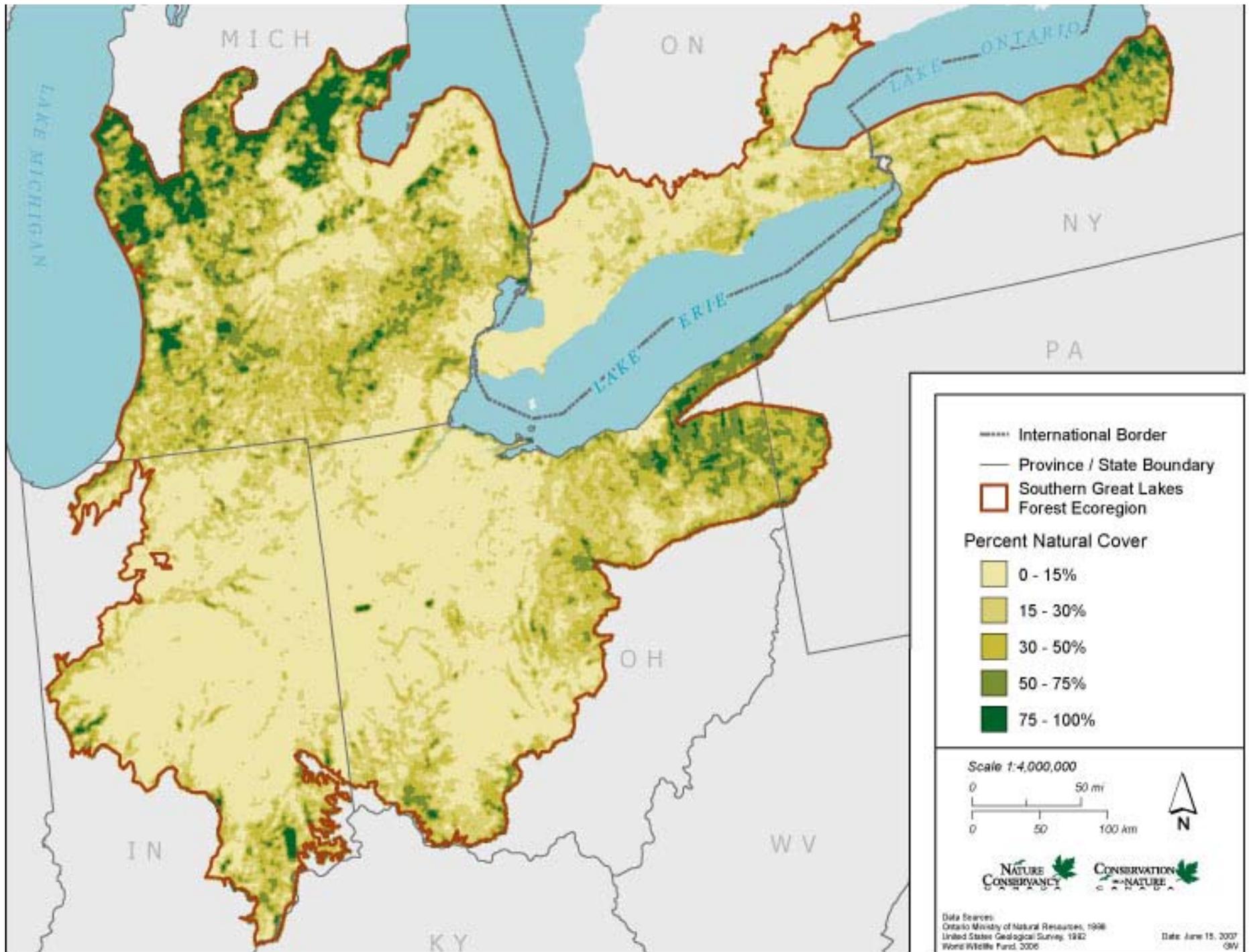
>70% of wetlands lost

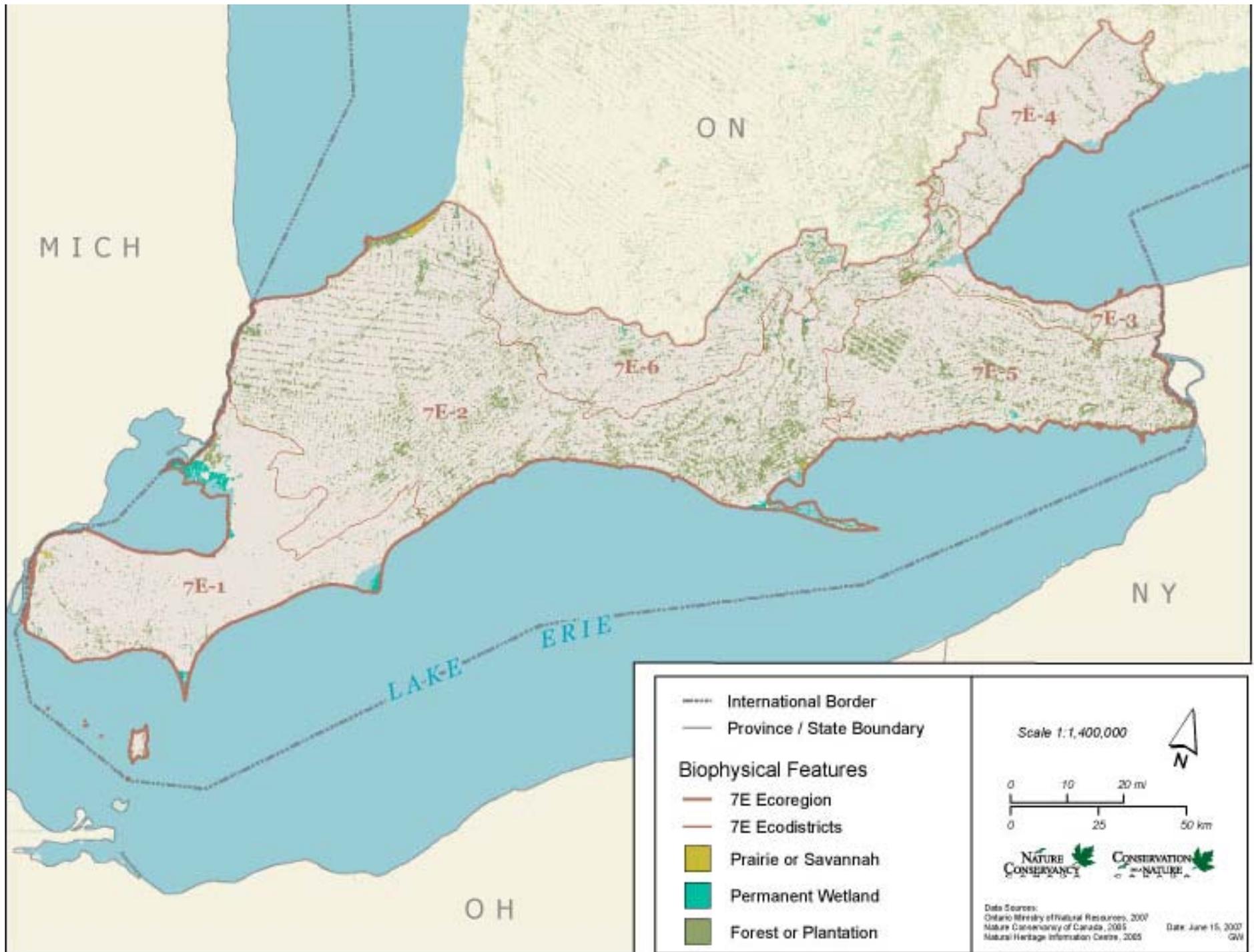
>98% of prairies and savannahs lost

~ 150 officially designated Species At Risk in Carolinian  
Canada

>500 additional potential SAR

Many globally significant biological features



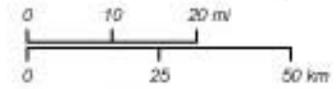


- International Border
- Province / State Boundary

