

# Coastal Dune Protection along Ontario's Great Lakes Coast

Great Lakes Dune Conference, Traverse City, Michigan

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J. Childs, WLU



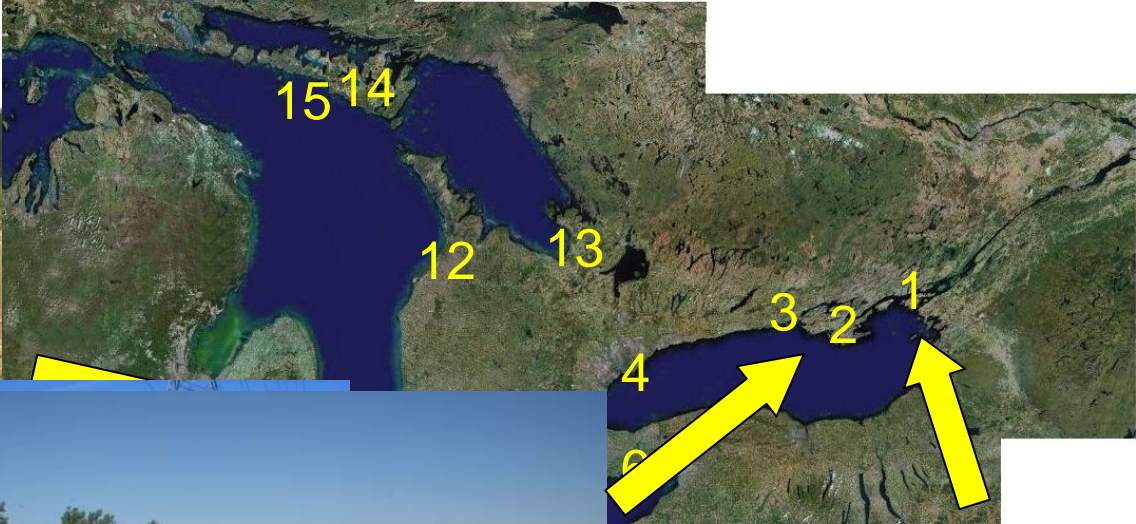


# Dunes in Ontario

- Coastal – very small % of coastline
- Located:
  - At the head of small coves or large bays
  - And on Baymouth barriers and Tombolo bar systems
- Dune systems originated over the last 3000 – 5000 years and many are still evolving
  - Formation is the result of topography, glacially deposited and reworked sediment sources, prevailing westerly winds, lake level changes and more recently human activities



