Biological Integrity Case Study:

ROYAL BOTANICAL GARDENS

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presented by

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Restoring the Biological Integrity of

Cootes Paradise
and
Grindstone Creek Marshes

ROYAL
BOTANICAL
GARDENS
www.rbg.ca

Mission

Royal Botanical Gardens' mission is to be a living museum which serves local, regional and global communities while developing and promoting public understanding of the relationship between the plant world, humanity and the rest of nature.

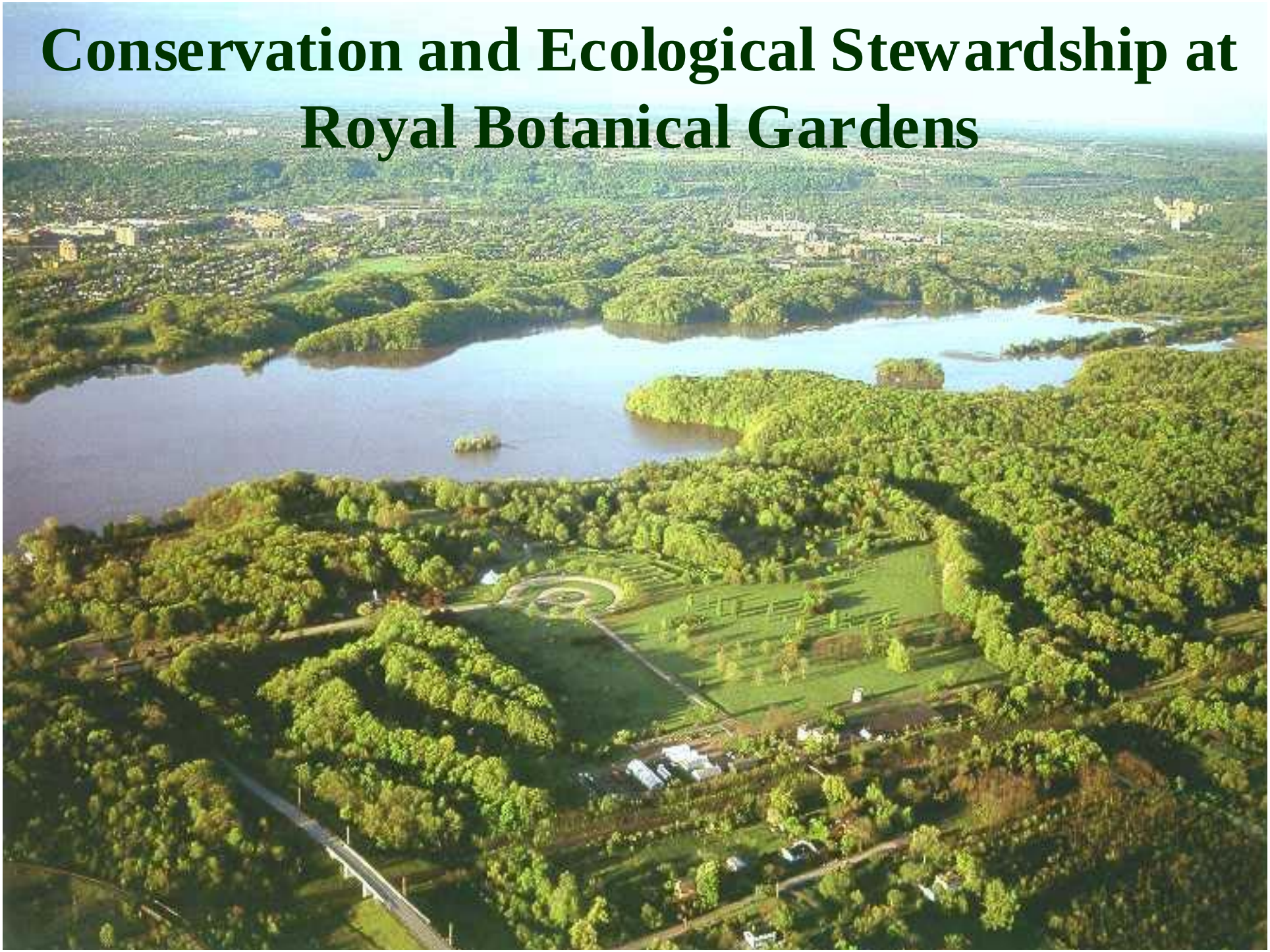
Horticulture

Education

Science and Conservation

Hamilton– Ontario – Canada –World

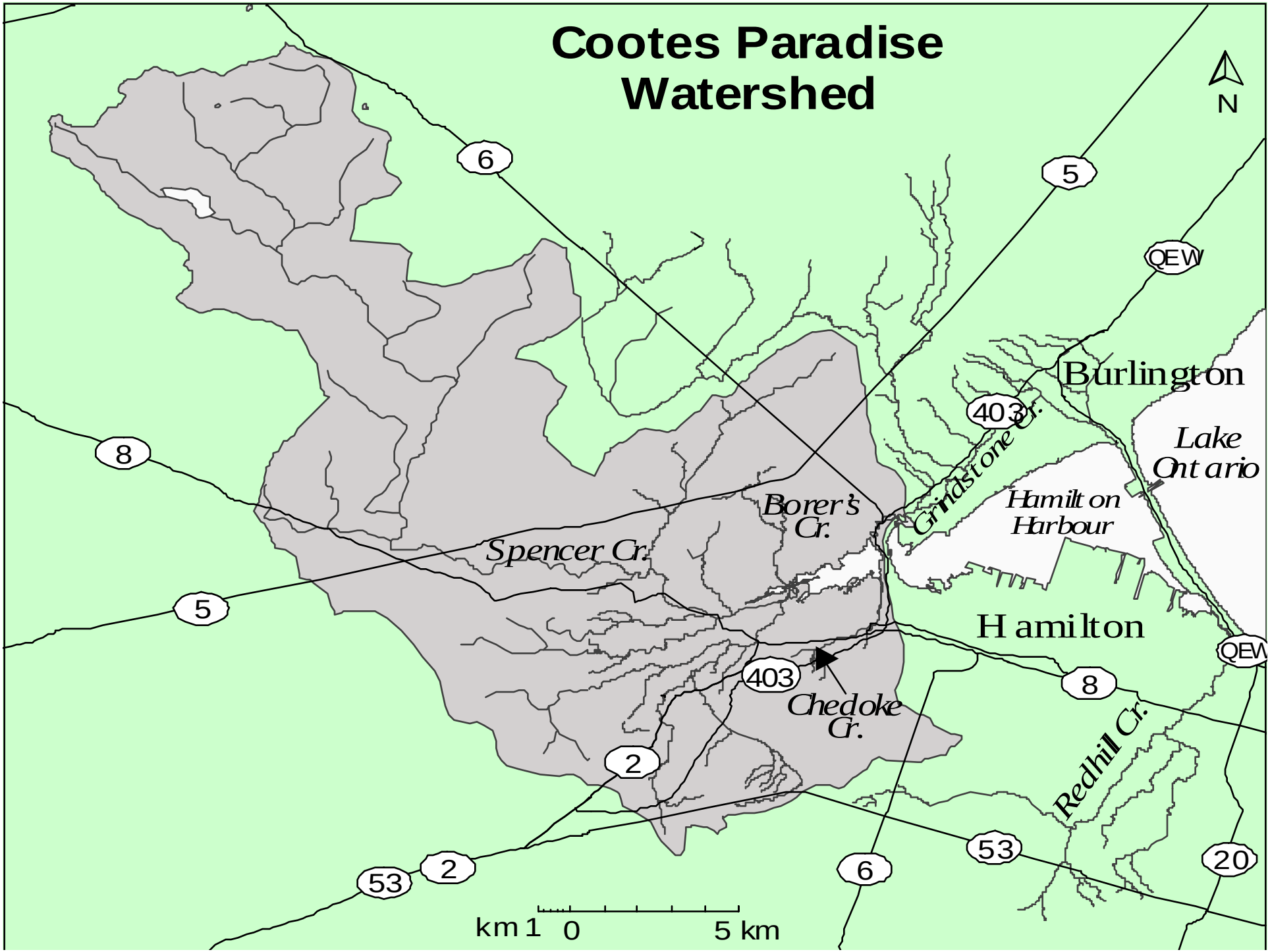
Conservation and Ecological Stewardship at Royal Botanical Gardens



Project Paradise

The restoration of
Cootes Paradise marsh and
Grindstone Creek marsh.