**Biophysical Features**

- 7E Ecoregion
- 7E Ecodistricts
- Prairie or Savannah
- Permanent Wetland
- Forest or Plantation

Scale 1:1,400,000



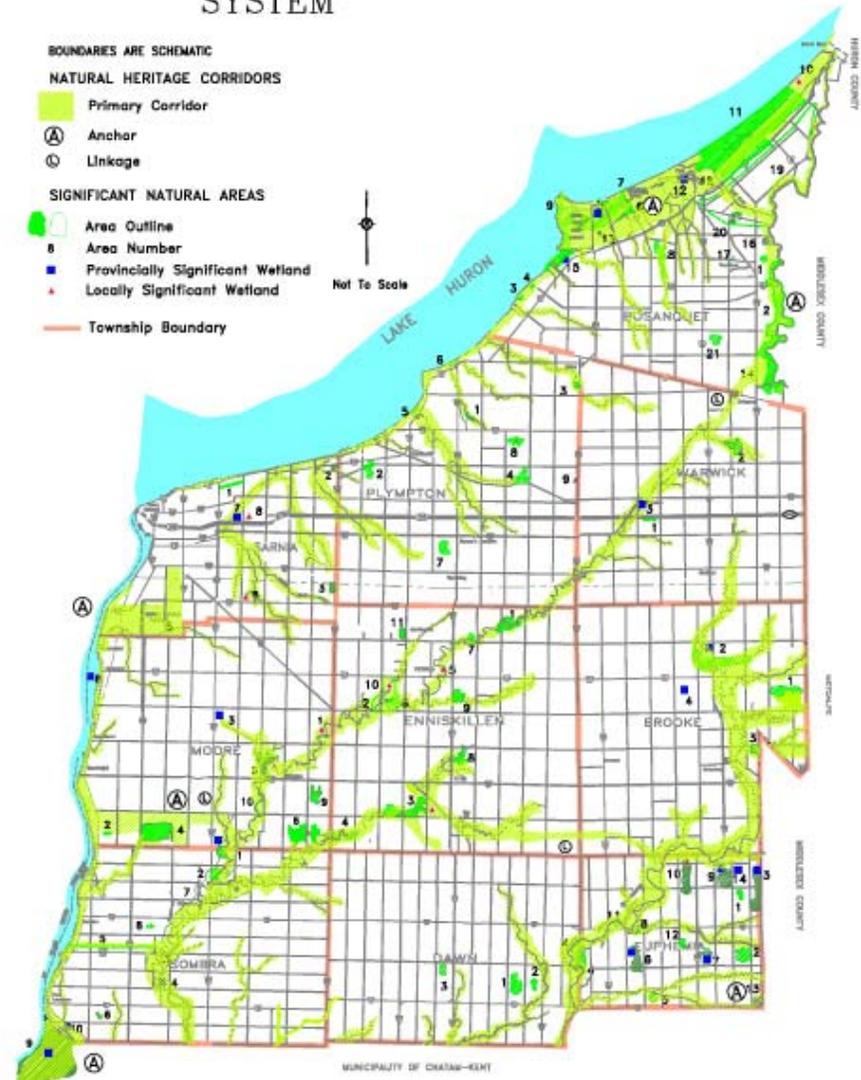
Data Sources:  
 Ontario Ministry of Natural Resources, 2007  
 Nature Conservancy of Canada, 2005  
 Nature Heritage Information Centre, 2005  
 Date: June 15, 2007  
 GW

