Lake Ontario
Biodiversity Conservation Strategy

June 24, 2008

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Summary of Presentation

Background

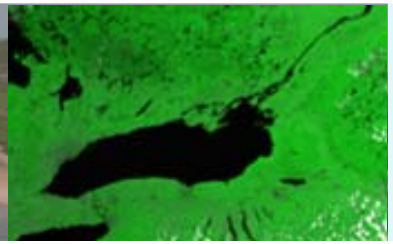
- Lake Ontario Lake-wide Management Plan

Biodiversity Conservation Strategy

- Project Scope & Objectives
- Conservation Targets & Threats
- Coastal wetland key attributes and indicators
- Identifying Critical Habitats

Applications & Next Steps



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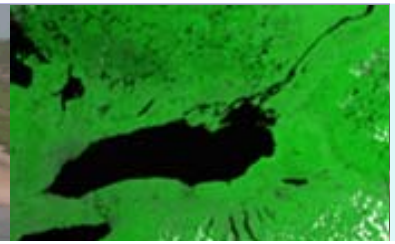
Conservation Strategy

Lake Ontario Lakewide Management Plan

Lake Ontario Ecosystem Goals

- The Lake Ontario Ecosystem should be maintained and as necessary restored or enhanced to support self-reproducing diverse biological communities.
- The presence of contaminants shall not limit the uses of fish, wildlife, and waters of the Lake Ontario basin by humans and shall not cause adverse health effects in plants and animals.
- We as a society shall recognize our capacity to cause great changes in the ecosystem and we shall conduct our activities with responsible stewardship for the Lake Ontario basin.



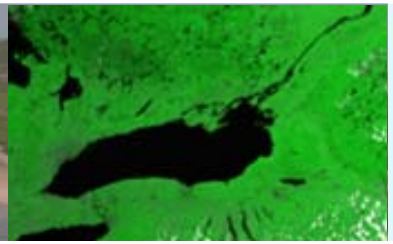



Lake Ontario Biodiversity Conservation Strategy

Project Start-up

- The Nature Conservancy (NY) and Nature Conservancy of Canada (ON) tasked with providing a process for partners to develop the strategy (March 2006)
- Assemble & review existing information
- Establish a project Steering Committee
- Develop a vision for the project
- Engage Lake Ontario partners using the Conservation Action Planning Process



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Conservation Action Planning (CAP) Process

Defining Your Project

- Project people
- Project scope & focal targets

Developing Strategies & Measures

- Target viability
- Critical threats
- Situation analysis
- Objectives & actions Measures

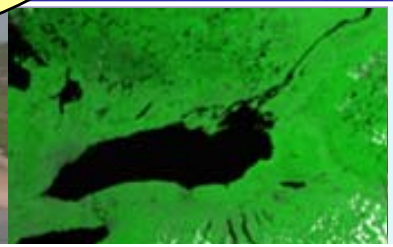
Implementing Strategies & Measures

- Develop workplans
- Implement actions
- Implement measures

Using Results to Adapt & Improve

- Analyze actions & data
- Learn from results
- Adapt project
- Share findings



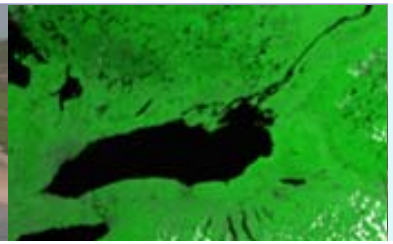
Lake Ontario Biodiversity Conservation Strategy

Four workshops

- June 21-22 2006
  Kingston, ON: scope, targets
- October 4-5 2006
  Kingston, ON: threats
- February 28 – March 1 2007
  Buffalo, NY: strategies
- December 5-6 2008
  Niagara-in-the-Lake, ON: place-based actions & refine strategies

Information and maps from all workshops can be found on-line (Google: ConserveOnline Lake Ontario)



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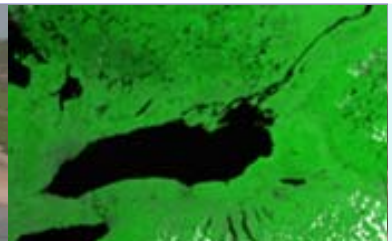
Project Team

- Conservation Ontario*
- Cornell University*
- Environment Canada*
- Environmental Protection Agency*
- Department of Fisheries and Oceans*
- NYSDEC*
- NYS Department of State*
- Nature Conservancy of Canada
- Ontario Ministry of Natural Resources*
- Parks Canada*
- SUNY Environmental Science and Forestry
- SUNY Brockport*
- US Army Corps of Engineers
- The Nature Conservancy
- Tug Hill Commission
- US Fish and Wildlife Service
- University of Guelph
- St. Regis Mohawk Tribe
- Ducks Unlimited

*** Steering Committee**

Funding:
EPA GLNPO, EPA Region 2
Canada-Ontario Agreement
Environment Canada
The Nature Conservancy
The Nature Conservancy of Canada



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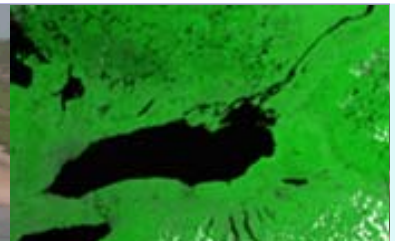
Project Objective & Scope

The objective of this project is to develop **bi-national strategies for conserving and restoring the biological diversity of Lake Ontario, including its coastal habitats, pelagic and benthic zones, tributaries, and connecting channels.**

Since the focus of this project is to foster bi-national action to address the biota of Lake Ontario, the scope for recommended actions will include the **watersheds of tributaries to the extent that they affect the biodiversity of the lake.**



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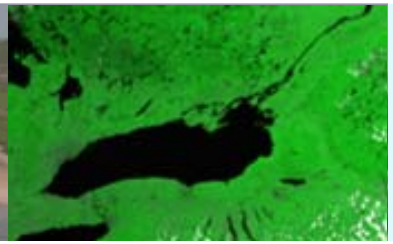
What are the **Conservation Targets** for Lake Ontario?