An element of the
Hamilton Harbour
Remedial Action Plan.


Cootes Paradise
Watershed
N
6
5
QEW
Burlington
403
Grindstone Cr.
Lake
Ontario
8
Borer's
Cr.
Hamilton
Harbour
Spencer Cr.
5
Hamilton
QEW
403
8
Chedoke
Cr.
Redhill Cr.
2
53
2
53
6
20
km 1
0
5 km

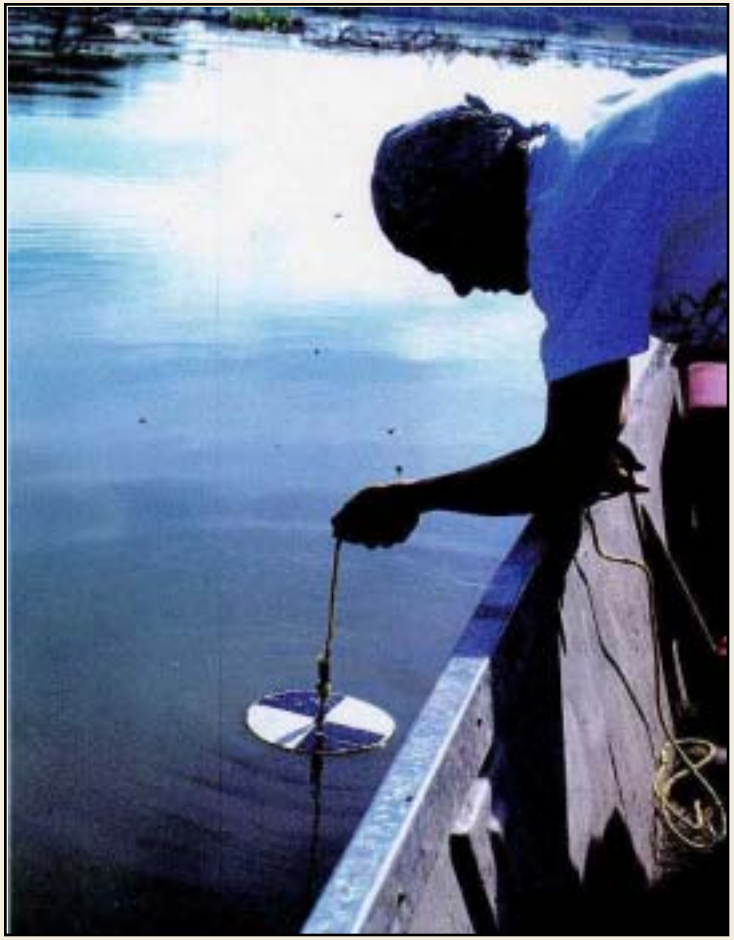
Rationale for Multi-Year Restoration

- Loss of fish and wildlife habitat
- Degraded fish and wildlife populations
- Degradation of benthos (lake bed organisms)
- Loss of natural filtration

Relevant Delisting Criteria for Areas of Concern

- Phosphorus
- Chlorophyll
- Water clarity
- Dissolved oxygen
- Plant area
- Suspended solids
- Bacteria

Key Project Paradise Recommendations



- Water Quality
- Fish and Wildlife Habitat
- Public Access and Aesthetics
- Education and Public Involvement
- Research and Monitoring

Project Paradise Deliverables

- Carp removal from Cootes Paradise through the Fishway (99.9% removed), and from Grindstone Creek marshes using Christmas tree exclosures
- Recreate marsh and riparian habitat in Cootes Paradise and Grindstone Creek marshes
- Monitor wildlife restoration using GIS
- Present field research to public and stakeholders
- Publications, Web site, educational programs, tours