Only ~13% natural cover in Lambton & Middlesex...

but >30% natural cover in Pinery – Port Franks area

# COUNTY OF LAMBTON OFFICIAL PLAN NATURAL HERITAGE SYSTEM

MAP 2



Click on the map to zoom out



Data provided by: Ontario Ministry of Natural Resources



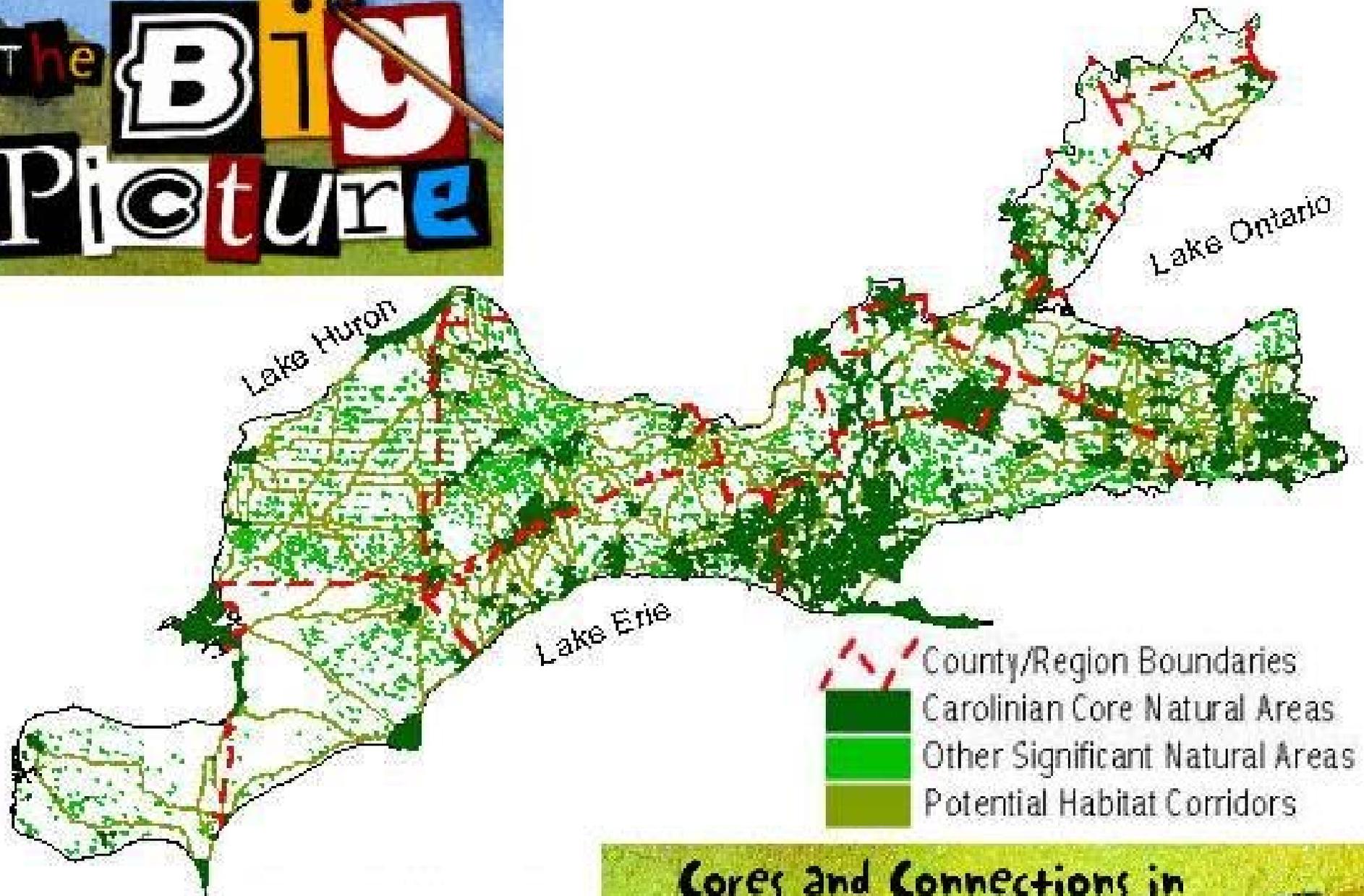
Imagery provided by: GeoBase® / COMAP

# Protected/Recognized Natural Areas

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- ❑ **Kettle & Stony Point First Nation ~1,800 ha**
- ❑ **An original Carolinian Canada site – 638 ha**
- ❑ **Private Nature Reserves (NCC / Land Trusts) – 99 ha**
- ❑ **Provincially Significant Life Science ANSI – 2,764 ha**
- ❑ **Provincially Significant Earth Science ANSI – 1 ha**
- ❑ **Provincially Significant Wetlands – 142 ha**
- ❑ **Important Bird Area – 7,200 ha**
- ❑ **Provincial Park (Nature Reserve Zone) – 372 ha**
- ❑ **Provincial Park (Natural Environment) – 2,532 ha**
- ❑ **Conservation Authority Areas – ~77 ha**
- ❑ **Provincial Park (Recreation) – 56 ha**
- ❑ **Lambton County Heritage Forest – 237 ha**

# The Big Picture



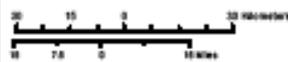
## Cores and Connections in Carolinian Canada

# Carolinian Life Zone

## Final Hotspot Analysis



Scale 1:1,500,000



**Disclaimer:**  
This map is illustrative only. Do not rely on it as being a precise indicator of privately-owned land, routes, locations of features, nor as a guide to navigation.

This map may contain omissions or errors.

**Data Sources:**  
Nature Conservancy of Canada - Ontario Region, 2006  
Ministry of Natural Resources (MNR), 2004  
Natural Heritage Information Center (NHIC), 2004  
Department of Fisheries and Oceans (DFO), 2007

Projection: Lambert Conformal Conic, NAD 83

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**Figure 5.1: Broad and Localized Species & Communities Hotspot Locations  
Carolinian Life Zone**

Includes All NHIC and DFO Tracked Species & Communities

Carolinian Life Zone (Ecoregion 7E)