# Coastal Dune Locations of Ontario

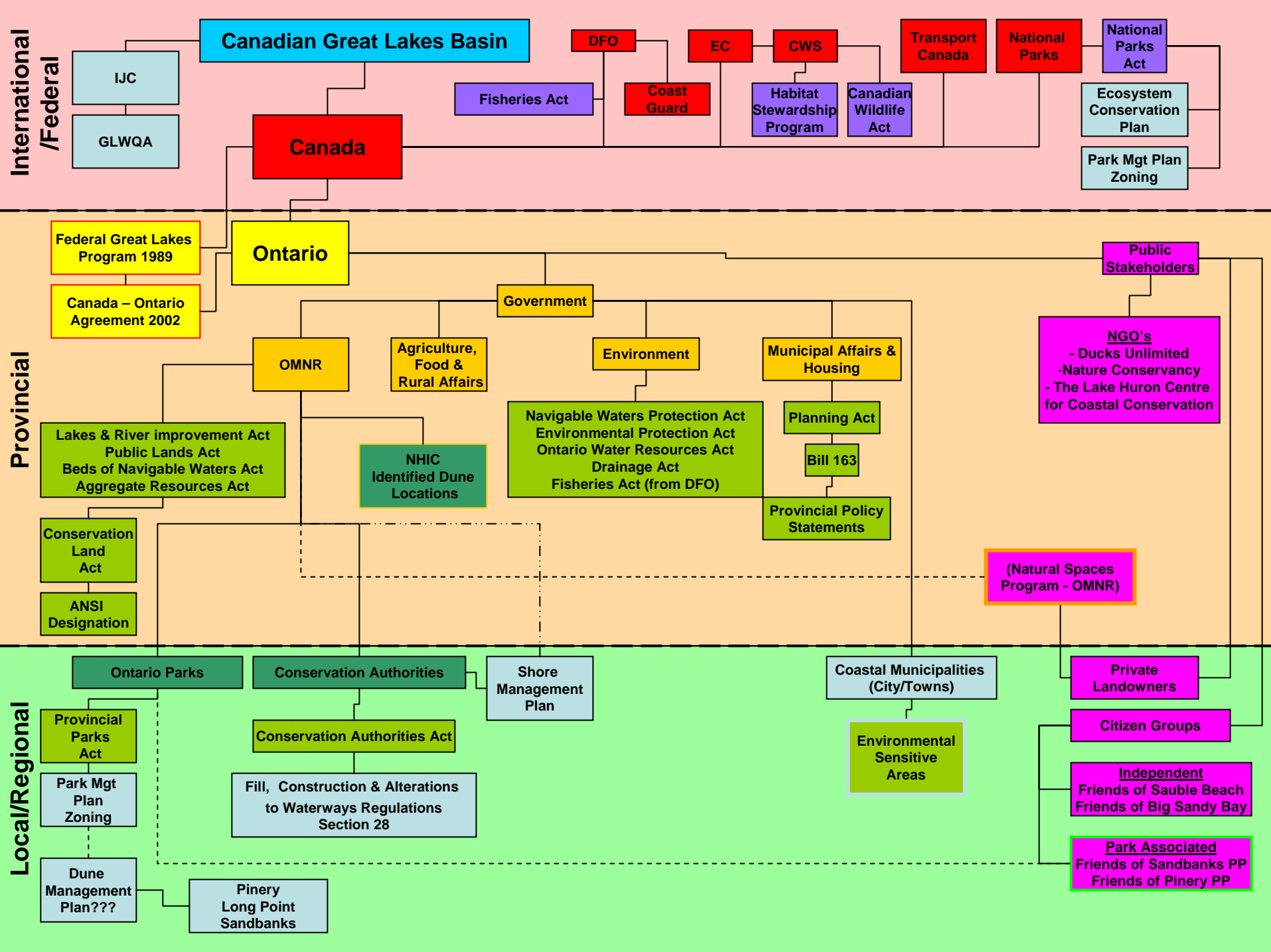




# Coastal Management

- No comprehensive coastal management legislation at National level
  - Ex - ICZM (USA)
- Also no over riding legislative document at the Provincial level for the protection of coastal dunes
  - Dune Protection and Management Act (Michigan)
- Coastal Management in Ontario involves a large number of agencies and stakeholders within the three levels of government





# National Parks

- Park Management plan
  - primary management tool is zonation of the park
  - Park divided into different zones with varying levels of protection