1. Benthic offshore system
2. Offshore pelagic system
3. Nearshore zone
4. Coastal wetlands
5. Coastal terrestrial systems
6. Native migratory fish
7. Rivers, estuaries & connecting channels
8. Islands

= Biodiversity of Lake Ontario



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1. Benthic offshore system
2. Offshore pelagic system
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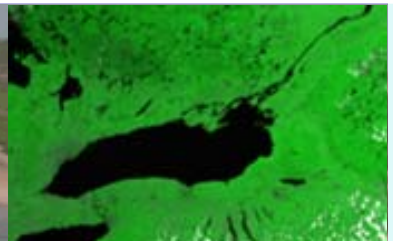
DEFINITION

NESTED TARGETS

KEY ATTRIBUTES

INDICATORS



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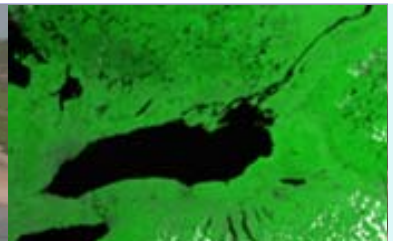
What **Threats** are facing the targets?

- Threats: the proximate activity or process that have caused, are causing or may cause the destruction, degradation and/ or impairment of a target
- Linked to the health of targets
- Ranked based on:
  - Scope
  - Severity
  - Irreversibility



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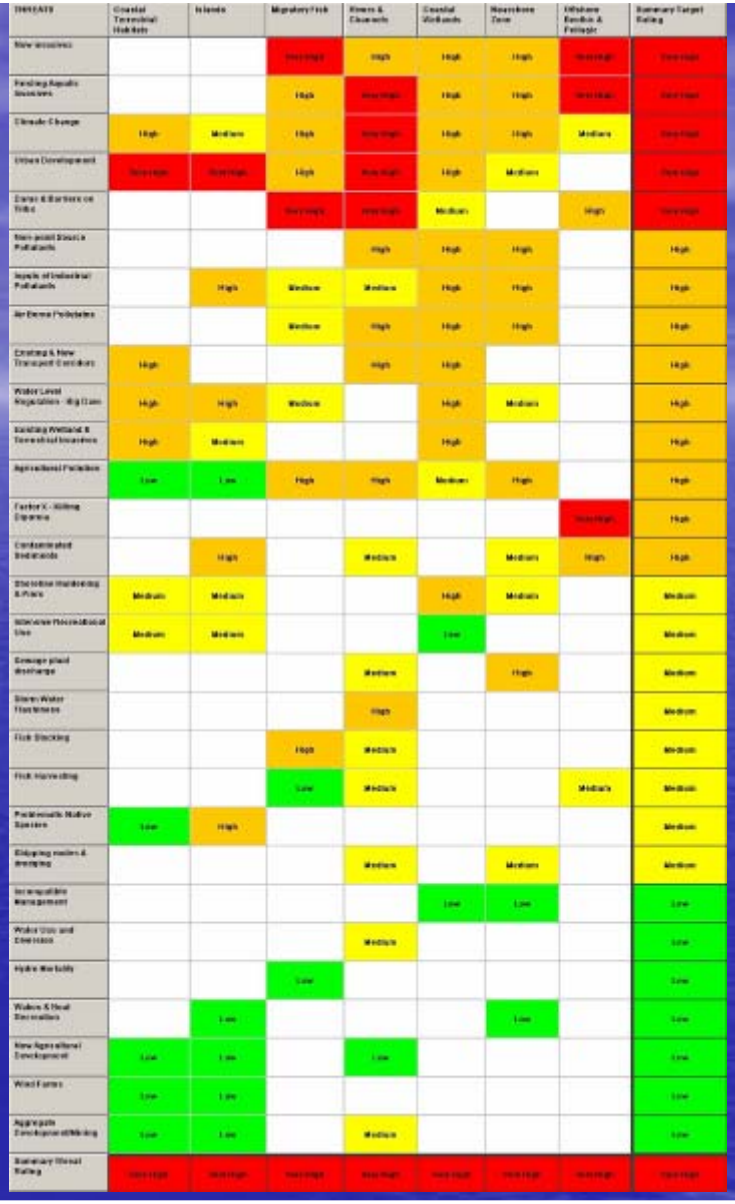
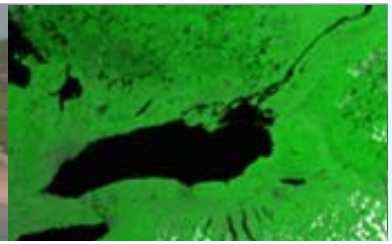
Ranking of Threats to Targets

- Identified highest overall threats, and highest threats to each target

1. Aquatic invasive species
2. Incompatible development (including shoreline hardening)
3. Non-point source pollution
4. Climate change
5. Dams and barriers





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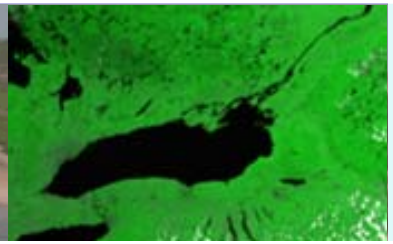
What are our **Strategies** to improve the health of our targets and/ or reduce threats?

- Strategies based on: 1)maintaining and enhancing the health of targets and, 2) abating the highest threats
- Linking of targets, threats and strategies
- Strategies will be integrated into existing programs where possible
- Will include both lakewide and place-based assessments and strategies



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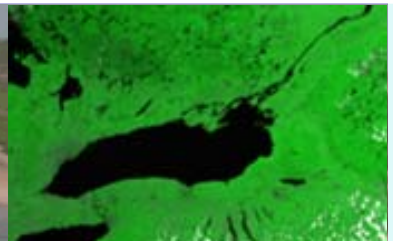
Where do these strategies need to happen?

- What are the **places** where strategies will most benefit coastal wetlands; nearshore zone; rivers, estuaries, and connecting channels; coastal terrestrial habitats; and migratory fishes

- Drafted criteria to assess biological significance and condition
- Worked with experts to review criteria
- Used GIS to assess criteria
- Expert review at 4th workshop (priority places for “mappable” targets + priority strategies for those places)



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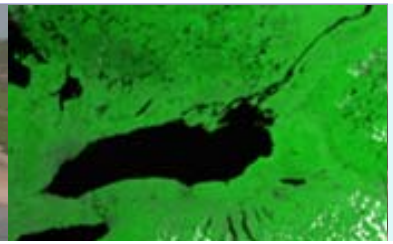
Watersheds
HUC 11 /Quaternary