Methods Employed

- Limit invasive species, particularly carp access
- Wetland replanting
- Stream channel rehabilitation
- Monitoring
- Support of watershed stewardship programs
- Education

Christmas tree carp barrier installation

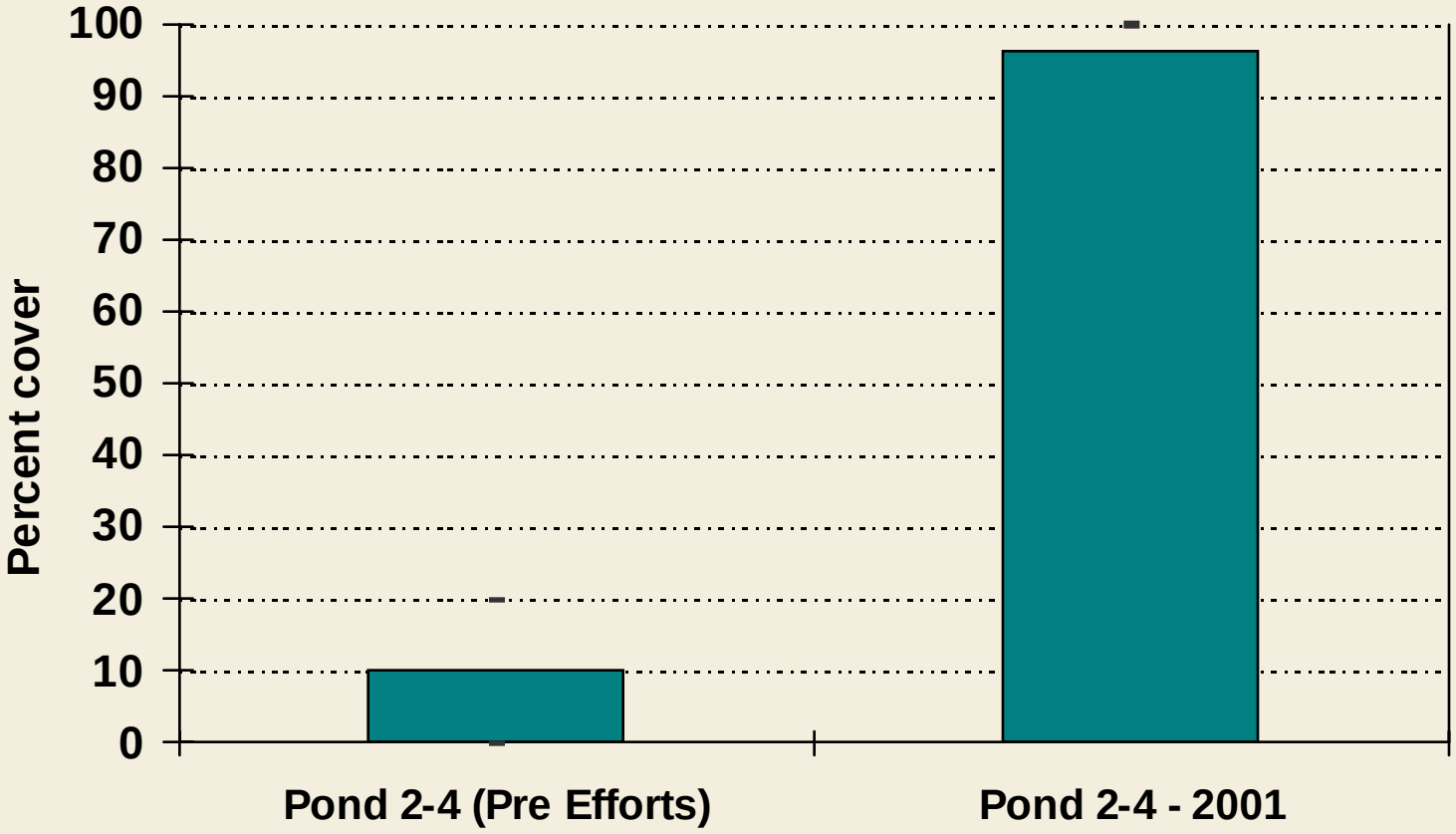
six months later

Results

- Water quality improvement
- Natural flora regeneration
- Fish and wildlife species improving
- Community diversity improving