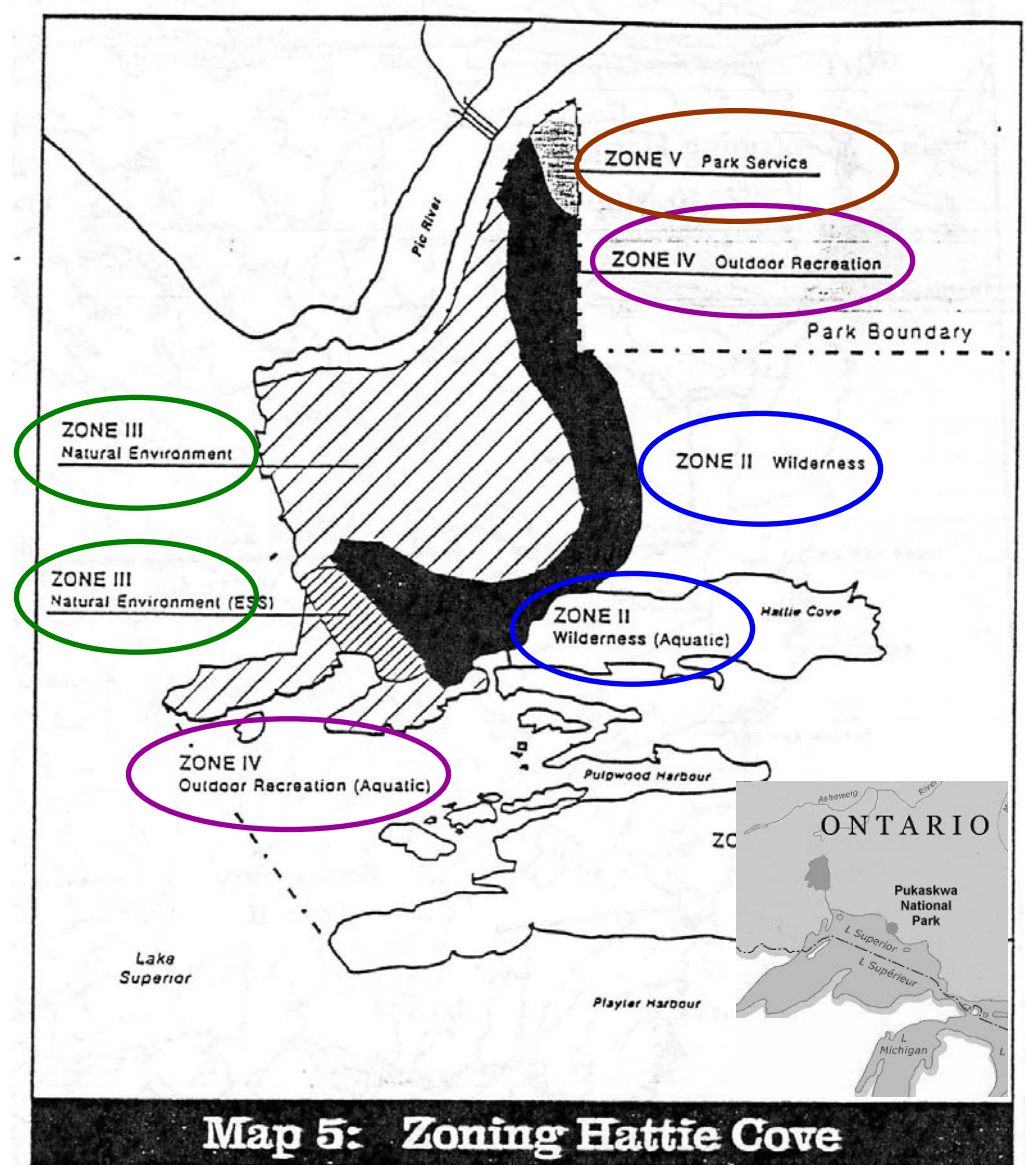
**Zone 1**

**Zone 2 (Terrestrial/Aquatic)**

**Zone 3**

**Zone 4**

**Zone 5**



# Provincial Parks

- Park Classification
  - Categorized as one of six classes
    - Wilderness, Nature Reserve, Natural Environment, Waterway, Historical and Recreational
  - Six zones within the system
    - Nature reserve, Wilderness, Natural environment, Historical, Access, Development