Coastal Units
2 km inland



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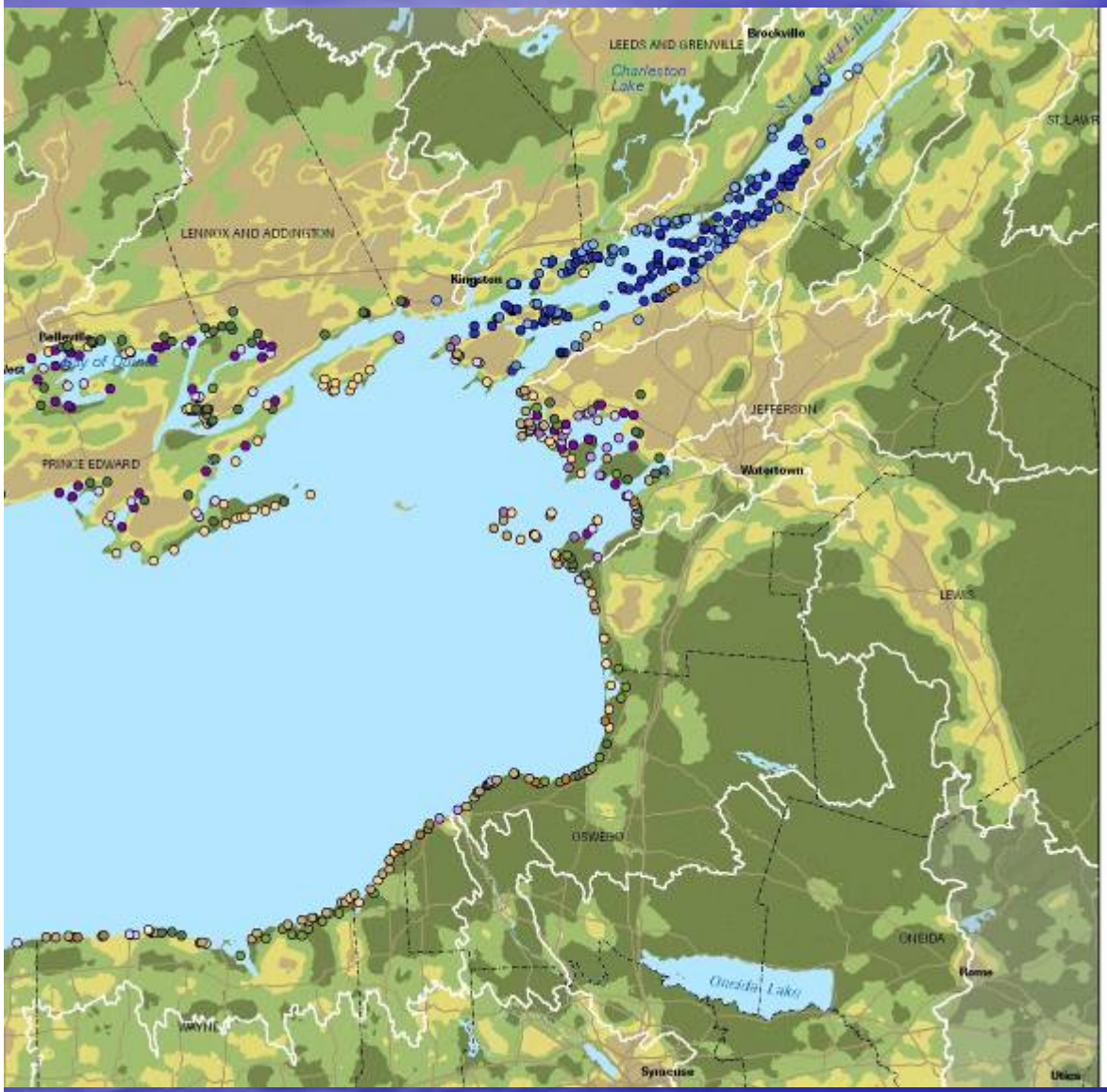
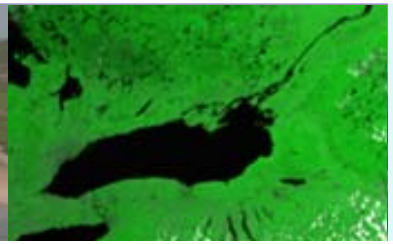


Coastal wetlands: key attributes

- connectivity among communities
- water quality
- water level fluctuations
- community architecture
- presence of keystone spp
- abundance/diversity wetland bird species
- abundance/diversity amphibian species
- size/extent of characteristic communities



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Coastal wetlands: indicators

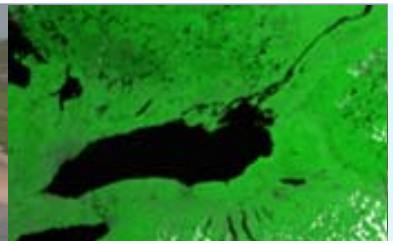
Biological significance (3 factors):

- Number of native wetland-associated species and natural communities
- Number of coastal wetland types
- Percent of coastal unit that is wetland

Condition (2 factors):

- Percent natural land cover within coastal unit
- Percent of shoreline with man made structures



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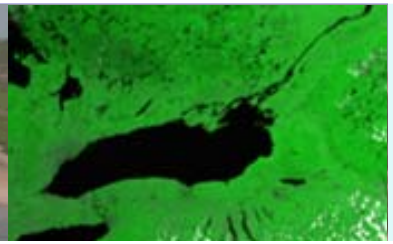
Sample criteria for geographic prioritization

Coastal wetlands

	Criteria	Assessment Unit	Notes / questions
Biological Significance	Number of native wetland-associated species and communities	Coastal unit	Units with high numbers of wetland-associated species and communities will be considered more biologically significant (Threshold for 'high' TBD after initial analysis).
Biological Significance	Number of coastal wetland types	Coastal unit	Units with high diversity of coastal wetland types will be considered more biologically significant.
Condition	Natural cover within coastal unit	Coastal unit	Same rule applies to coastal wetland, nearshore zone and coastal terrestrial targets



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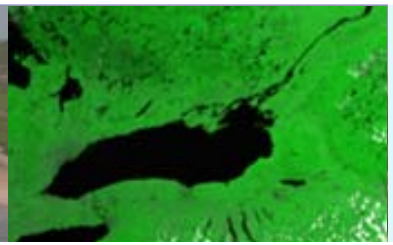

