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Evaluating the Threat of Asian Carps to the Great Lakes: A Binational Risk Assessment

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Canada



Outline

- The Need
- What is Risk Assessment?
- The Plan
- The Next Steps



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The Need

- High uncertainty and conflicting information about Asian carps – makes difficult decisions more difficult.
- Fiscal constraints – need to prioritize activities.
- Direction for effective, efficient actions based on a foundation of science.





The Need

- Binational issue requiring binational cooperation.
- Canada-US discussions began last spring to determine how best Canada could contribute to protecting the Great Lakes.
- Identified expertise in Canada for **risk assessment** to help focus and guide prevention, monitoring and control actions.



The Need

- We know there's a risk to the Great Lakes [Mandrak and Cudmore (2004), Kolar et al. (2005)]
- Why do another risk assessment and what more could it tell us?



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Risk Assessment - Objective

“..to evaluate, order, and structure incomplete knowledge so as to allow decisions to be made with as complete an understanding as possible of the current state of knowledge, its limitations, and its implications.” (Morgan, 1978)





Biological Risk Assessment for Aquatic Invasive Species (AIS)

- Likelihood of an AIS introduction
 - probabilities of **arrival, survival, establishment, and spread**
- Magnitude of consequences (**ecological impacts**)
- Uncertainty
 - considers quality and quantity of data available to rank likelihood and magnitude
 - provides risk managers with indication of the inherent strengths and weaknesses in the risk assessment





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The Plan

- Previous risk assessments answered broad questions: what is the risk to all of Canadian, American waters?
- Now: more targeted questions needed to address more specific management needs.
- Now: greater understanding about Asian carp biology.



The Plan

- 12 month time frame for ecological assessment
- CEARA to lead; GLFC to coordinate
- USGS, USFWS writing team members
- Researchers from state, provincial, federal and academic groups
- Scientifically peer reviewed
- Next: 5 month socio-economic impact assessment



Identified Management Needs (some examples)

- Arrival:
 - All entry routes, detection limits
- Survival:
 - Areas with sufficient food
- Establishment:
 - # individuals needed to establish, vulnerable areas, key spawning areas (including non-tribs?)
- Spread:
 - timeframe for spread into/within the lakes
- Impact:
 - Cumulative impact of additional planktivores





Expected Outcome – Management Advice

- Focus prevention efforts on all high risk entry points.
- Identify vulnerable areas for early detection and surveillance.
- Inform rapid response.
- Identify key control points.





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Next Steps

- Identify new, ongoing, and required research to best answer RA elements.
- Data collection and modeling has begun.
- Management needs identified in a scoping document.
- Iterative process between management and science to ensure useful advice.
- Recognize constraints – time, resources.



RA Deliverables

- Biological Synopsis – bring the state of knowledge up to date since 2005
- Annotated bibliography of the Russian literature
- Science peer reviewed Risk Assessment*
- Proceedings from the peer review*
- Science Advisory Report for managers*
- Primary publications

* Within prescribed timelines





Timeline: Key Milestones and Deliverables

2010

2011

2012

	No	De	Ja	Fe	Mr	Ap	My	Jn	Jl	Au	Se	Oc	No	De	Ja	Fe	Mr
MILESTONES:																	
Managers Workshop	■																
Scientists Meeting	■																
Research	■	■	■	■	■	■	■	■	■	■							
Mid-Year Scientists Meeting							■										
Mid-Year Update to Managers							■										
Drafting of Risk Assessment (RA)											■						
RA out for review												■					
Scientific Expert Peer Review													■				
C&A Socio-economic Assessment															■	■	■
DELIVERABLES:																	
Meeting Record		■															
Scoping Document		■															
RA Workplan			■														
Draft RA											■						
Final RA														■			
Peer Review Proceedings														■			
Science Advisory Document														■			
C&A Socio-economic Assessment																	■





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Questions?

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CEARA

Centre of Expertise for Aquatic Risk Assessment
Centre d'expertise analyse des risques aquatiques



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