



Phragmites australis **Management in Ontario**

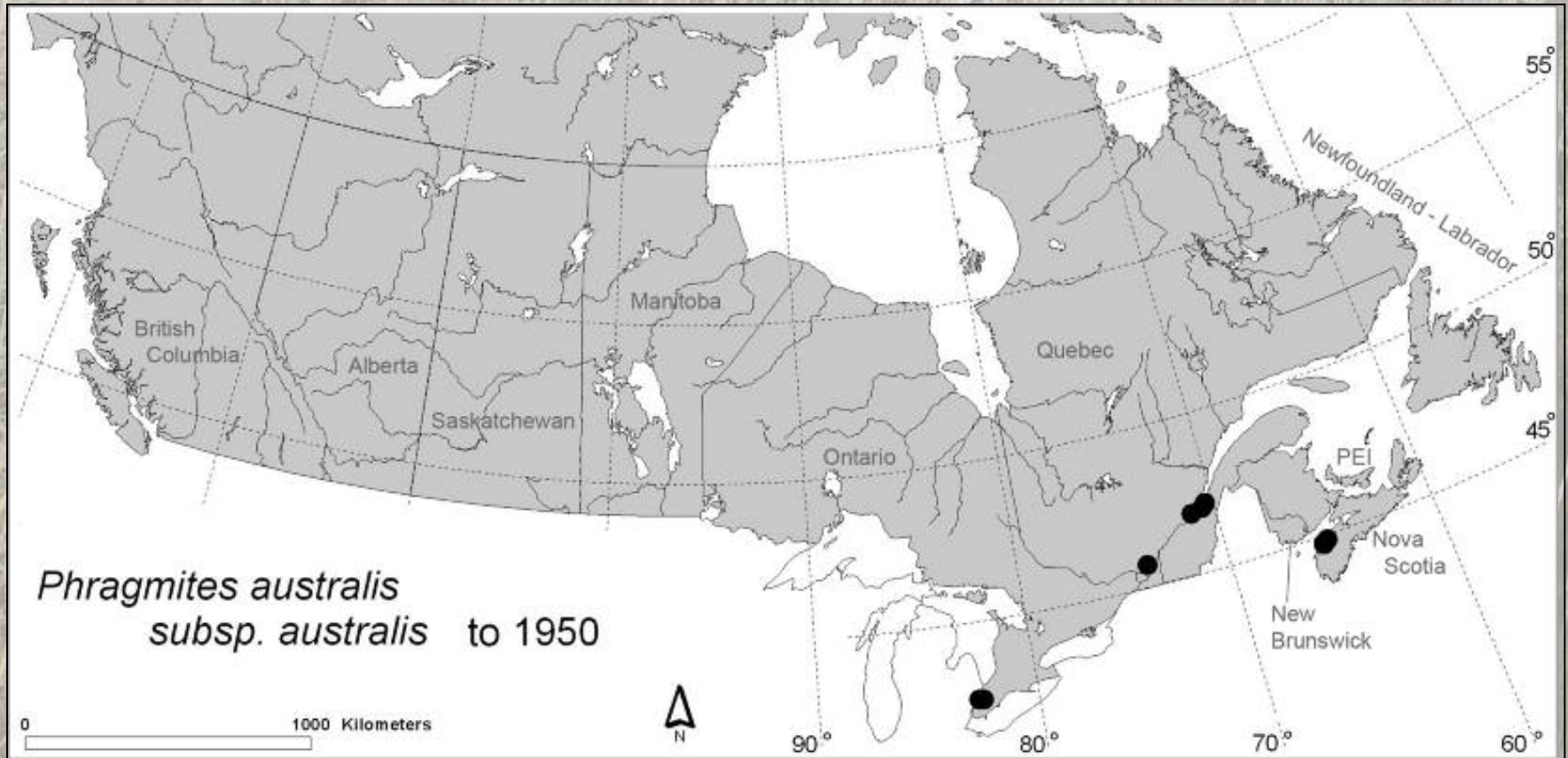
6th Bi-national Lake St. Clair Conference
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Presentation Outline:

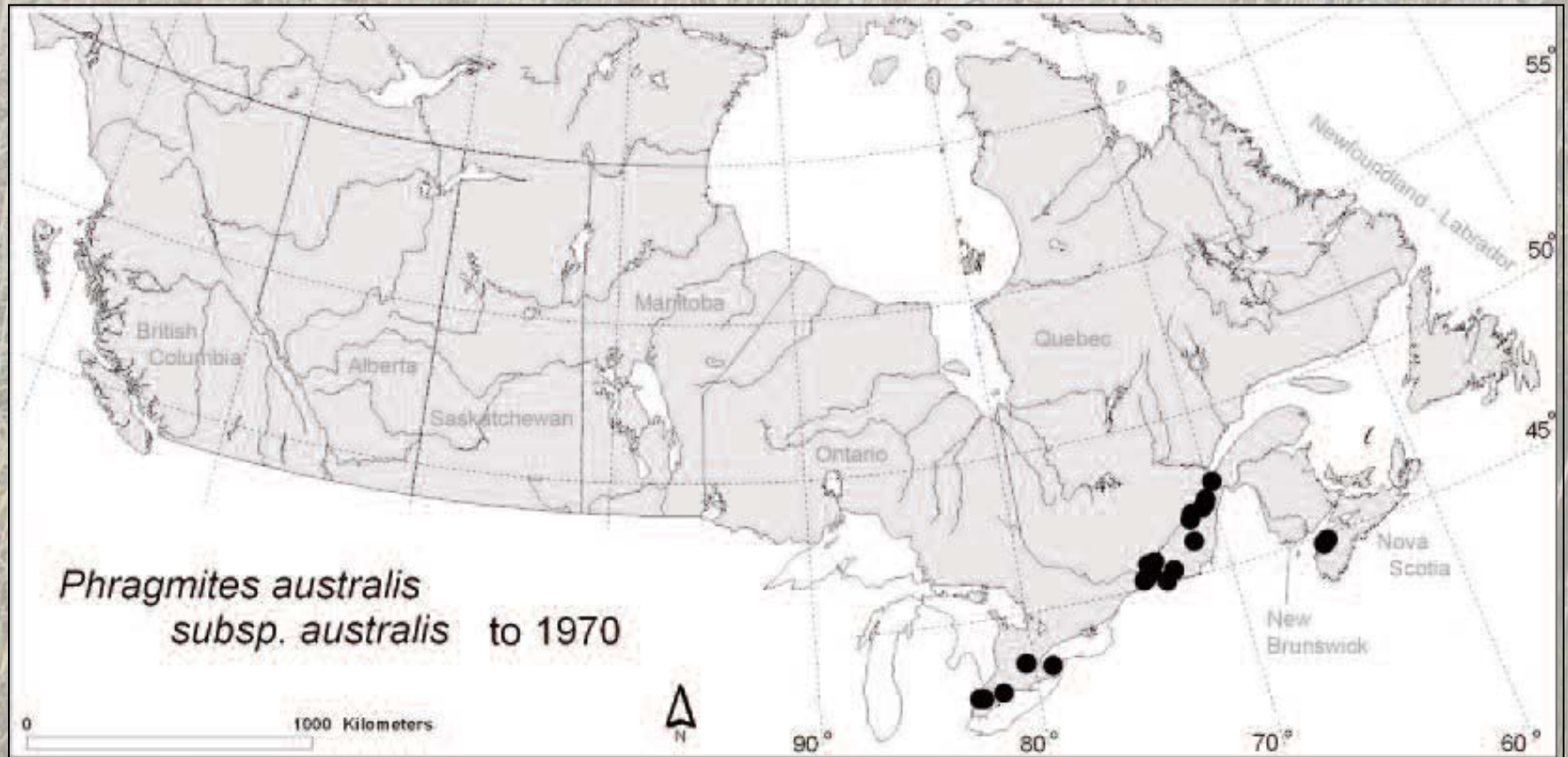
- Historical, current, predicted distribution
- Spread vectors
- Issues
- Control options
- Current management
- Future direction