**Hotspot Distributions**

Priority Habitat Stewardship Landscapes

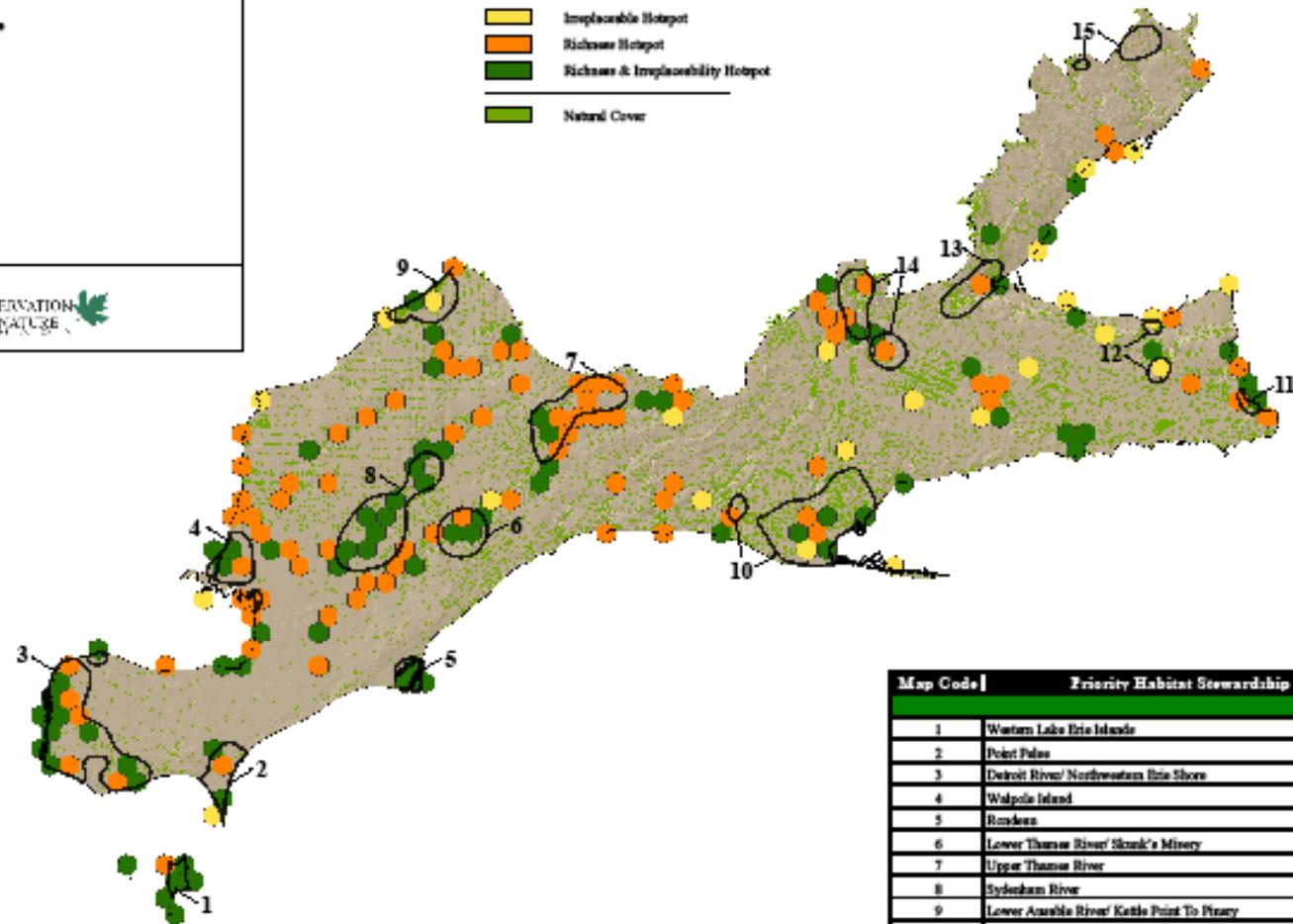
**Priority Habitat Stewardship Sites**

Implaceable Hotspot

Richness Hotspot

Richness & Implaceability Hotspot

Natural Cover



Map Code	Priority Habitat Stewardship Landscapes
1	Western Lake Erie Islands
2	Point Pelee
3	Detroit River/ Northwestern Erie Shore
4	Walpole Island
5	Rockies
6	Lower Thames River/ Skunk's Misery
7	Upper Thames River
8	Sydenham River
9	Lower Anabelle River/ Kettle Point To Peasey
10	Long Point Wetlands/ Norfolk Forests
11	Niagara Gorge
12	Short Hills
13	Dundas Valley
14	Grand River/ Grand River Forests
15	Upper Rouge River

# Ecological Context: Port Franks Forested Wetlands and Dunes ANSI

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- ❑ Selected in early 1980s as a provincially significant ANSI
- ❑ Contains a rich assemblage of wetlands, including shallow ponds, marshes, wet meadows, shrub thickets, treed swamps and bog elements along a broad and long lowland south of the cottage area along the dunes, extending west to link with Moon and Bio Lakes.