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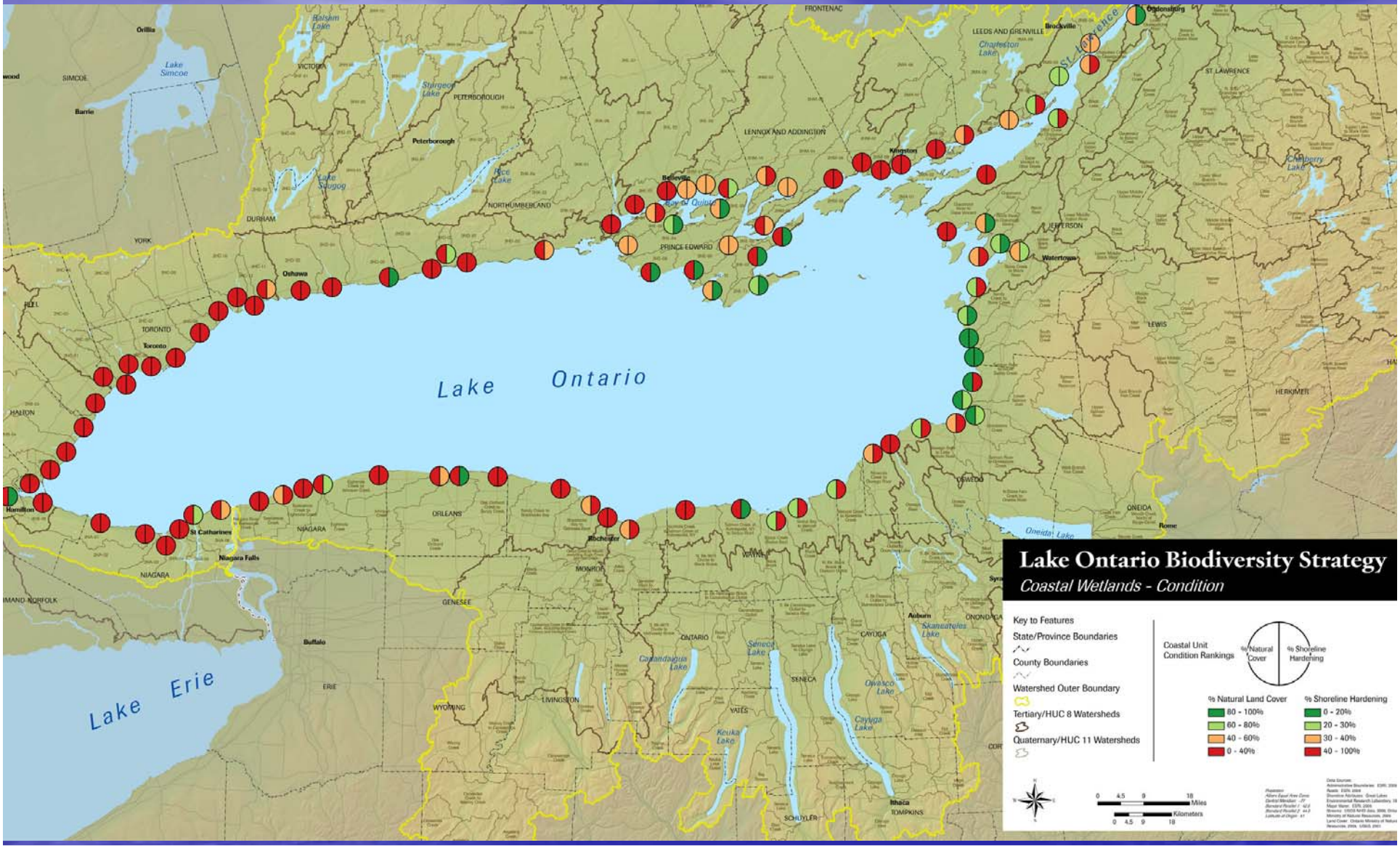




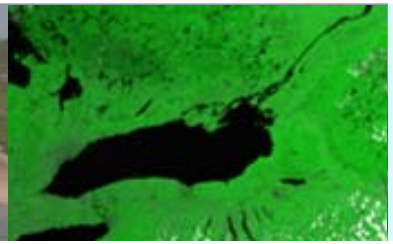

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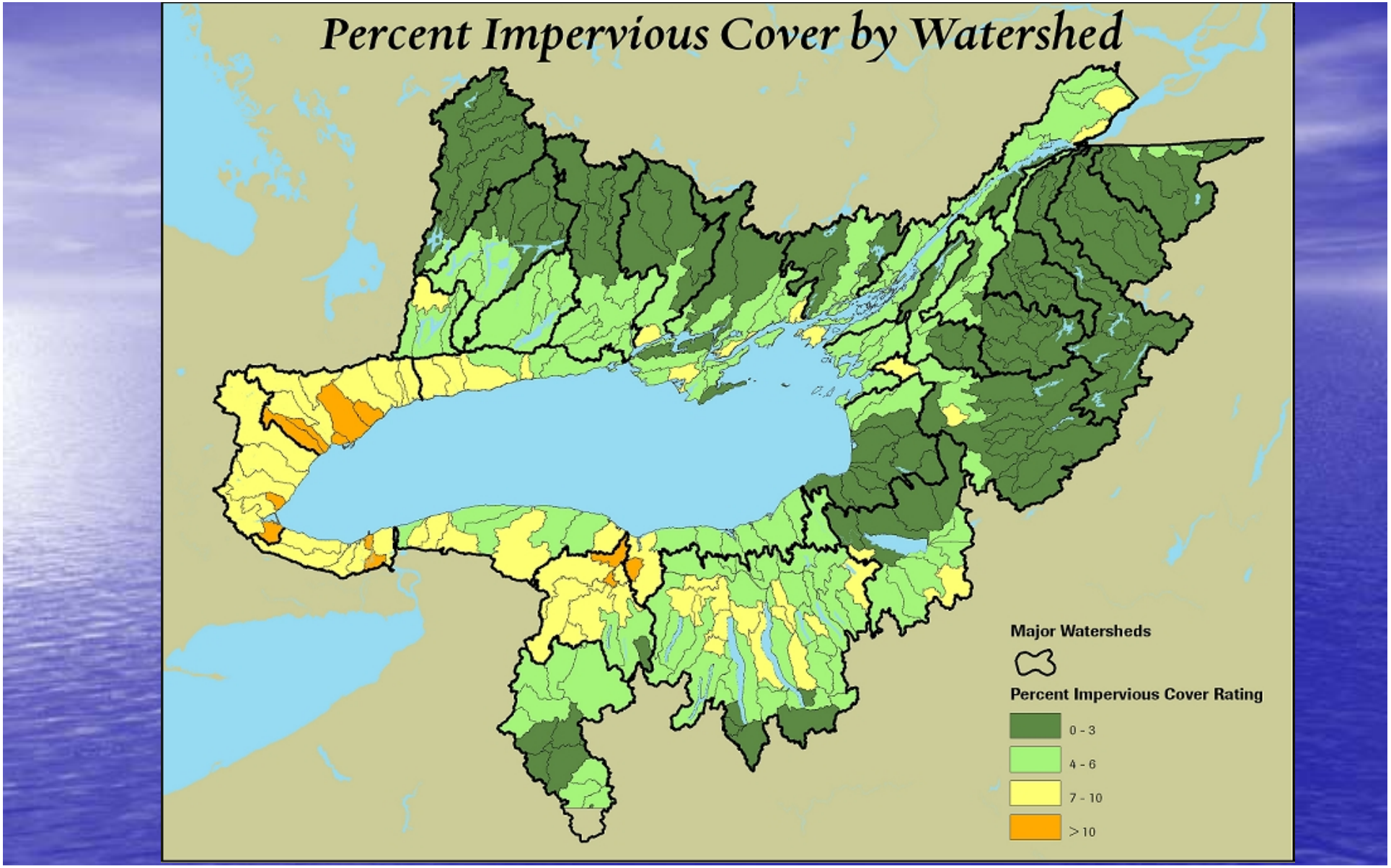