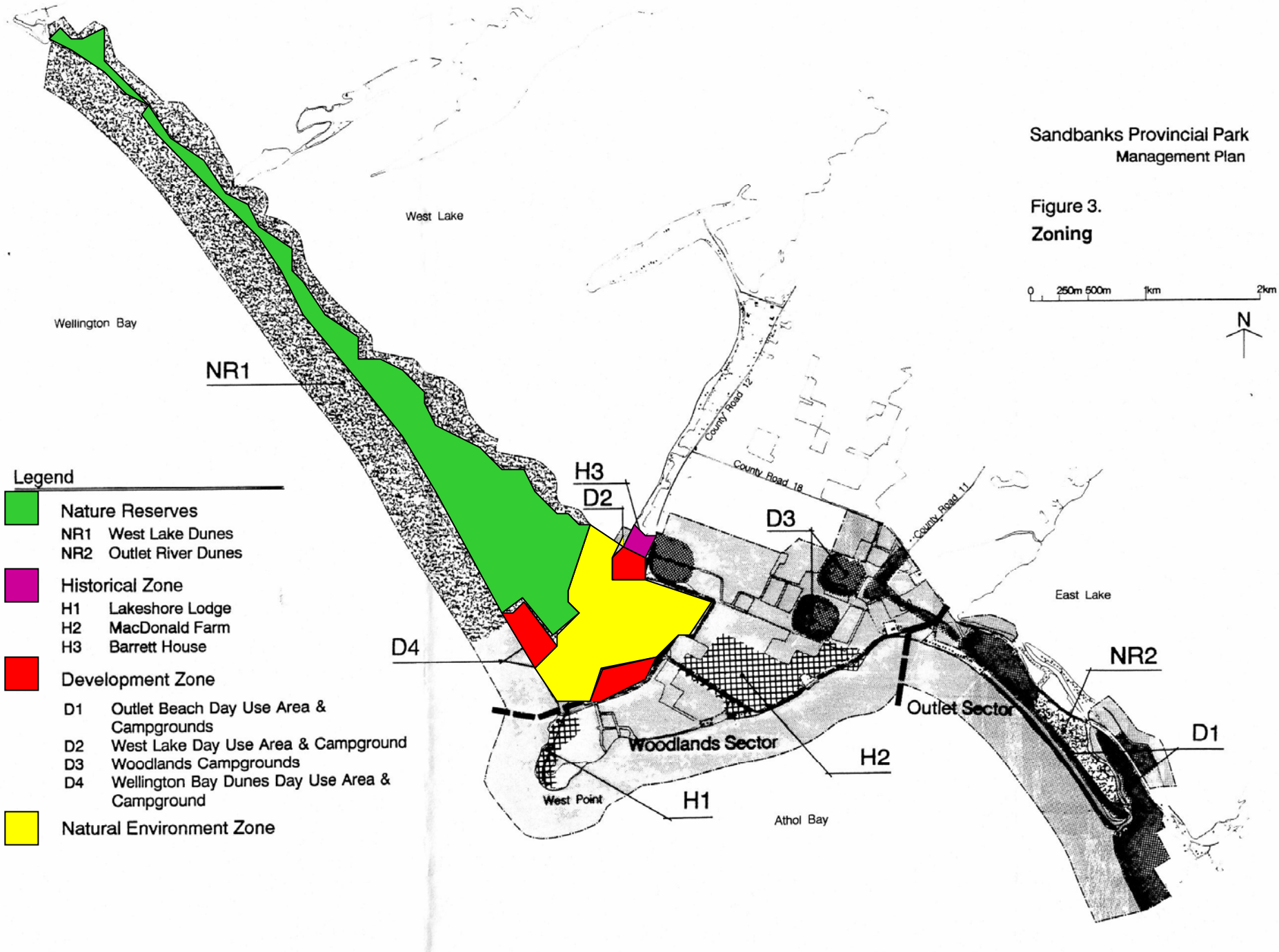




Sandbanks Provincial Park  
Management Plan

Figure 3.  
Zoning

0 250m 500m 1km 2km

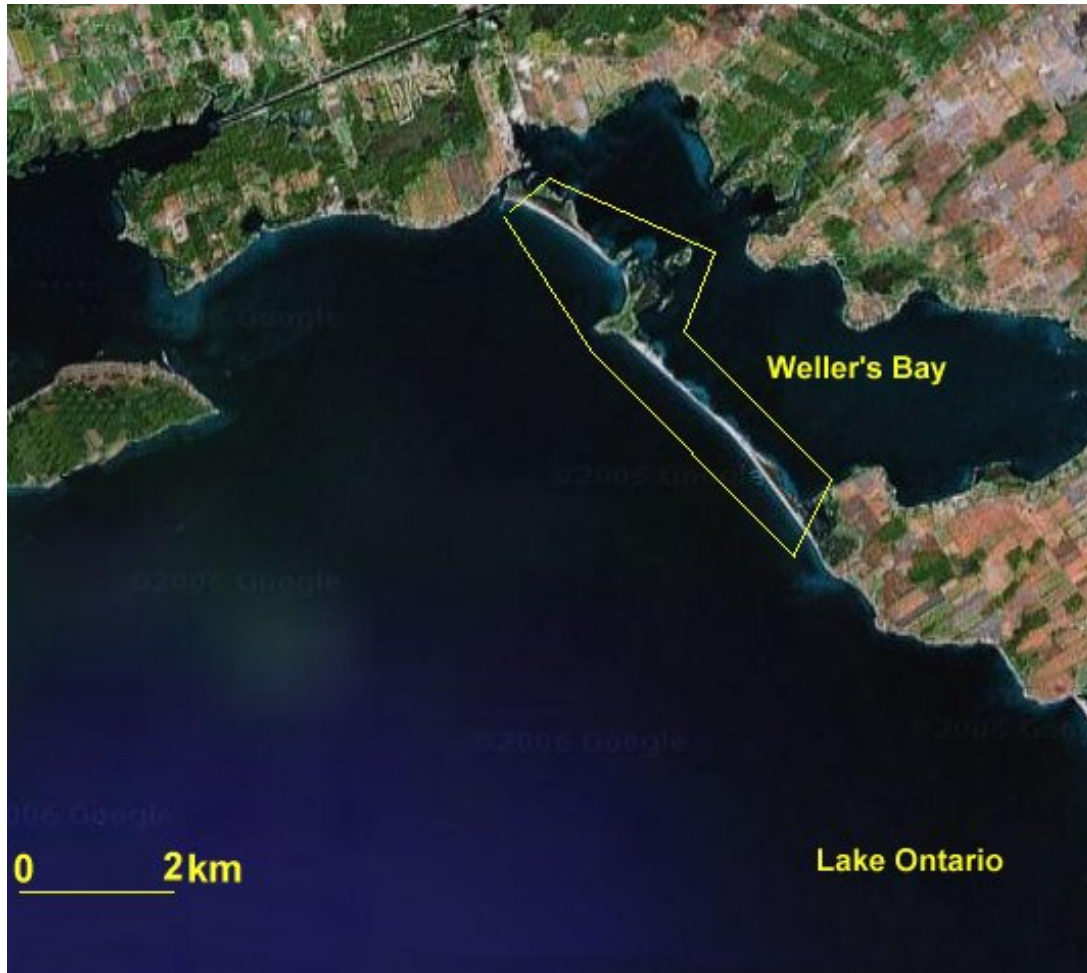


Legend

- Nature Reserves
  - NR1 West Lake Dunes
  - NR2 Outlet River Dunes
- Historical Zone
  - H1 Lakeshore Lodge
  - H2 MacDonald Farm
  - H3 Barrett House
- Development Zone
  - D1 Outlet Beach Day Use Area & Campgrounds
  - D2 West Lake Day Use Area & Campground
  - D3 Woodlands Campgrounds