Historical Distribution



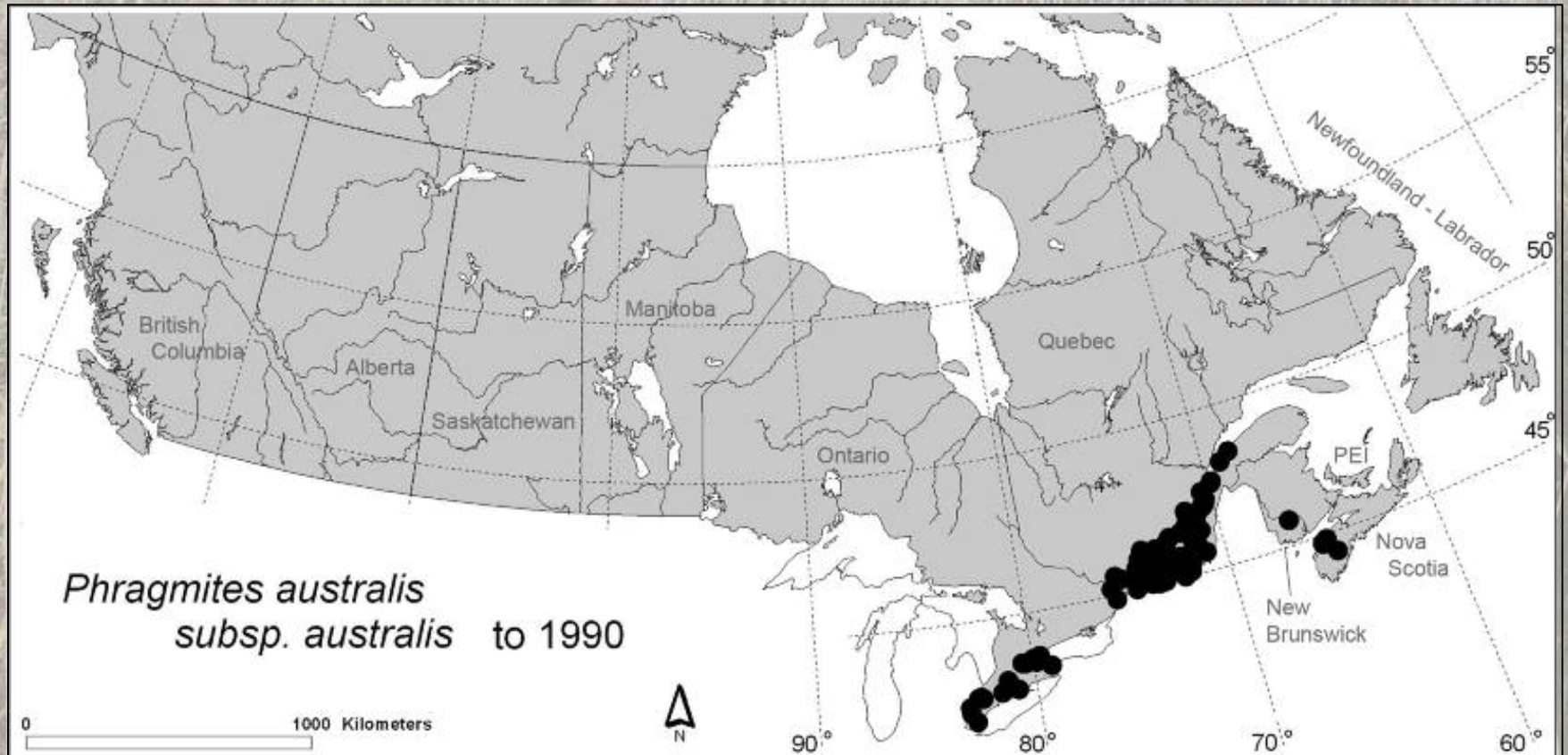
Catling, Paul M., and Gisèle Mitrow. 2011. The recent spread and potential distribution of *Phragmites australis* subsp. *australis* in Canada. *Canadian Field-Naturalist* 125: 95–104.

Historical Distribution cont'd.