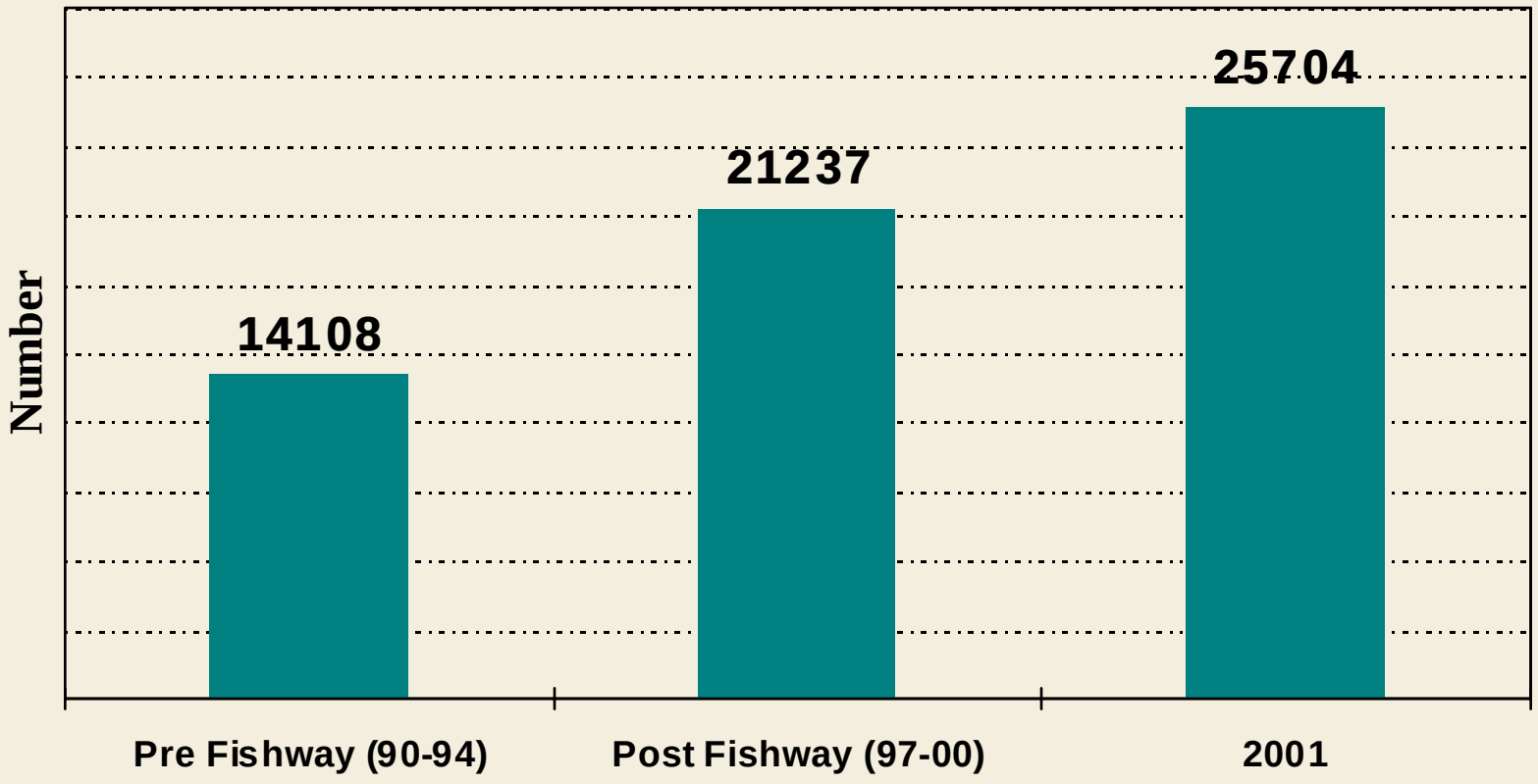
Submergent Plants

Hendrie Ponds Plant Abundance

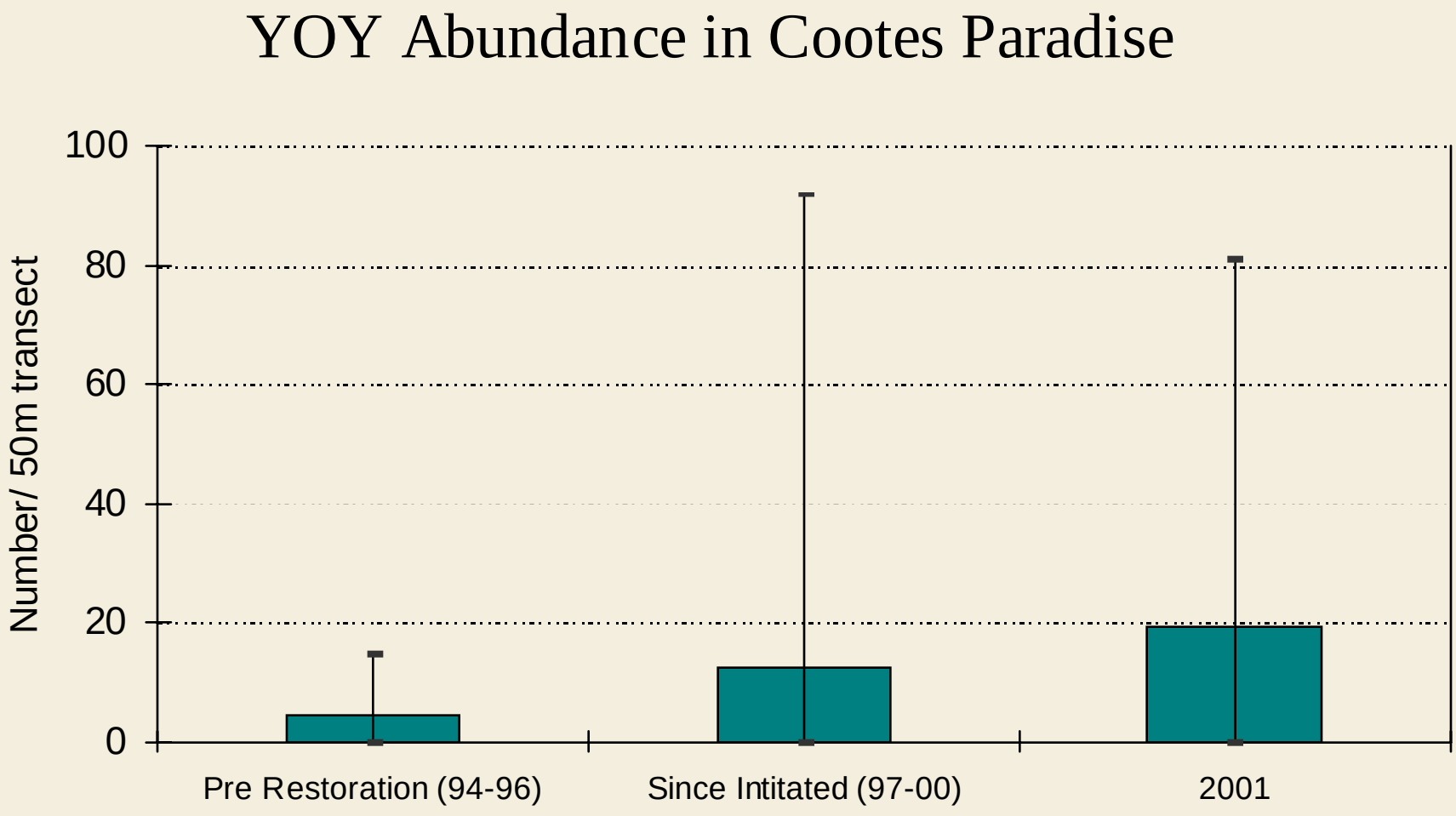


Fall Migrants—Individuals