  - D4 Wellington Bay Dunes Day Use Area & Campground
- Natural Environment Zone



# National Wildlife Areas (NWA)

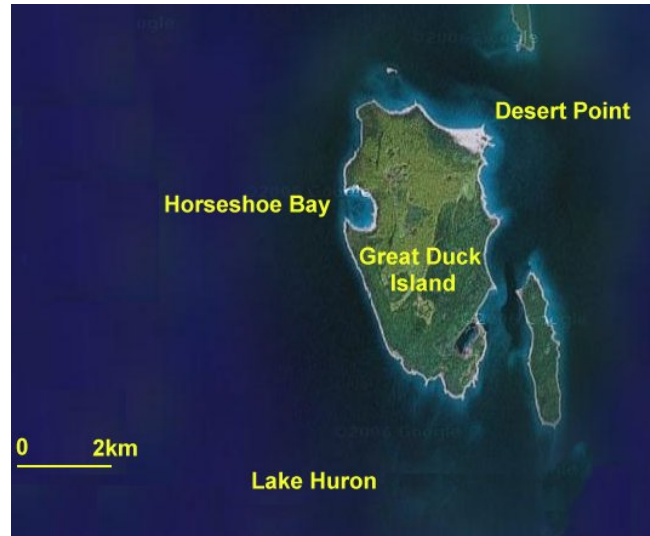


- Environment Canada's Protected Areas Network
- Canadian Wildlife Service
  
- “Nationally significant” habitat for migratory birds, support wildlife or ecosystems at risk, or represent rare or unusual wildlife habitat or a biogeographic region”
  
- Weller's Bay NWA
- ‘...maintained in its natural state...’



