



Great Lakes Commission Exploring Organisms in Trade

**Joint ANS Panel Meeting
June 17, 2008
Milwaukee, Wisconsin**

OIT Project Team

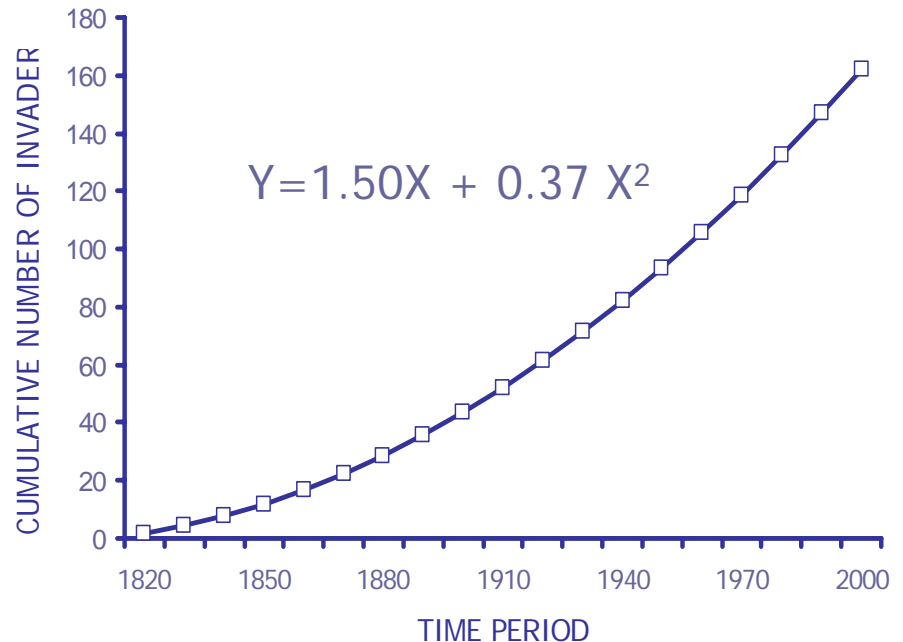
- *Tim Eder, Executive Director*
- *Kathe Glassner-Shwayder, Senior Project Manager, Aquatic Invasive Species*
- *Tom Crane, Senior Program Manager, Resource Management*
- *Roger Gauthier, Program Manager, Information Technology*
- *Erika Jensen, Program Specialist*
- *Maite Chavez, Quebec Intern*

GREAT LAKES AQUATIC INVASIONS

The Problem

The integrity of the Great Lakes basin ecosystem is threatened by the presence of more than 180 non-indigenous aquatic species brought into the region from vectors across the globe.

Cumulative Number of Invasions over Time



Invasive species: “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health”

Source: U.S. Executive Order 13112 (1999) and National Invasive Species Council and Aquatic Nuisance Species Task Force (2007).

GREAT LAKES AQUATIC INVASIONS

The Problem

Primary vectors identified as contributing to Great Lakes aquatic invasions as identified by the Great Lakes Regional Collaboration Aquatic Invasive Species Strategy Team (2005)