- ❑ In the southern portion, forested dunes dominated by oak and pine occur, as well as an area of floodplain along Mud Creek, where Carolinian, prairie and northern flora occur.
- ❑ Includes the Lambton County Forest, Nature Conservancy of Canada properties, and extensive areas of private land in both developed and naturally-vegetated conditions.

# Dominant Environmental Processes

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- Minimum Dynamic Area (forest cover)
  - Inland forests are too fragmented to theoretically withstand natural disturbances – restoration required.
  - Fire-successional dune woodlands and savannahs have different natural disturbance regime.
- Hydrology
  - Coastal hydrology controlled by Lake Huron; significant inland wetlands control flooding; major riparian system (Ausable River and tributaries)
- Fire
  - Natural fires (5-15 year intervals) no longer occur; succession causing loss of open areas
- Dune Processes
  - Longshore water currents and aeolian processes maintain a dynamic dune ecosystem

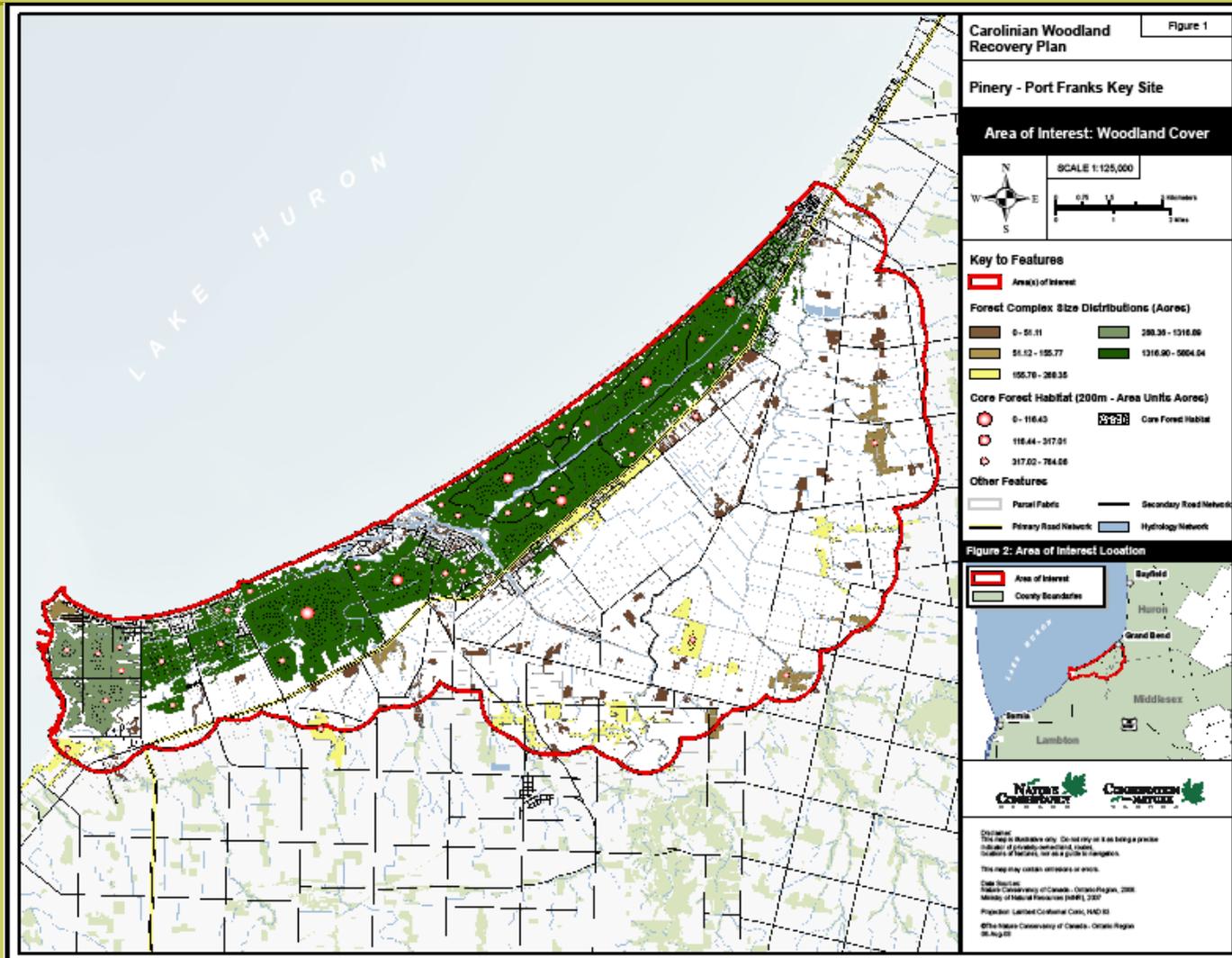
# Important Ecosystems: Forests and Woodlands