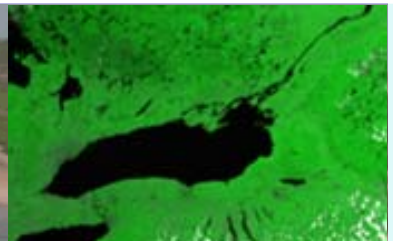

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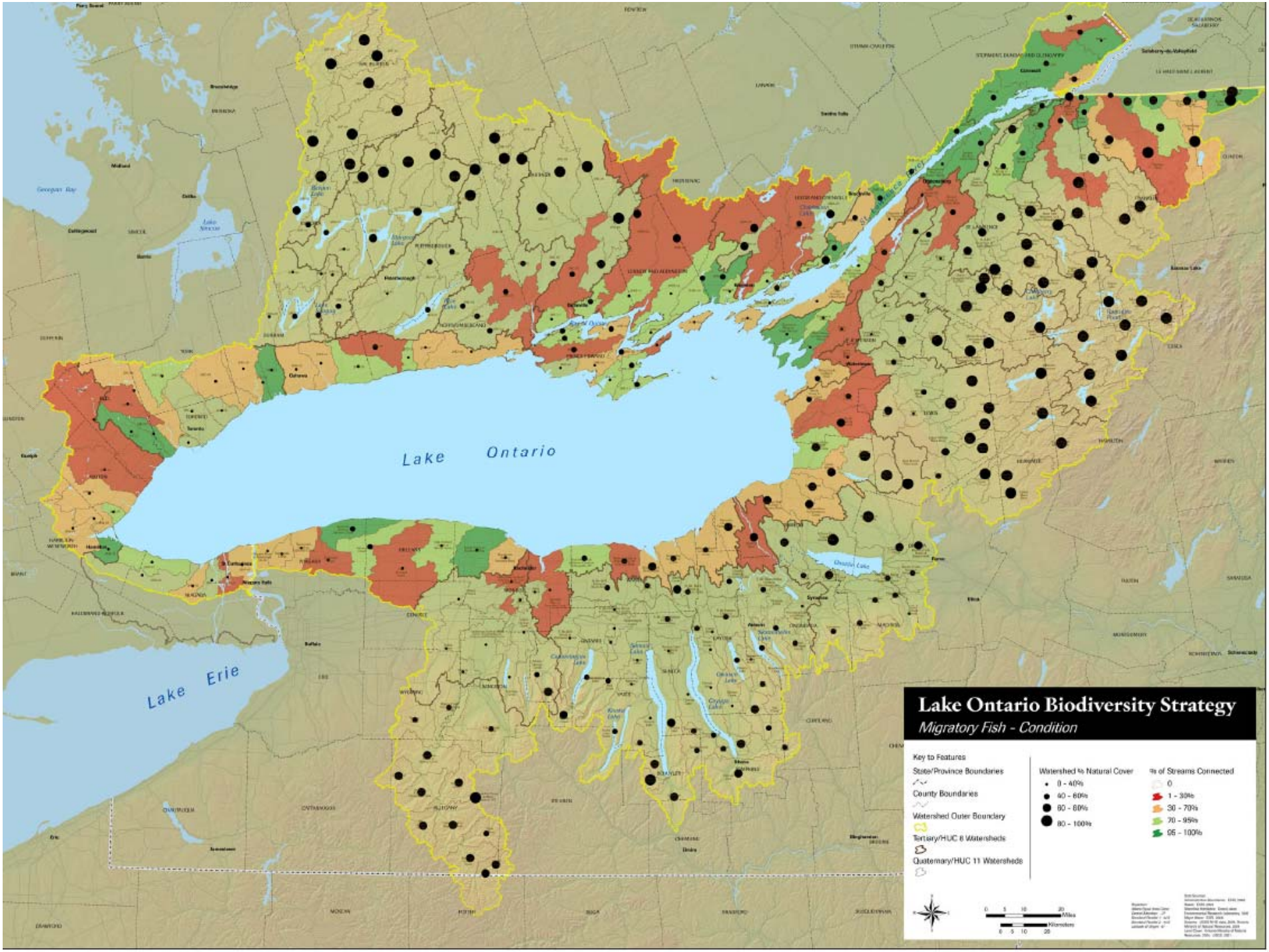
Lake Ontario
Lake Erie
Lake Ontario Biodiversity Strategy
Migratory Fish - Condition
Key to Features
State/Province Boundaries
County Boundaries
Watershed Outer Boundary
Tertiary/HUC 8 Watersheds
Quaternary/HUC 11 Watersheds
Watershed % Natural Cover
0 - 40%
40 - 60%
60 - 80%
80 - 100%
% of Streams Connected
0
1 - 30%
30 - 70%
70 - 95%
95 - 100%
Miles
Kilometers

