Binational Grass Carp Risk Assessment

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Asian Carp Risk Assessments

- Provide science advice for management in terms of prevention and control
- All Asian carps: high risk to Canadian waters in previously conducted risk assessment (RA) (Mandrak & Cudmore 2004)
- Silver and Bighead carps: Kolar et al. 2007, binational risk assessment (2011)
- Grass Carp: binational risk assessment for the Great Lakes launched April 2014
- Black Carp: Nico et al 2005, launched Sept.
 2015







Why do we need a Grass Carp RA?

- Grass Carp consume large amounts of vegetation. This can change plant, invertebrate and fish communities, as well as water quality
- Current proximity to, and occurrences of Grass Carp in, the Great Lakes basin represents a potential threat to Great Lakes fisheries
- Evidence of reproduction in Lake Erie (American waters)
- Economic and ecological costs of prevention are less than managing Grass Carp after introduction
- Direction for effective prevention, monitoring and control actions is needed = **Ecological Risk Assessment**



Grass Carp RA: Background

Organizations involved in the risk assessment:

- Initiated by DFO's Asian Carp Program
- Coordinated by the Great Lakes Fishery Commission
- Endorsed by the Asian Carp Regional Coordinating Committee
- In partnership with the U.S. Geological Survey & the U.S. Fish and Wildlife Service
- Numerous other government and academic groups in Canada & US



Grass Carp RA: Background

- **April 2014:** Binational RA writing team established.
- June 2014: Scoping Meeting to bring researchers & managers from Canada and the U.S. together to identify management concerns, research needs and knowledge gaps.
- June 2014 April 2015: Data collection & research to address identified management & research needs assigned & carried out.
- Dec. 2014: Progress Meeting to provide mid-project update and identify issues.



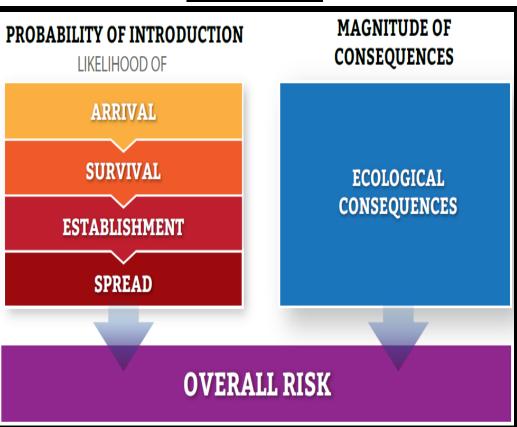
Grass Carp RA: Project Purpose

- Incorporate existing, ongoing, and new research results on Grass Carp from Canada and the United States.
- Use results to evaluate the current state of knowledge with respect to Grass Carp arrival, survival, establishment, spread and ecological consequences in the Great Lakes basin.
- Do so using risk assessment in a peer-reviewed format to provide science advice to managers and decisionmakers based on best available information.



Risk Assessment Process Purpose Process

Provide a binational, science-based assessment of the current level of risk to the Great Lakes and transfer that information to inform decisions around the management and prevention of Grass Carp.







Probability of Introduction

- Arrival:
 - entry routes (physical connections, human-mediated release), detection limits
- Survival:
 - Food resources, thermal tolerance
- Establishment:
 - # individuals needed to establish, suitable spawning & nursery habitats, survival of early life stages
- Spread:
 - Natural dispersal, canals, human-mediated dispersal



Expected Deliverables

- Government Reports (Annotated Bibliography of Russian-language literature; Biological Synopsis – up to date collection since 2003)
- Advisory documents:
 - Proceedings (document peer review meeting discussions, consensus process)
 - Science peer reviewed Risk Assessment Document (technical details & supporting information)
 - Science Advisory Report (summarize key conclusions & advice developed from risk assessment)
- Primary publications, communication reports, fact sheets



Expected Outcomes

- ➤ Binational ecological risk assessment on Grass Carp arrival, survival, establishment, spread and impact in the Great Lakes basin to better inform managers and decision-makers, and specifically:
 - Help focus prevention efforts on all high risk entry points
 - Identify vulnerable areas for early detection and surveillance
 - Inform rapid response
 - Identify of key control points
 - Understand relative risk compared to bigheaded carps



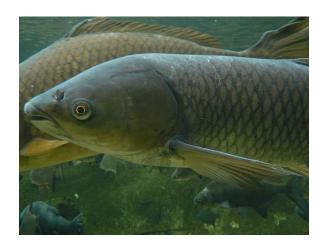
Next Steps

- > April 2015: drafting of RA document and send out for scientific peer review.
- ➤ June 2015: Scientific peer review meeting where invited participants (scientific experts in a relevant field e.g., Grass Carp biology, risk assessment) review the RA document & supporting research documents.
- > ~Sept. 2015: release of peer-reviewed RA document.

Thank you!











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