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The area has among the highest percentages of forest cover in Carolinian Canada:

- Largest forested area south of the Bruce Peninsula on the eastern shore of Lake Huron.
- Oak – pine woodlands predominate, with moister deciduous and mixed stands on lowlands and floodplains in Kettle Point – Pinery area
- But >85% of original forest system lost south and east of Highway 21

# Extensive forest cover in Port Franks – Pinery area, with patches >1,000 ha and lots of forest interior habitat



# Important Ecosystems: Sand Beaches, Dune systems, Savannahs

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## Sand Beaches, Dune systems, Savannahs

Full spectrum from:

sand beach to foredune, first dune ridge, interdunal wet meadows, and backdune communities of open to semi-closed oak forests, mixed forests, red cedar dune savannahs and dry oak-pine savannahs



# Important Ecosystems: Sand Beaches, Dune systems, Savannahs

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- ❑ The globally rare dune ecosystem that extends across the breadth of the area just inland from the Lake Huron shore is one of the largest in the ecoregion;
- ❑ Best example of dunes on the Ontario side of southern Lake Huron.
- ❑ The backdune areas support some of the best examples of Black Oak dominated tallgrass savanna in Ontario and North America.



# Important Ecosystems: Wetlands

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## □ Wetlands

- Kettle Point to Pinery: rich assemblage of dune swales, meadow marshes, shallow ponds, thicket swamps, treed swamps, shallow ponds, bog & fen elements
- Old Ausable Channel (rare fishes, community-based management plan in place)

Nearby:

- Gustin Grove Marsh (only coastal marsh on Canadian side of southern Lake Huron)
- Thedford Swamp (P.S. wetland), Thedford Bog, McGillivary Swamp, but most inland wetlands drained for agriculture

# Important Ecosystems: Aquatic Communities

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- ❑ The Ausable River watershed supports a diversity of fish and mussel species at risk (SAR).



# Globally Rare Ecosystem Types

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- Little Bluestem – Long-leaved Reed Grass – Great Lakes Wheat Grass Dune Grassland
- Dry Black Oak – White Oak Tallgrass Woodland
- Dry Black Oak - Pine Tallgrass Savanna
- Great Lakes Coastal Meadow Marsh
- Common Reed Grass Organic Shallow Marsh

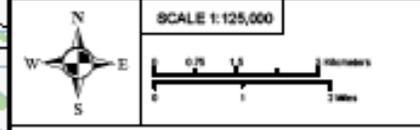
# “Hotspot” for Rare and Endangered Species

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- Ausable River – Kettle Point to Pinery area
  - ~220 occurrences of ~100 globally/provincially rare species
  
- At least 34 federally- and provincially-designated Species At Risk (SAR) have been recorded in the area within the past 30 years, with another dozen or so having occurred historically.

**Pinery - Port Franks Key Site**

**Area of Interest: SAR Locations**



- Key to Features**
- Area(s) of Interest
- Tracked Element Occurrences**
- Globally Significant Species
  - Species-at-Risk
  - Other Tracked Species
- Species-at-Risk (COSEWIC) labeled on the map.
- Infrastructure**
- Parcel Fabric
  - Primary Road Network
  - Secondary Road Network
- Other Features**
- Forest Cover
  - Hydrology Network