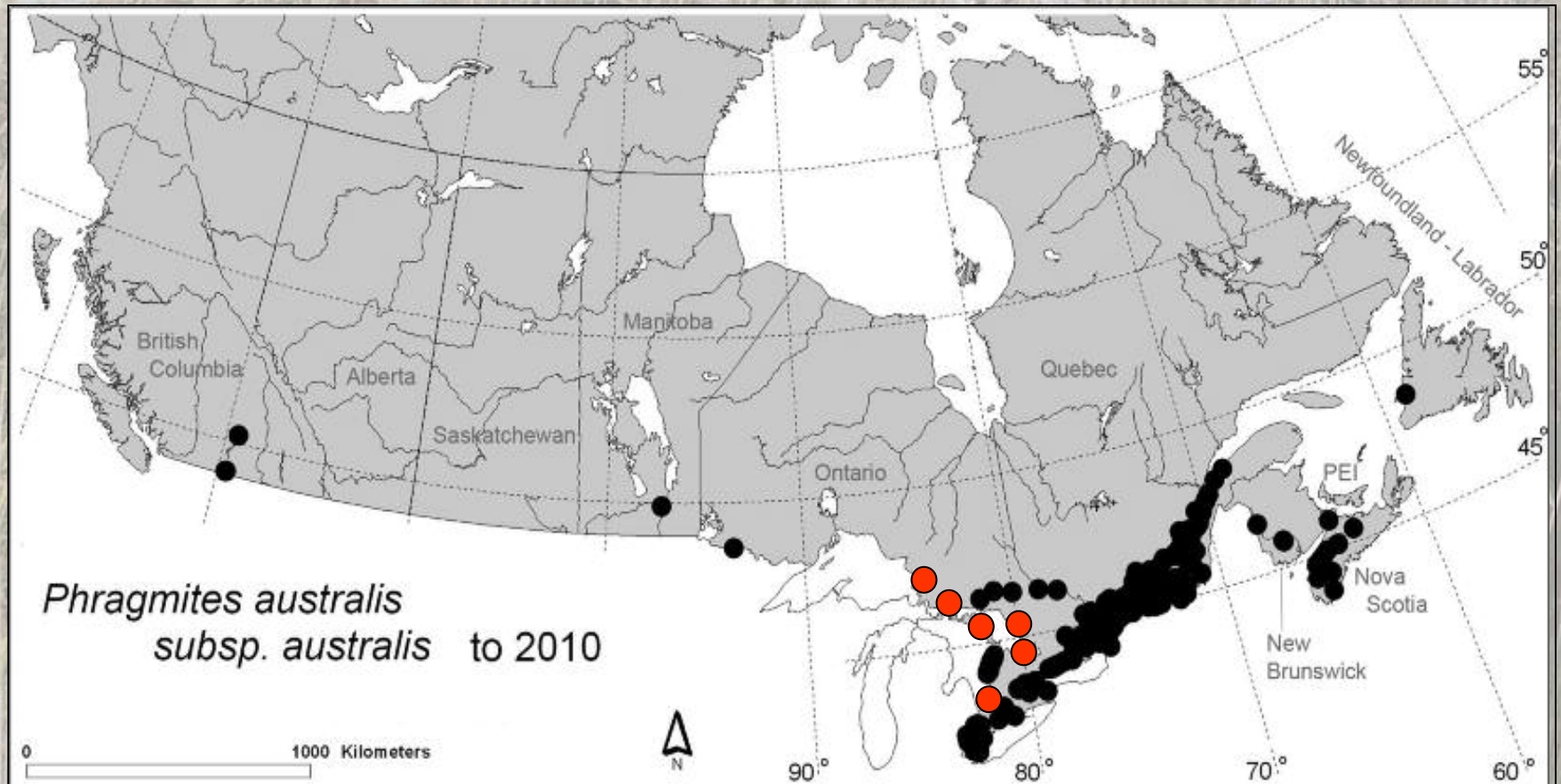
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Historical Distribution cont'd.



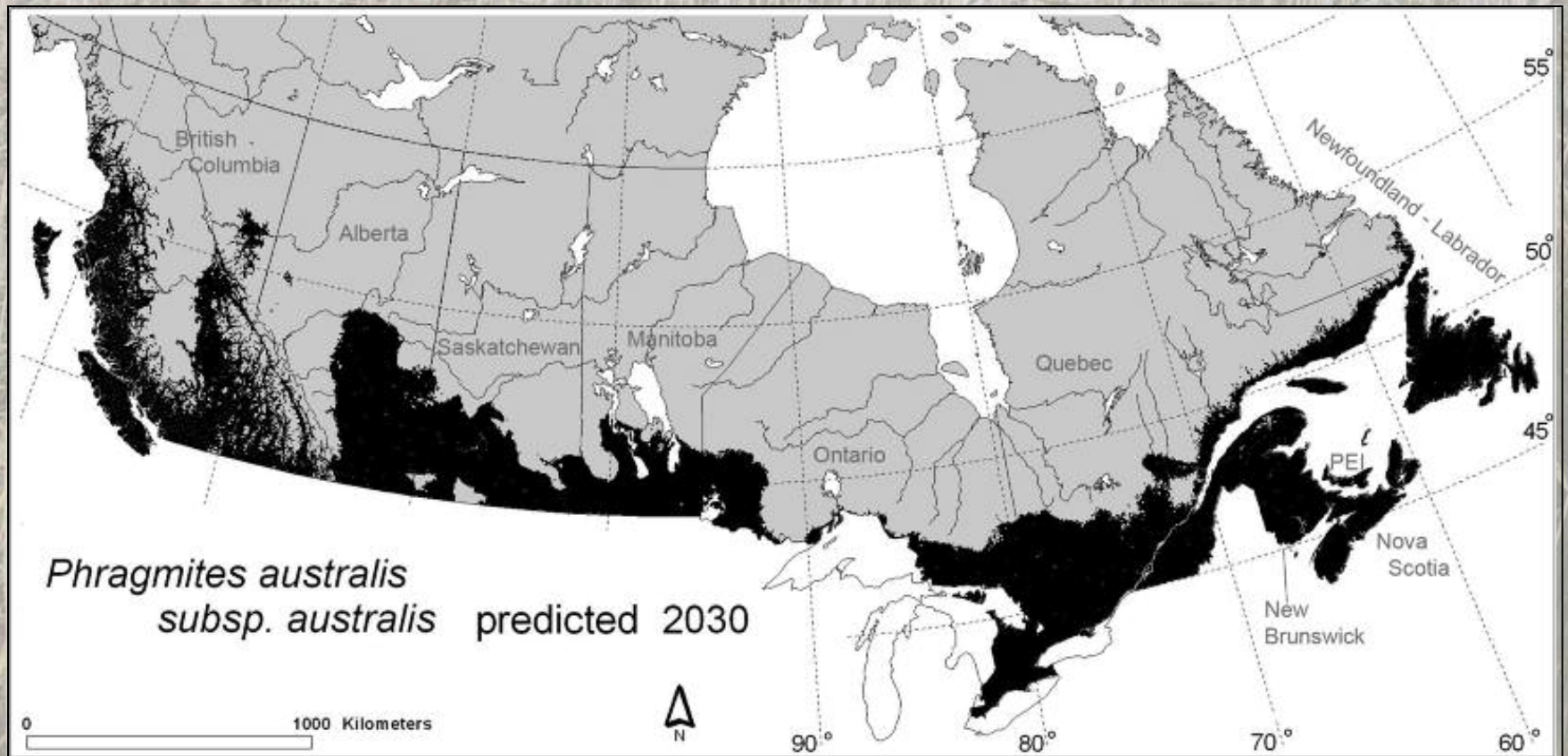
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Current Distribution 2012



Modified from: Catling, Paul M., and Gisèle Mitrow. 2011. The recent spread and potential distribution of *Phragmites australis* subsp. *australis* in Canada. Canadian Field-Naturalist 125: 95–104.