Proposed Action Sites, Lake Ontario Biodiversity Strategy

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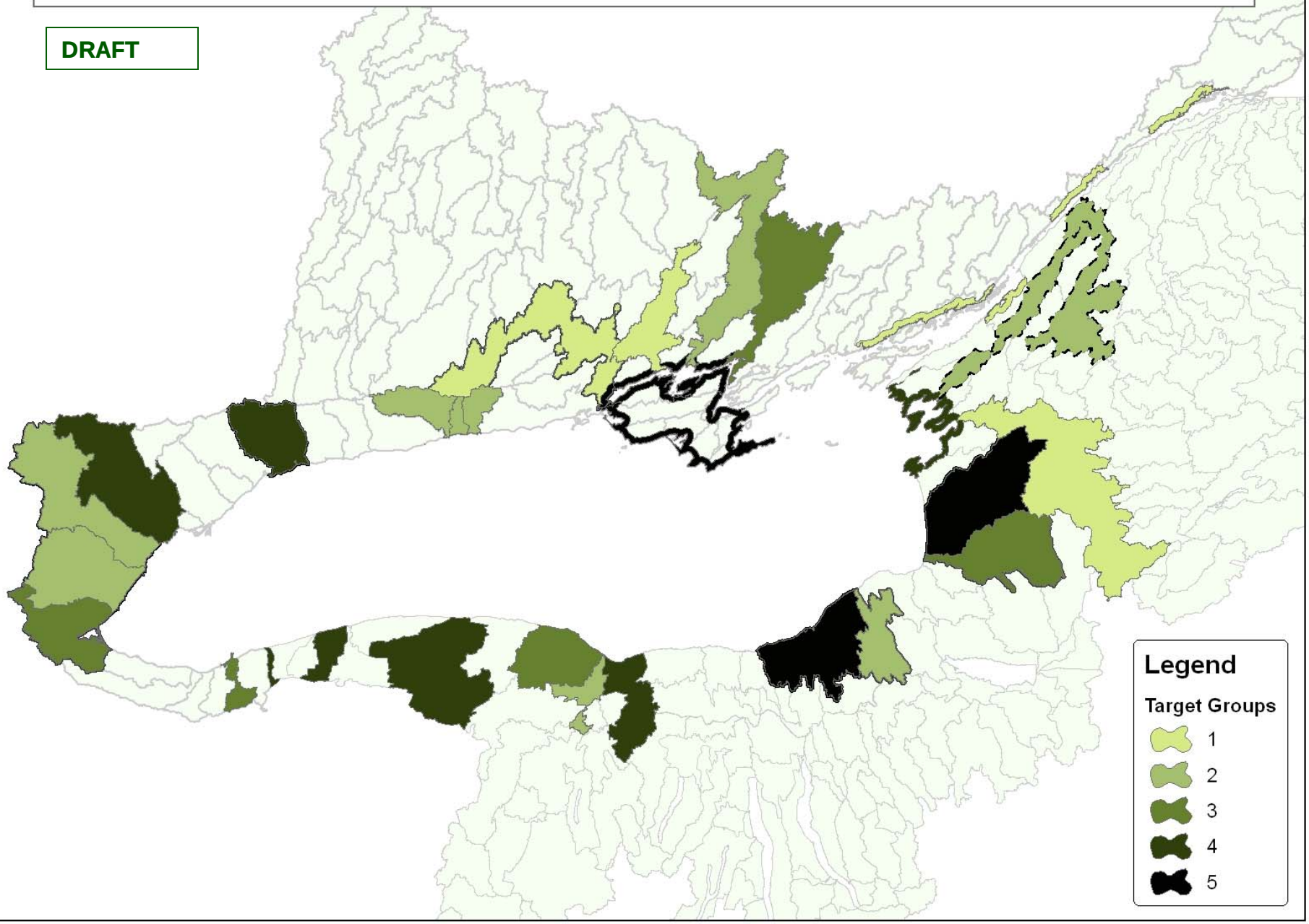