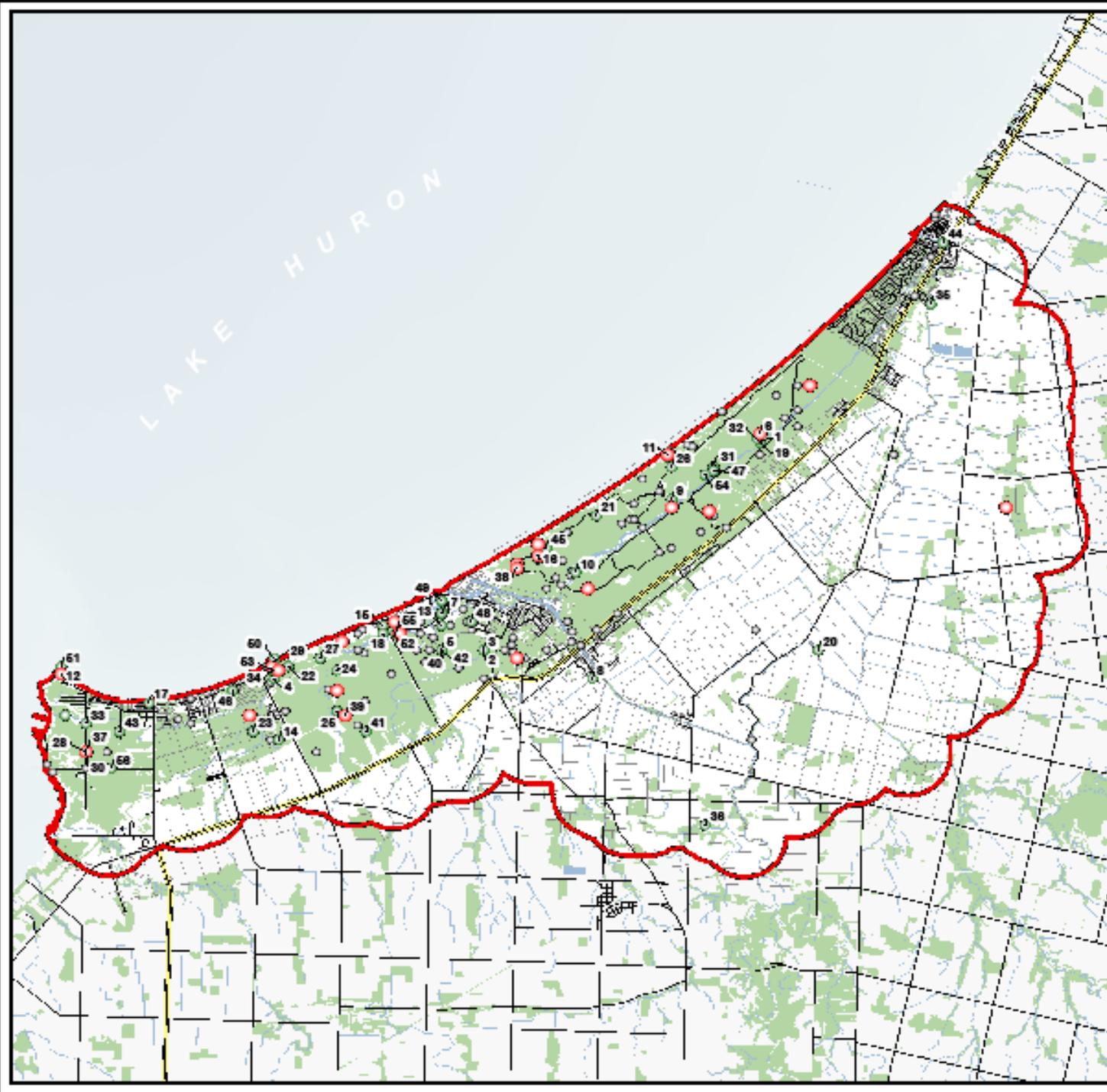
**Figure 2: Area of Interest Location**



Disclaimer:  
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Data Sources:  
Nature Conservancy of Canada - Ontario Region, 2008  
Ministry of Natural Resources (MNR), 2007  
Nature Heritage Information Centre (NHIC), 2005

Prepared: Lambert Contracting Co., NAD 83  
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26 Aug 07



# Significant Species - at a glance

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- ❑ **Birds:** Acadian Flycatcher, Bald Eagle, Cerulean Warbler, Hooded Warbler, Louisiana Waterthrush, Red-headed Woodpecker, Red-shouldered Hawk, (+ Piping Plover?)
- ❑ **Reptiles:** Eastern Hog-nosed Snake, Eastern Ribbonsnake, Five-lined Skink, Spotted Turtle, Spiny Softshell, Stinkpot, (+Blue Racer?)
- ❑ **Plants:** Heart-leaved Plantain, Dwarf Hackberry, Bluehearts, Green Dragon, Pitcher's Thistle
- ❑ **Mammals:** Woodland Vole, (+American Badger?)
- ❑ **Fish:** Pugnose Shiner, Spotted Sucker
- ❑ **Invertebrates:** many globally rare insects (dunes, savannahs), freshwater mussels (+Karner Blue?)