Predicted Distribution 2030



Catling, Paul M., and Gisèle Mitrow. 2011. The recent spread and potential distribution of *Phragmites australis* subsp. *australis* in Canada. *Canadian Field-Naturalist* 125: 95–104.

Giving Phragmites a helping hand

- Population explosion in 1990's linked to land use changes (increased disturbance, urbanization, eutrophication, hydrological changes)
- Establishment along transportation corridors provides a major spread vector
- Declining Great Lakes water levels increases new colonization and expansion

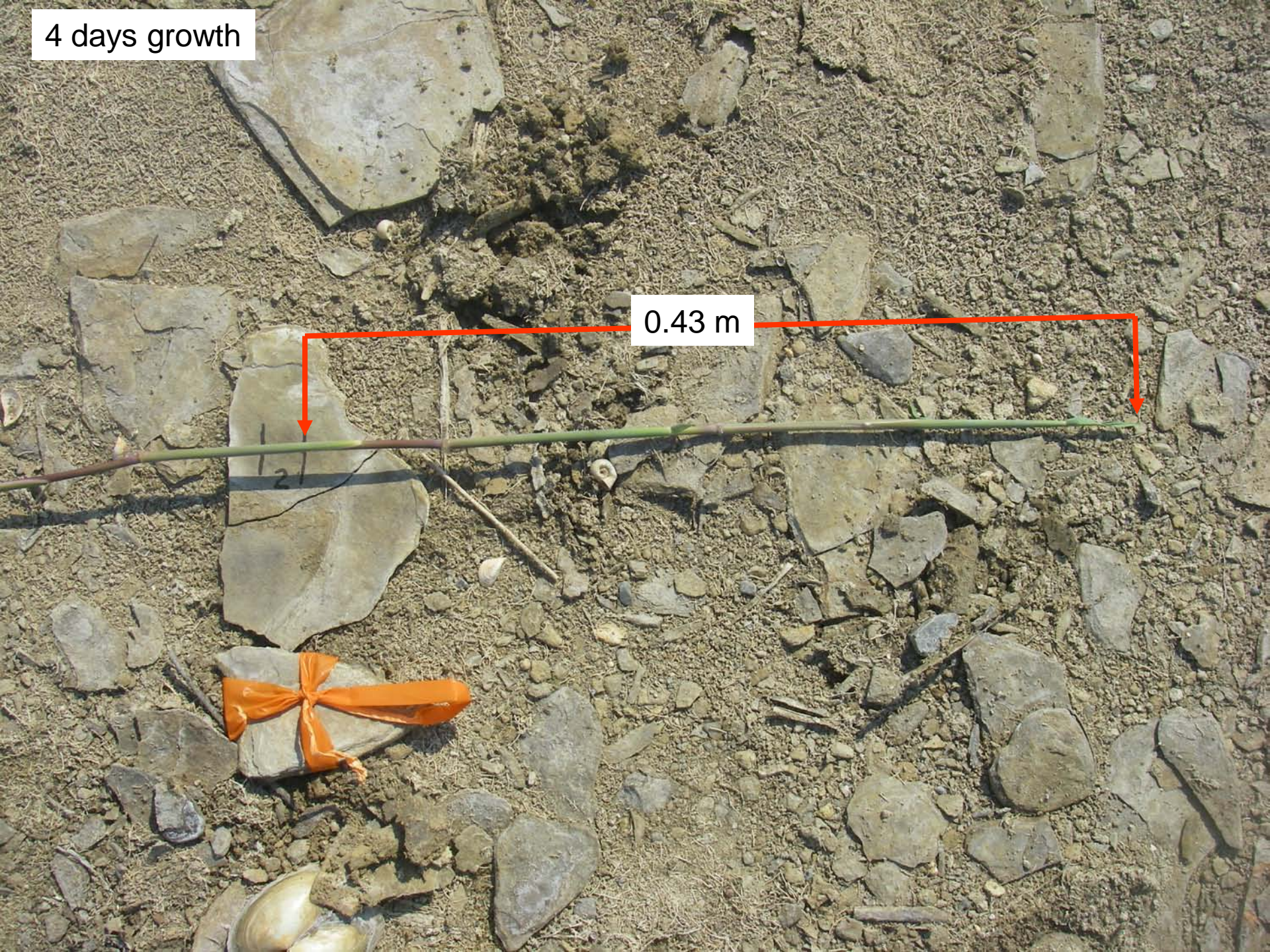
Kettle Point, Lake Huron, August 2012





4 days growth

0.43 m





Bay View Wetland, Lake Erie, Ohio, June 2011

Germinating Phragmites seed head



Mary Gartshore, Detroit River, May 2011



A highly efficient invasive

- strong competitor for nutrients
- allelopathic
- no effective natural controls

Lag time between colonization and rapid growth



Invasive Phragmites, Richardson Creek Wetland, St. Joseph Island, Lake Huron, August 2011

Fighting Island, Detroit River 2010



Concerns

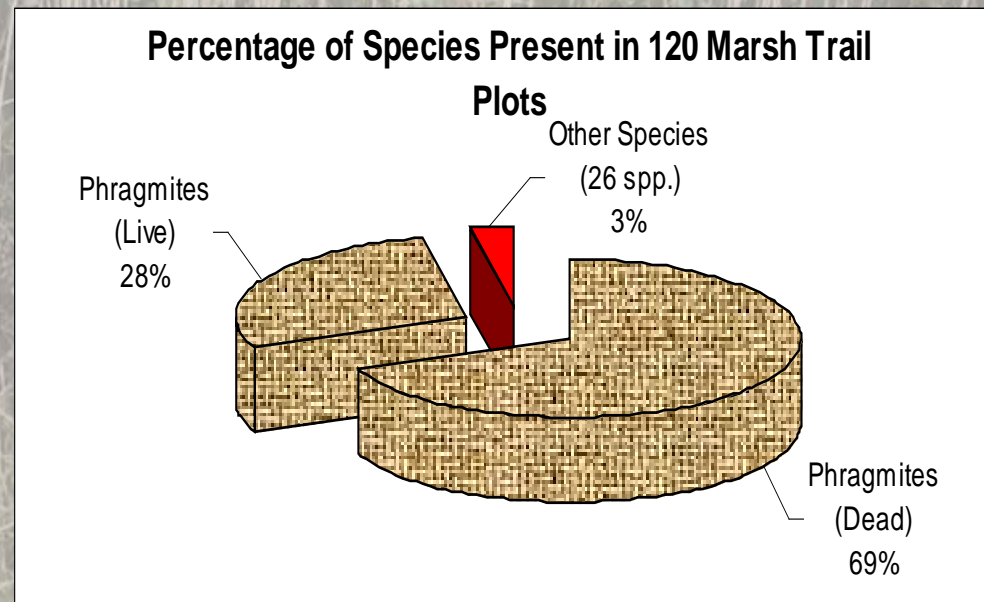
- Loss of Recreational Opportunities
- Decline in shoreline property values
- Tourism impacts
- Hazard issues (fire)



Concerns cont'd.