Fall Waterbird Count



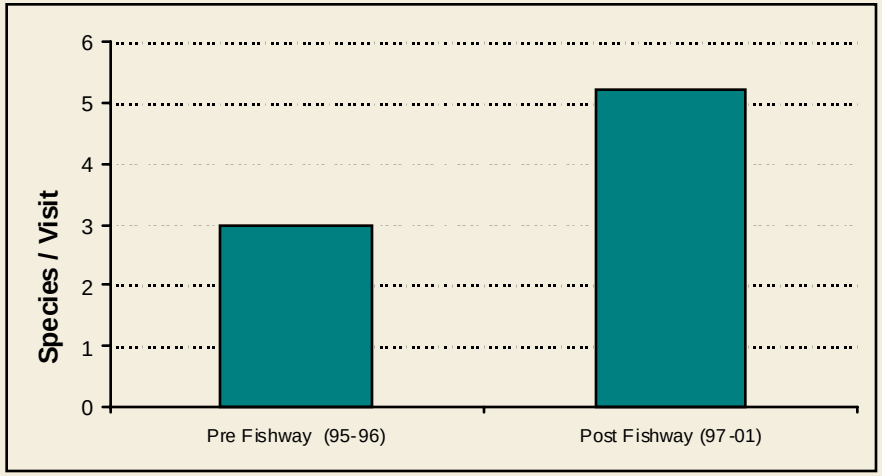
August Young of the Year Fish



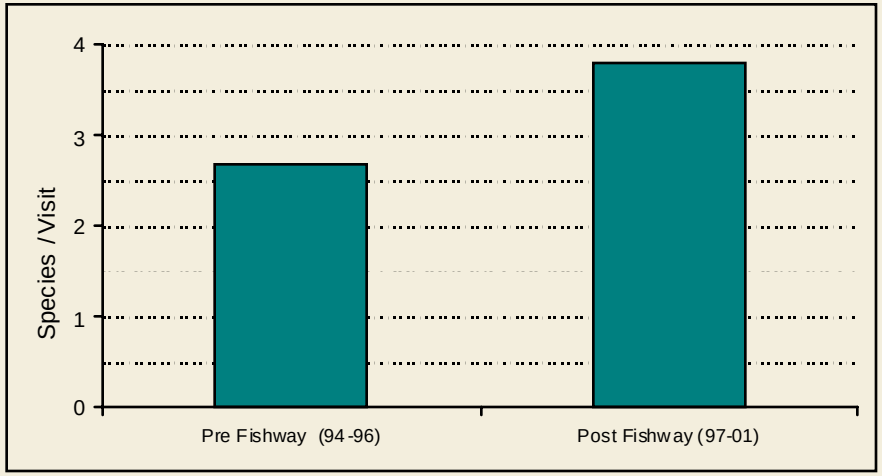
Biodiversity of Cootes Paradise

Restoration initiatives, specifically the elimination of carp, have contributed to the overall increase in species biodiversity in Cootes Paradise.