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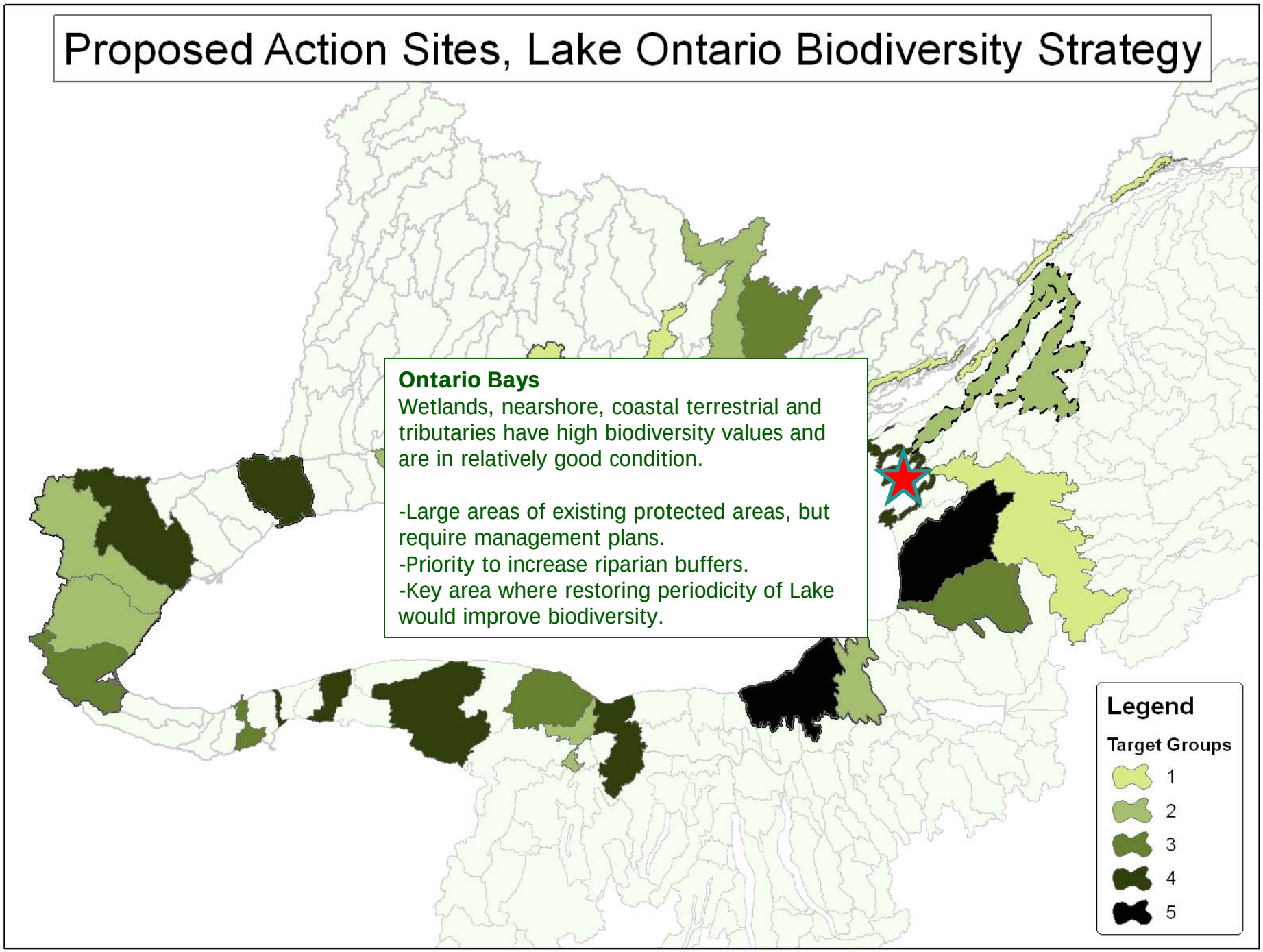
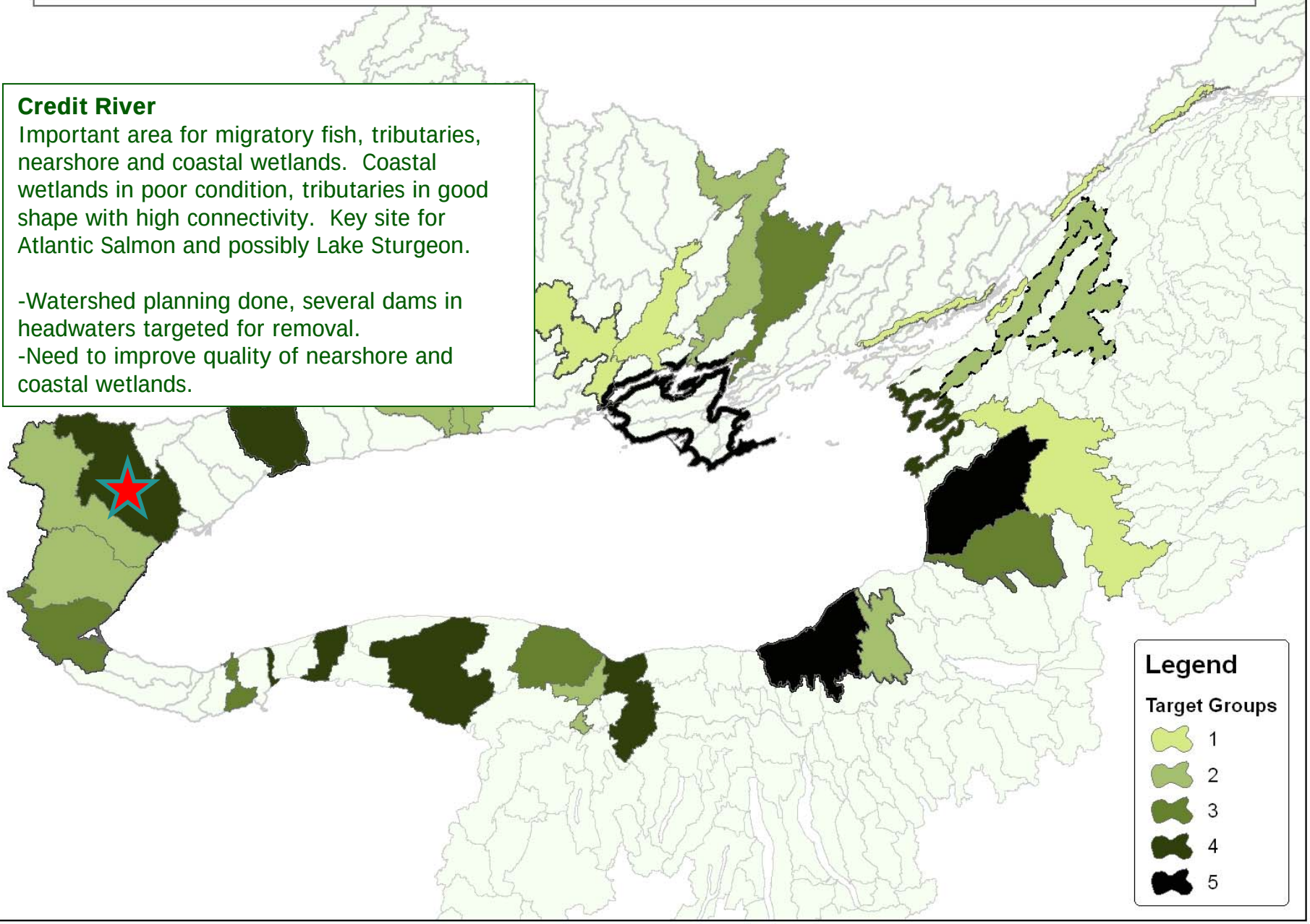