Wetland Ecosystem changes:

- hydrological alterations
- nutrient cycling changes
- significantly reduced plant biodiversity



Concerns cont'd.

➤ reduced habitat



Rondeau Provincial Park, fall 2007

Concerns cont'd.

- reduced habitat

Rondeau Provincial Park, fall 2012

Concerns cont'd.

- impacts on Species at Risk



dead Map Turtle



dead Blanding's Turtle

Rondeau Provincial Park, fall 2010

Concerns cont'd.



R.M. Bolton and R.J. Brooks, 2010. Impact of the seasonal invasion of *Phragmites australis* (Common Reed) on turtle reproductive success. *Chelonian Conservation and Biology*, 9(2).

Control Options

Mechanical control

- Burning
- Cutting
- Smothering
- Drowning



- controlling Phragmites by cutting and flooding may be a non-chemical option where feasible



Pilot Project #4 2007- 08: Investigation of a mechanical method for controlling Phragmites in wet habitats, Rondeau Provincial Park, Lake Erie

Control Options cont'd.

Legal Chemical Options in Canada:

- Weathermax and Vision (Monsanto products)- glyphosate, surfactant: polyethyloxylated tallowamine (POEA)
- No over water approval for either product
- Glyphosate one of 82 active ingredients banned for cosmetic use (*Ontario Cosmetic Pesticides Ban Act*, April 22, 2009)
- Require a written opinion from the Ministry of Natural Resources that the use is an appropriate means to protect or manage natural resources

Control Options cont'd.

- A retrofitted Centaur is effective and efficient in certain habitats



Complimentary Control Activities

- Removal of biomass appears to improve native plant species response and allows for easier follow-up Phragmites control



McLean Marsh, Rondeau Bay, 2007

Complimentary Control Activities cont'd.

- Rolling standing dead Phragmites stalks prior to burning is safer, reduces seed residue, promotes drowning



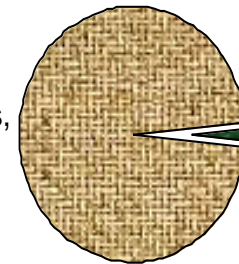
McLean Marsh, Rondeau Bay, 2007

Pilot Project #1: McLean Marsh Invasive Phragmites Control Pilot Project

> 5m in height

Diversity in Phragmites Communities McLean Marsh

Phragmites,
96.9%



other, 3.1%

McLean Marsh, Rondeau Bay, 2007

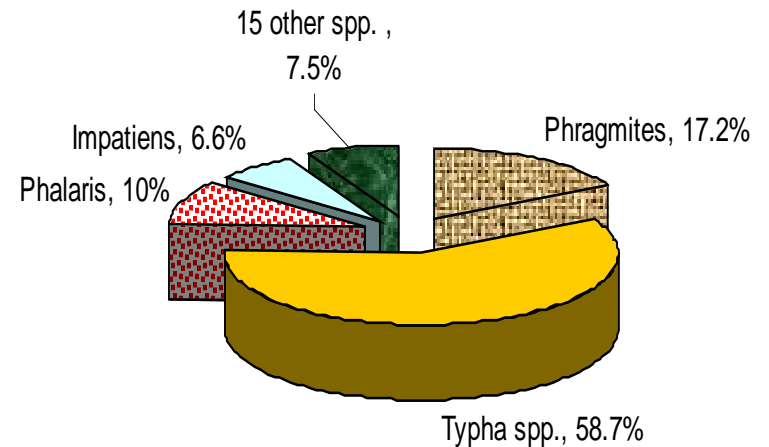
Pilot Project #1: McLean Marsh Invasive Phragmites Control Pilot Project



- total eradication of Phragmites very difficult to achieve
- controlling Phragmites with glyphosate does not adversely affect native plant species recovery
- habitat recovery is relatively quick