Breeding Marsh Birds



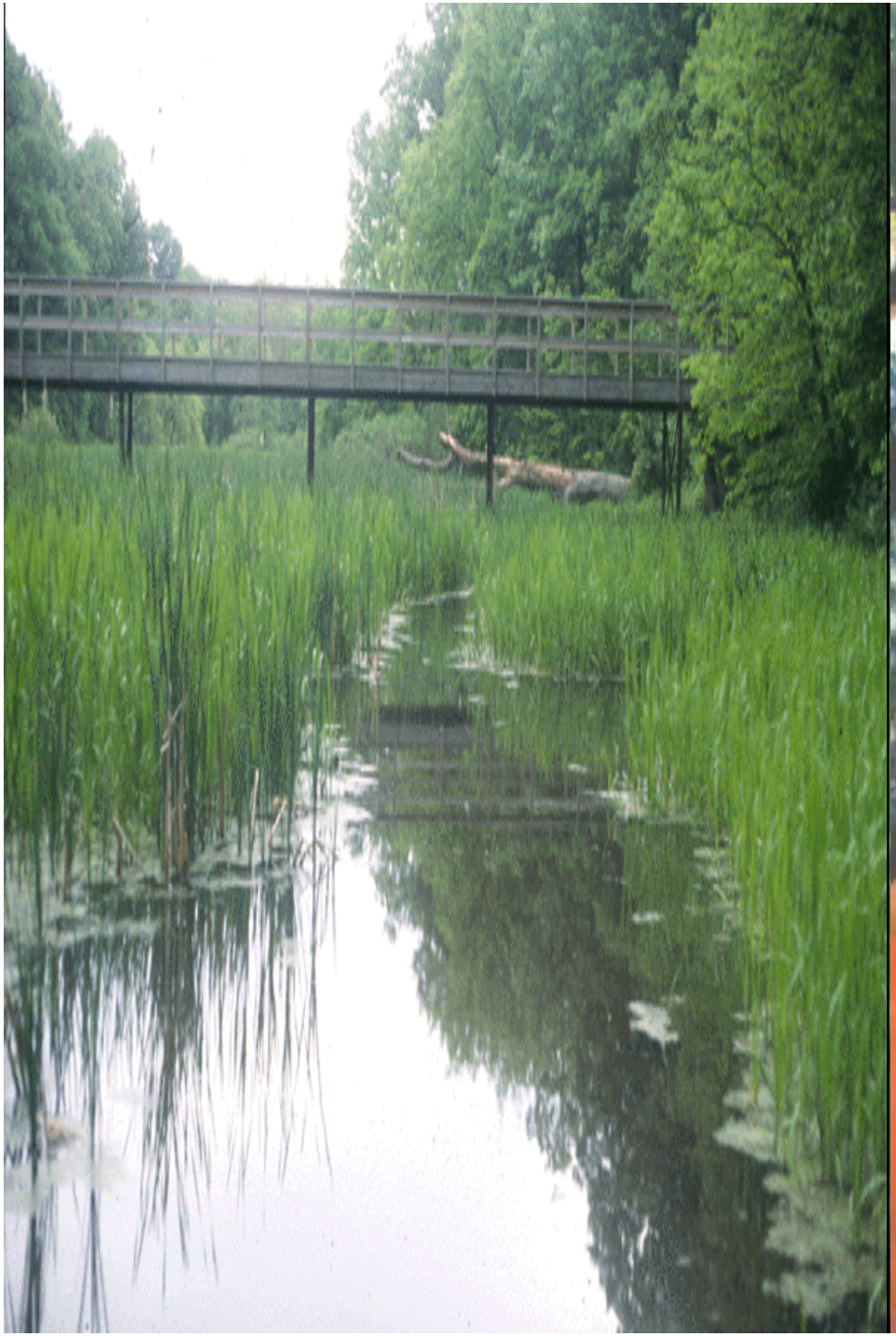
Amphibians



Rare species at RBG

Red mulberry (*Morus rubra*)

RBG supports what is likely Canada's largest population of this nationally endangered tree, and is extensively involved in its study and conservation.



Benefits

- Enhanced biodiversity
- Greater productivity for outdoor recreation
- Public education on environmental restoration

Rehabilitation of Hendrie Valley Ponds has contributed to the production of 20 million young fish per year.

Thanks to our financial supporters

CONSERVATION HALTON

CITY OF BURLINGTON

THE New! CITY OF HAMILTON

ONTARIO MINISTRY OF NATURAL RESOURCES

Canada

Remedial Action Plan for Hamilton Harbour

DOFASCO ANGLERS

HAMILTON COMMUNITY FOUNDATION

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PETRO-CANADA

FISH & WILDLIFE HABITAT RESTORATION PROJECT

Hamilton Harbour and Cootes Paradise

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