



Invasive
Species
Centre

Catalyst for research and response



Canada-Ontario Invasive Species Centre

Invasive Species Impacts on Biodiversity

Presentation to
**Northern Ontario,
First Nations Environment Conference**
October 3, 2012



Presentation Outline

1) Invasive Species Impacts

- 1) Economic
- 2) Ecological

2) Invasive Species in Northern Ontario

3) Initiatives to Address Invasive Species Threats and Impacts



What is an (Alien) Invasive Species?

A species that extends beyond its normal range and competes with native animals or plants for nutrients and habitat (simplified definition)

- Can be from another continent
- Can be from an adjacent ecosystem (elsewhere in Canada for example)
- Many pathways – ships ballast water; packaging material; human travel; wood movement; garden and aquarium trades; artificial canals; recreational boating; bait fish release; etc.
- Key reason for invasive species' successes – they have few (if any) natural predators in introduced environment



Invasive Species Impacts

- Ontario - epicenter for invasive species
- Economic costs/losses - measured in Billions
 - \$34 Billion projected nationally by 2015
 - Current examples in Ontario
 - \$7.4M – City of Toronto on emerald ash borer
 - \$8.0M – Canada on sea lamprey (\$30M Can. & U.S.)
 - \$7.4M – Ontario hydro producers on zebra mussels
- Ecological & Social impacts - “Devastating”



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Canopy, Pre Emerald Ash Borer (EAB)
infestation



Canopy, Post EAB infestation



Courtesy: Dave Kreutzweiser



Forest Floor , Pre EAB
infestation



Forest Floor , Post EAB
infestation





Some “High Profile” Invasive Species

- Aquatic
 - Sea Lamprey
 - Asian Carp
- Terrestrial (Forest)
 - Emerald Ash Borer
 - Mountain Pine Beetle
- Terrestrial (Plant)
 - Garlic Mustard
 - Giant Hogweed



Sea Lamprey

Asian Carp (?)



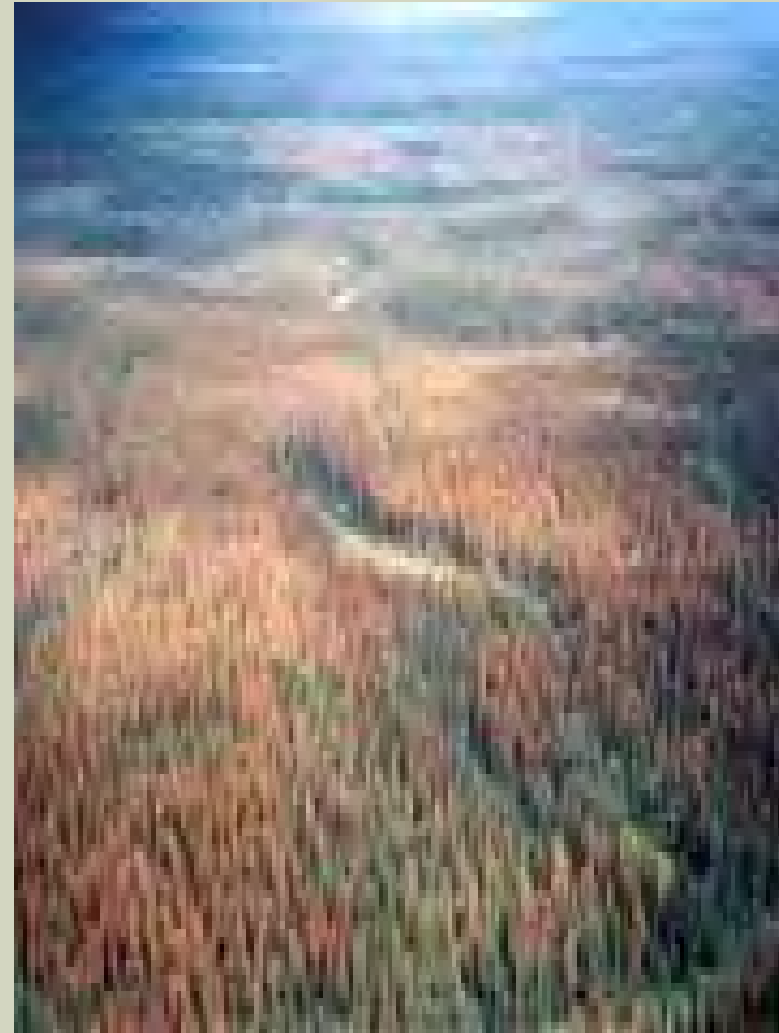


Emerald Ash Borer (EAB)





Mountain Pine Beetle





Garlic Mustard





Giant Hogweed





Invasive Species in Northern Ontario

Currently...

- Ecosystems less impacted (than in South)
- Landscape less disturbed and waterways less commercialized
- Boreal forest viewed as “hostile” to introduced species (low survival)
- Some non-native, “exotic” species found (red clover & ragwort), but not invasive/destructive to ecosystem
- More research required (little literature published by comparison to other areas)



Invasive Species in Northern Ontario

Future Considerations...

- EAB (Minnesota) & MPB (BC & Prairies)
- Climate Change (species moving north @ rate of 16.9km/decade – Chen et al)
- NR Development (mining; hydrodev.; forestry)
- Dams & river barriers (i.e. Black Sturgeon River)
- Bait fish
- Exotic earthworms (?)
- Tree diseases (pathogens) – canker and white pine blister



What is being done?

- Enhanced response from governments
 - Ontario Invasive Species Strategic Plan (2012)
 - An Alien Invasive Species Strategy for Canada (2004)
- Invasive Species Centre (ISC) established
 - ISC incorporated as not-for-profit, March 2011
 - Board of Directors established, June 2011
 - 2012/13 will be first full year of operation



ISC Function

To Enhance Coordination of:

- Natural and Social Scientific Research;
- Knowledge and Technology Transfer;
- Public Outreach and Communications...

to Mitigate the Ecological and Economic threats of Aquatic and Terrestrial Invasive Species



ISC Key Partners and Stakeholders

- Government (federal, provincial, municipal, state – international through *North American Invasive Species Network (NAISN)*);
- First Nations and Métis;
- Academia;
- Private Sector;
- Non-government organizations; and
- Public.



ISC Immediate Priorities (partial list)

- Launch Call for Proposals (launched Sept 24, 2012)
- Build on Projects Sponsored in 2011 (part year operation) – Examples of 2011 Projects:
 - **Enhanced Monitoring/Detection Techniques;**



“Prism Traps” – Pest Monitoring





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Grow Me Instead





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 - **Legislative and Policy Gaps**



Take Home Message

- Prevention of Introduction is Key!
- Prevention is Key – *Everyone has a Responsibility*
- Early Detection and
- Rapid Response
- Ongoing Management (Containment, Control, Mitigation and Adaptation)

Taken Together – 2nd
Order of Priority



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Thank You

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