# Areas of Natural Scientific Interest (ANSI)

- MNR able to designate an area of public or private land as one of Natural Scientific Interest
- An ANSI represents an 'areas of land and water containing natural landscapes or features that have been identified by the MNR as having values related to protection, natural heritage appreciation, scientific study or education'
- Public Land
- Private Land
- All or part of seven dune systems on the Great Lakes have been designated as ANSI





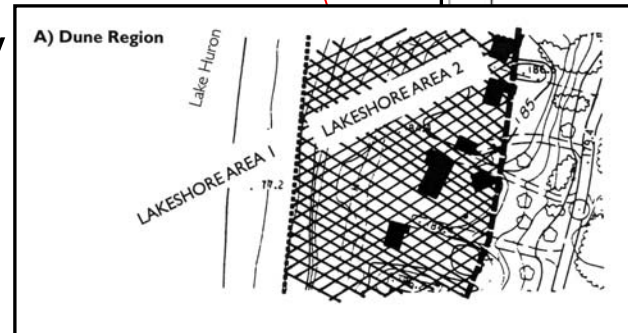
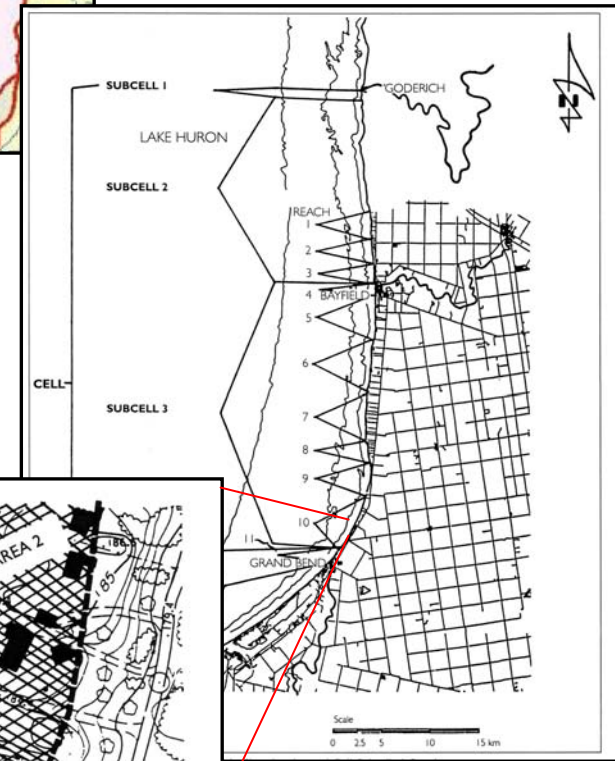
# Conservation Authorities (CA's)

- In the late 1980's it was decided that longer term actions were needed to deal with shoreline hazards
- The responsibilities of the CA's to regulate development along the waterways within their watersheds were extended to include the Great Lakes Shoreline under the Shoreline Management Program
- Under the program CA's to create Shoreline Management Plans (SMP)
- Main goal of the program was to establish consistent shoreline flooding and erosion hazard regulations as well as land use policy within the coastal zone of the Great Lakes
- Intended as an advisory document to work with other planning documents



# Ausable-Bayfield Conservation Authority

- Significant length of coastline has beach dune system
- Plan identifies objectives, goals, issues for the coast and provides a detailed description of the shoreline on a reach by reach basis
  - Based on littoral cell delineation
- Create maps for planning
- Plan recognizes the sensitivity of the dune environment
  - Work to protect and maintain the entire littoral cell





# Alternative Protection Strategies

- Friends of Big Sandy Bay
- Toronto Bay Initiative
  
- Habitat Stewardship Program (Canada)
- Natural Spaces Program (Ontario)



# Dune Management

- Settlement around coastal dunes was often accompanied by timber harvesting, sand extraction & grazing
- Many parks with dunes originally managed for recreation
- Shift from more traditional methods of management as public attitudes toward natural spaces changed
- Management activities now attempting to manage for the larger ecosystem





# Acknowledgements

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