# Heart-leaved Plantain – Endangered

- vernal streams in deciduous forest



# Pitcher's Thistle – Endangered Open sand dunes

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# Bluehearts – Endangered Interdunal swales



# Eastern Ribbonsnake - Special Concern - wetlands

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# Acadian Flycatcher – Endangered deciduous forest ‘interior’

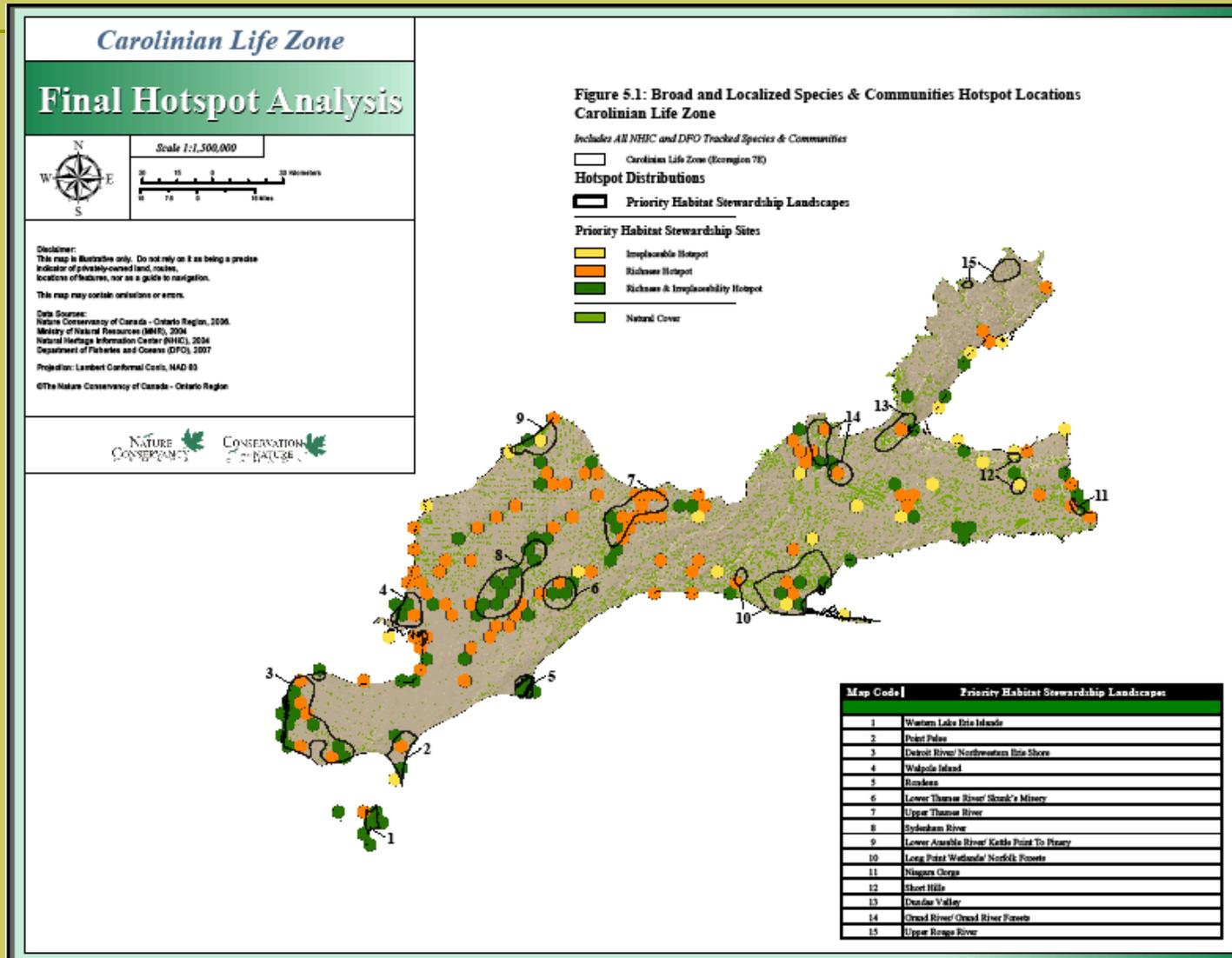
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Hooded Warbler – Threatened / Special  
Concern – extensive deciduous forests



# Conservation Action Planning



# AusableRiver – Kettle Point to Pinery Conservation Action Plan (2008- )

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□ A collaborative effort between:

- Carolinian Canada Coalition
- Ausable Bayfield Conservation Authority
- St. Clair Region Conservation Authority
- Chippewas of Kettle and Stony Point First Nation
- Ontario Parks
- Rural Lambton Stewardship Network
- Municipality of Lambton Shores
- Lambton Wildlife Incorporated
- Lambton Federation of Agriculture,
- & others

aiming to achieve community outreach, landowner contact, field research, and conservation and restoration successes over the long term.

# Biodiversity Targets

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- 1. Riparian Systems (including Old Ausable Channel)**
- 2. Open Dunes and Sand Beaches**
- 3. Dry Oak – Pine Woodlands**
- 4. Prairies and savannas**
- 5. Coastal Marshes**
- 6. Meadow Marshes and Fens**
- 7. Swamps**
- 8. Forests**
- 9. Heart-leaved Plantain & other critically imperilled species**

# Some Threats to Consider:

residential & commercial development, roads, infrastructure;  
impacts of recreational activities;  
Invasive species & problematic native species;  
incompatible forestry;  
natural succession / fire suppression;  
agricultural runoff;  
collecting of rare plants;  
poaching of reptiles.



Miigwech – Thank You!