McLean Marsh
Post-treatment, June 2008





McLean Marsh, Rondeau Bay, 2010

Lake St. Clair Wetlands

Invasive Phragmites not controlled



Tremblay Beach Wetland, June 2011

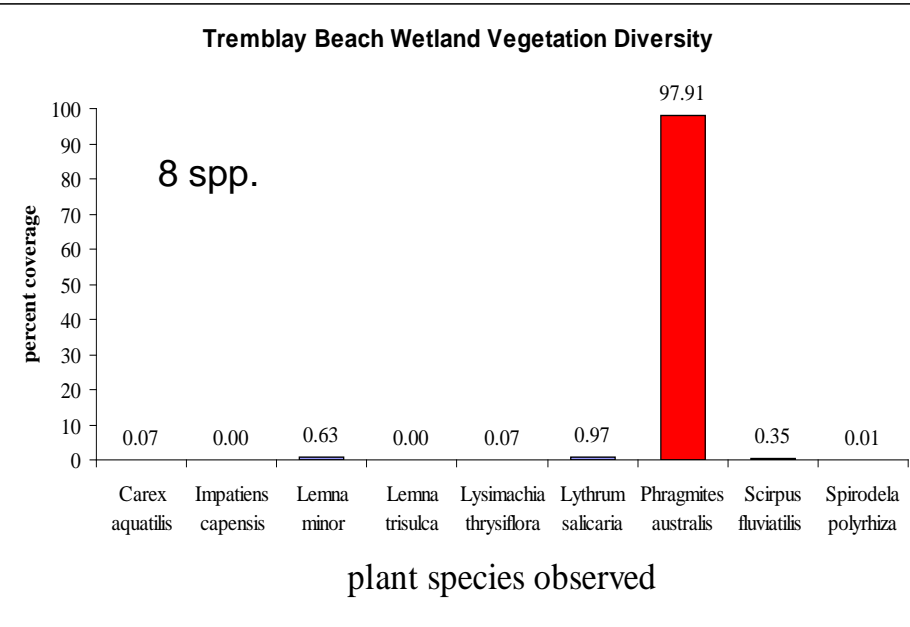
Invasive Phragmites controlled, 2009



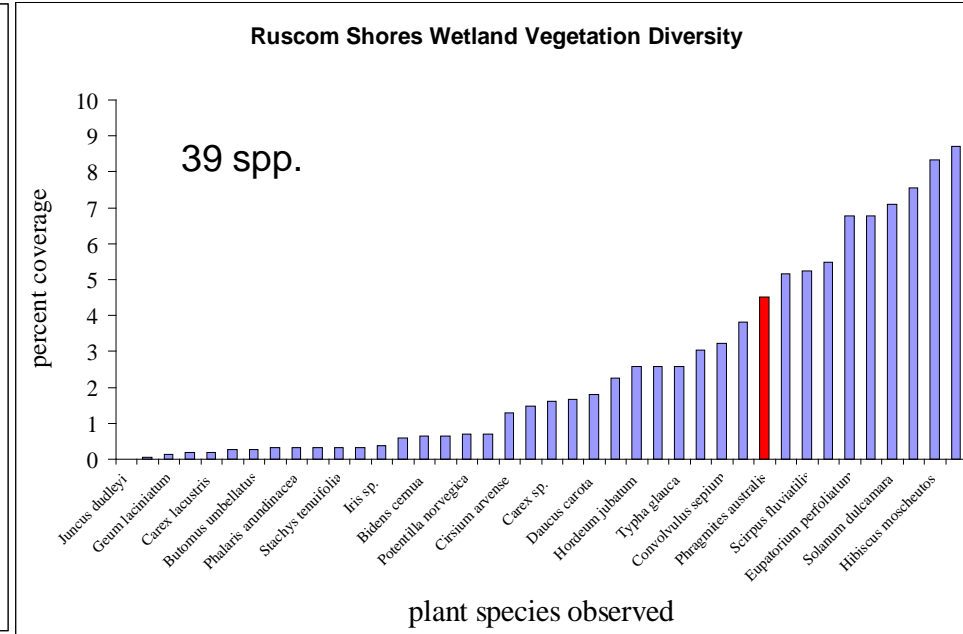
Ruscom Shores Wetland, June 2011

Comparison of plant diversity within two Lake St. Clair Wetlands

Phragmites Not Controlled



Phragmites Controlled



Kettle Point, Lake Huron Phragmites Control Demonstration Site

Pre-control September 2011

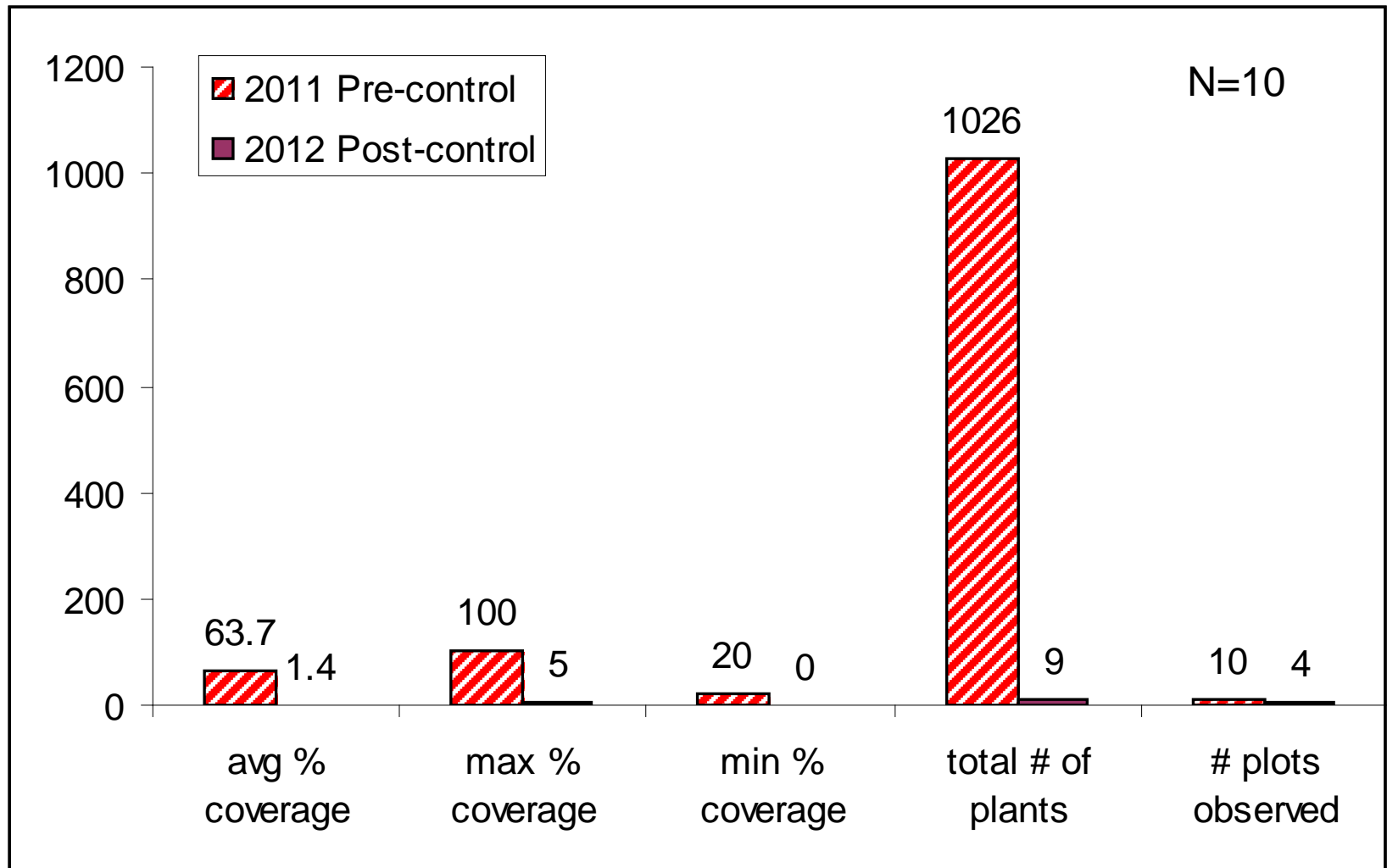


Post-control July 2012



4.6 acre coastal meadow marsh

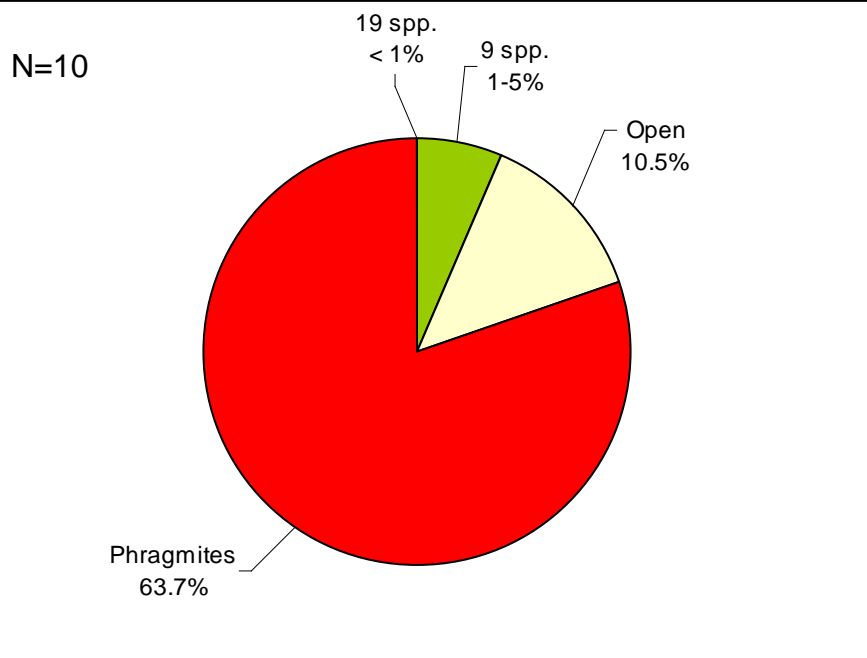