Proposed Action Sites, Lake Ontario Biodiversity Strategy

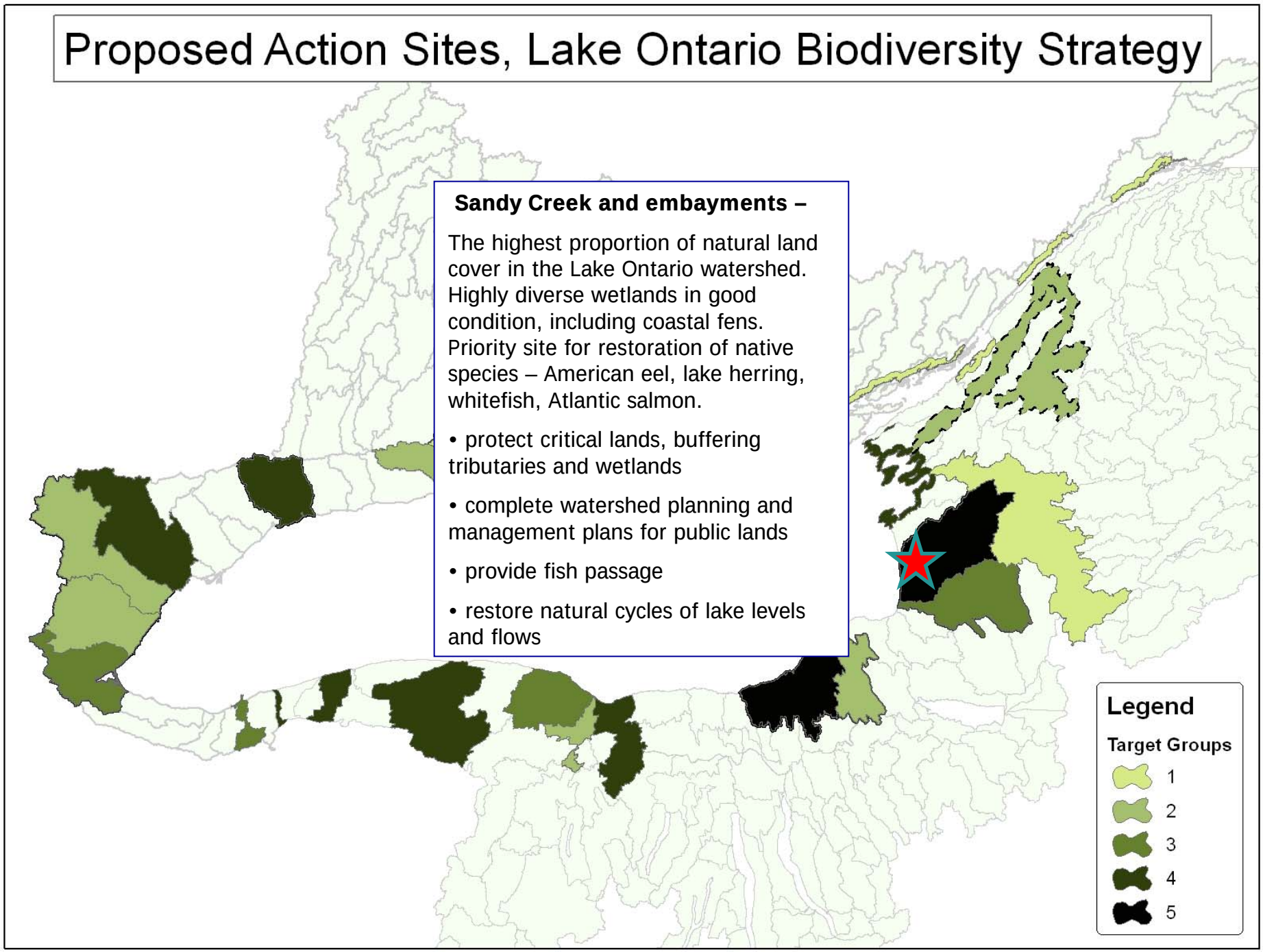
Credit River

Important area for migratory fish, tributaries, nearshore and coastal wetlands. Coastal wetlands in poor condition, tributaries in good shape with high connectivity. Key site for Atlantic Salmon and possibly Lake Sturgeon.

-Watershed planning done, several dams in headwaters targeted for removal.
-Need to improve quality of nearshore and coastal wetlands.



Proposed Action Sites, Lake Ontario Biodiversity Strategy

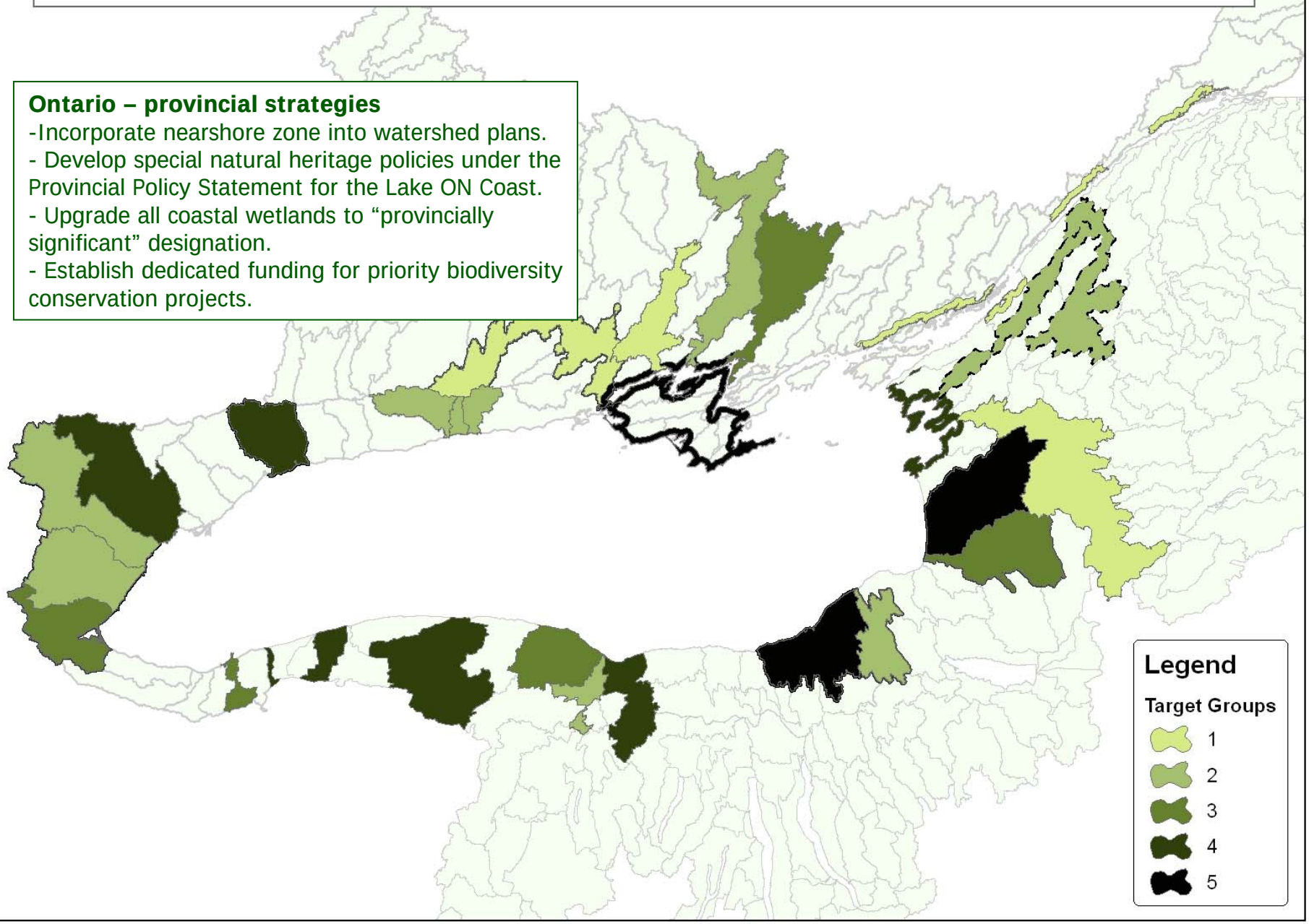


Proposed Action Sites, Lake Ontario Biodiversity Strategy

Ontario – provincial strategies

-Incorporate nearshore zone into watershed plans.

- Develop special natural heritage policies under the Provincial Policy Statement for the Lake ON Coast.
- Upgrade all coastal wetlands to “provincially significant” designation.
- Establish dedicated funding for priority biodiversity conservation projects.

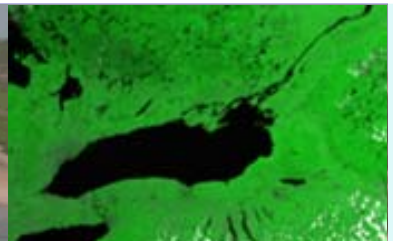


Applications & Next Steps

- Report and recommendations to the LaMP committee
- Strengthen binational, multi-agency approach to conservation
- Build case for increased funding to implement key strategies in priority places
- Identify conservation actions where multiple benefits will occur

- Draft report done by August 2008, final report in fall



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conserveonline.org/workspaces/lakeontario.conservation

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