Comparison of Invasive Phragmites Before and After Control Using a Glyphosate Based Herbicide



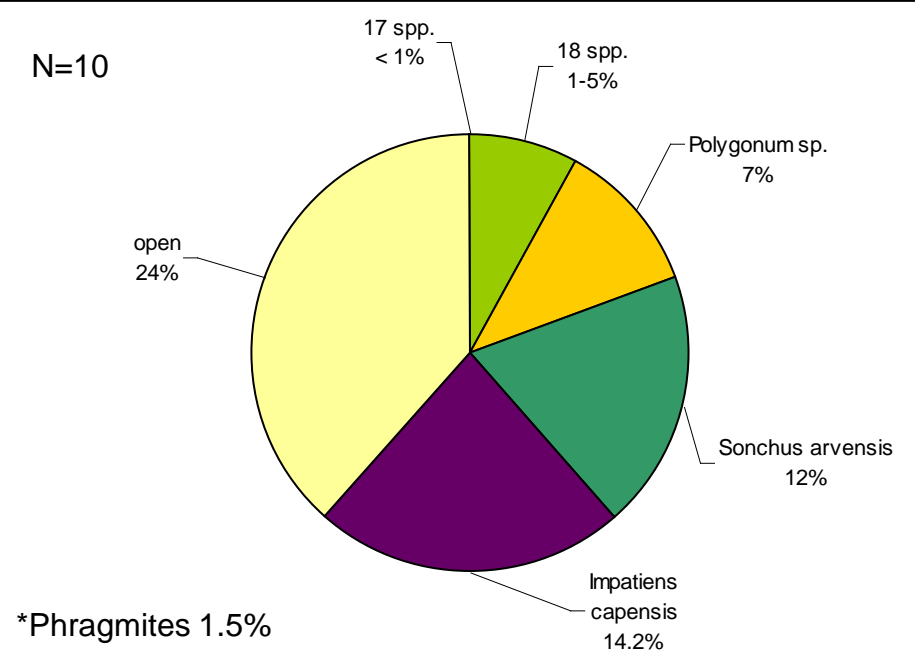
*sampled in the same 10 x 1x1 m² plots

Comparison of Vegetation Species Pre- and Post-Phragmites Control:

Vegetation Percent Coverage
Pre-control, August 2011



Vegetation Percent Coverage
Post-control, August 2012



*sampled in the same 10 x 1x1 m² plots

Control Options: factors to consider

- timing and design of a Phragmites control project is site specific
- water levels
- native plant species, wildlife use (staging, mating, nesting, brood rearing, foraging)



Rondeau Provincial Park, Lake Erie



Kincardine shoreline, Lake Huron

Ontario Invasive Phragmites Control Projects 2007-2013

Lake Huron:

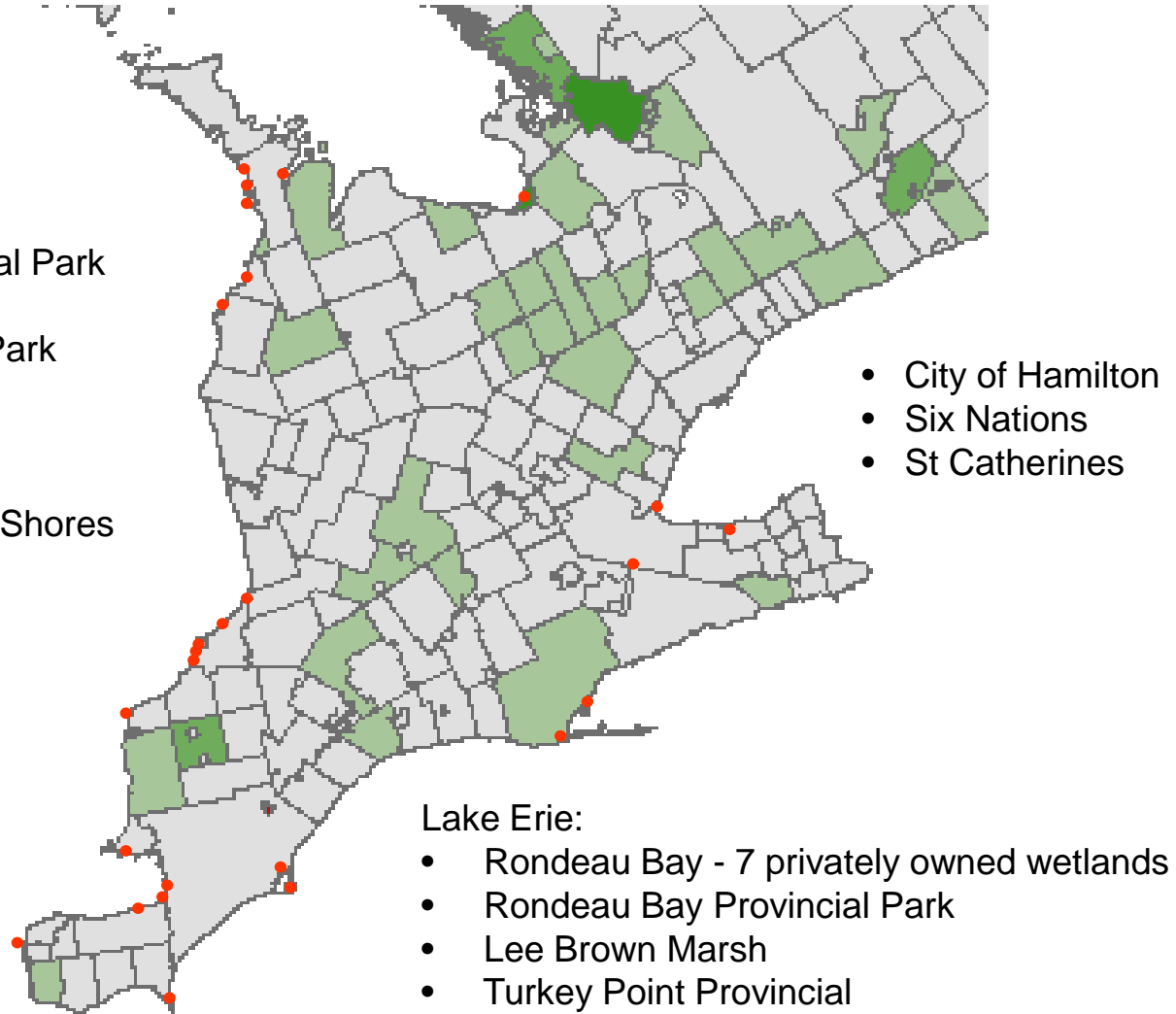
- Saugeen 1st Nations
- Oliphant
- Saugeen Shores
- Sauble Beach
- Wasaga Beach Provincial Park
- Wiarton
- Point Farms Provincial Park
- Port Franks
- Grand Bend
- Kettle Point
- Municipality of Lambton Shores
- Kincardine

Lake St. Clair/Detroit River

- Ruscom Shores
- Fighting Island
- Light House Cove
- Canterbury Park, Sarnia
- Bear Creek, CWS

Lake Erie:

- Rondeau Bay - 7 privately owned wetlands
- Rondeau Bay Provincial Park
- Lee Brown Marsh
- Turkey Point Provincial
- Point Pelee National Park



Required Next Steps:

- Essential to obtain legal approvals for over water and aerial herbicide control options in Canada
- Secure funding to support required initiatives and on the ground control efforts
- Develop effective public education campaign
- Establish Province wide Phragmites control program to determine extent of invasion and target 'valuable', at risk habitats as first priority (public or privately owned)
- Establish Phragmites Technical Team: mandate to assist with proposed Phragmites control projects from an ecological, legal, logistical, and public engagement/education perspective

Ontario Phragmites Working Group

- MNR/MOE
- Ontario Parks
- National Parks (Point Pelee)
- Ontario Invasive Plant Council
- Lake Huron Centre for Coastal Conservation
- First Nations
- Municipality of Chatham/Kent
- Township of Huron-Kinloss
- Hamilton Phragmites Working Group
- Lambton Shores Phragmites Working Group
- Nature Conservancy of Canada
- Ducks Unlimited
- Long Point Waterfowl and Wetland Research
- Master Gardeners of Ontario
- Ontario Horticultural Association
- Lambton Community in Bloom
- Grand Bend and Area Horticultural Society
- Conservation Ontario
- Carolinian Canada
- Researchers

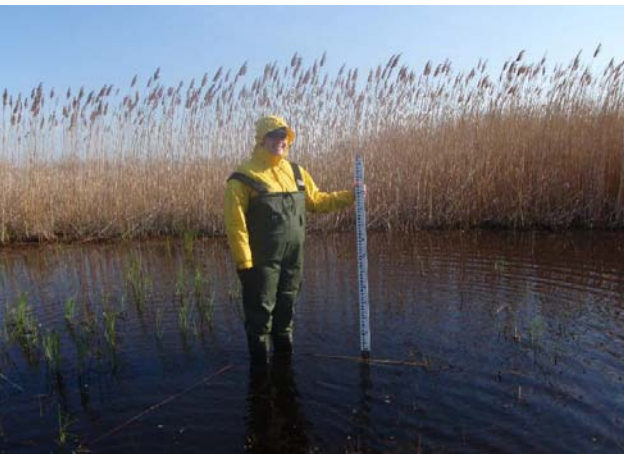
Ontario Phragmites Working Group

Goals and Objectives:

- Promote effective management of invasive *Phragmites* – Training Workshop for Municipalities
- Raise public awareness, collect information on spread, share knowledge about control projects, provide references to *Phragmites* related research and up to date information
- Provide a step by step guide for private landowners, cottage associations, municipalities and other interested parties interested in undertaking a *Phragmites* control program- Invasive *Phragmites* Management Tool Kits
- Facilitate obtaining overwater chemical control options (Rodeo, Habitat)



Acknowledgments: Canada/Ontario Agreement/Lake Erie Management Unit, Ontario Parks, Rondeau Bay Waterfowler's Association, Frank Letourneau (Dover Agri-serve), Darren Jacobs, Keith McLean, Rondeau Provincial Park Staff (Emily Slavik, Rick Hornsby, Richard Post, Jon Wild, Mike Nettleton, Mark McClennan, Chris Cakebread, Brady Waterworth), The Friends of Rondeau (Ric and Anne McArthur), LEMU Staff (Lindsay Bennett, Heather Whitford, Tina Werner, Brian Locke, Rich Drouin, Kurt Oldenburg, Dixie Greenwood, John Cooper), Greg Dunn, Kent Stewardship Rangers, The Lake Huron Centre for Coastal Conservation (Geoff Peach), The Friends of Sauble Beach, Wasaga Beach Provincial Park (Keith Johnston, Natalie LeClerc), Turkey Point Provincial Park (Mike Postma, Julie Foster), SW Zone On Parks (Sandy Dobbyn), Jessie Orr, Nikki Brewer, Chad Burley, Milan Sojak, Dr. Jan Ciborowski, Dr. Joe Gathman (Great Lakes Coastal Wetlands Consortium), Pete Cloud, Manny Cloud, Kettle and Stony Point First Nation



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Dover Agri-serve



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Moravian Town
First Nation

Is this the next problematic invasive?