1. Maritime Commerce



2. Aquaculture



GREAT LAKES AQUATIC INVASIONS

The Problem

3. Canals and waterways

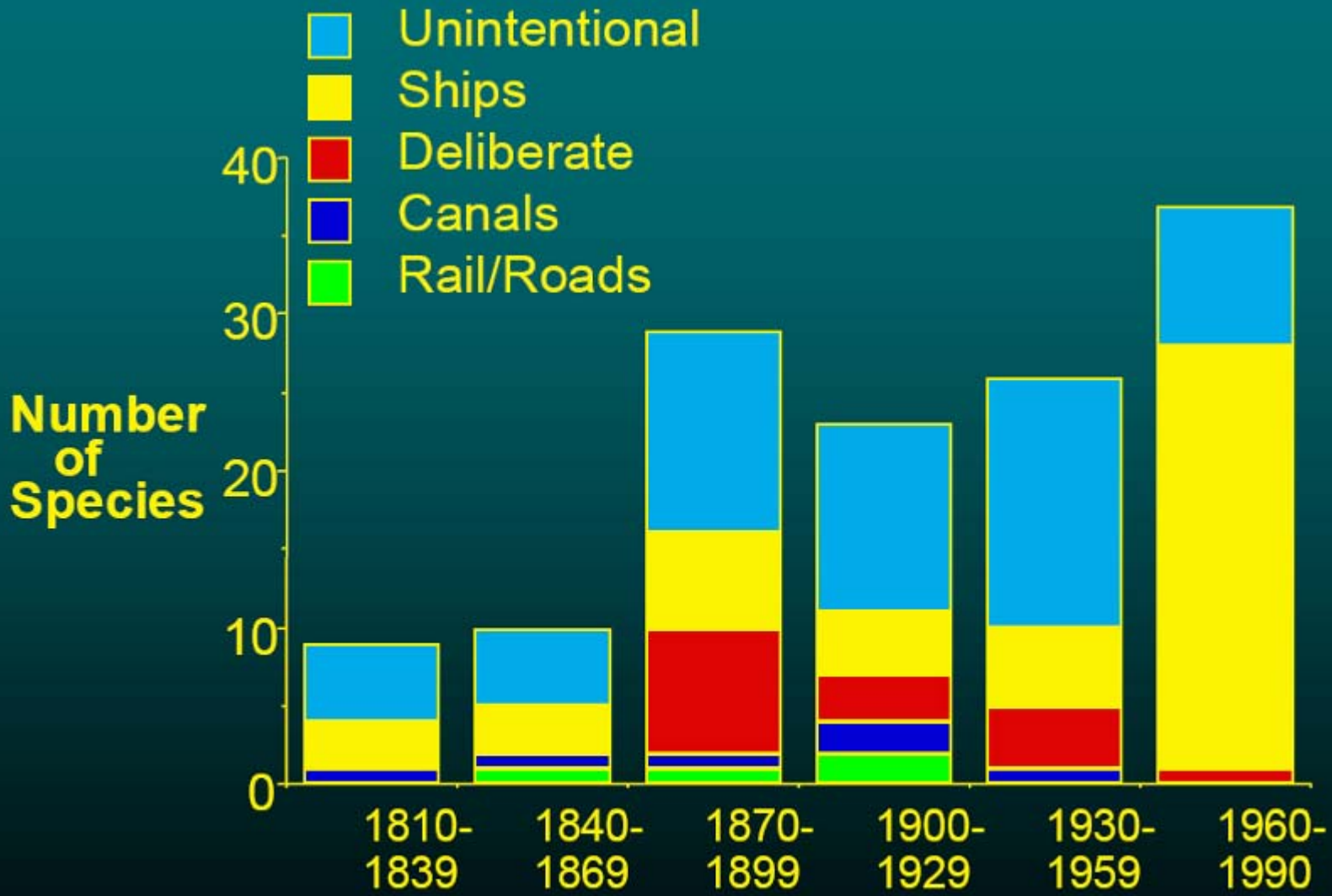


4. Recreational activities



5. Organisms in trade





Mills et al., *J. of Great Lakes Research* (1993)

GREAT LAKES AQUATIC INVASIONS

The Problem

“Many harmful nonindigenous species in the Great Lakes basin have been introduced through the trade in live aquatic organisms” (Mills et al. 1993, Ricciardi 2001, Czarapata 2005).

“In the Laurentian Great Lakes, commercial activities involving live fish bait, horticultural and water garden plants, biological supplies, pets, and live food are the principal pathways for intentional introductions of live aquatic organisms” (Keller and Lodge 2005).

GREAT LAKES AQUATIC INVASIONS

Principal pathways include

Live food



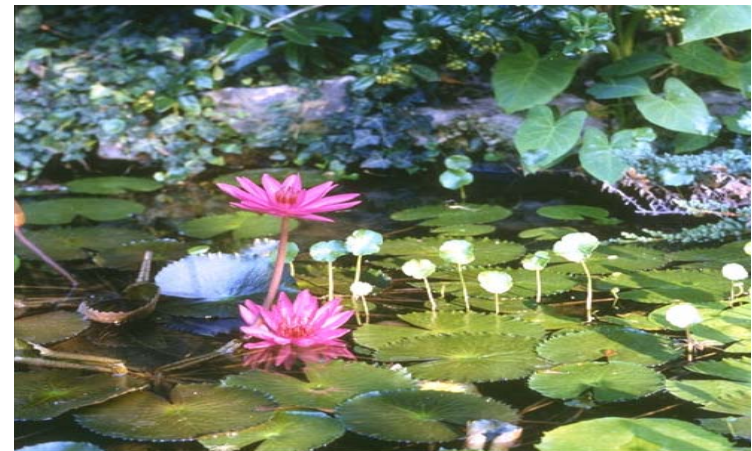
Live bait fish



Aquarium



Horticulture and Water gardens



ORGANISMS IN TRADE

A Contributing Source to the Process of Aquatic Invasions

- Increases in the rate of invasion have been directly tied to an expansion and globalization of trade.
- The trade of live organisms across geographic regions creates opportunities for biotic interchange, both intentional and unintentional on regional to global scales.
- Trade through human activities provides a diverse supply of organisms to new geographic regions, creating the first critical phase in a sequence of events that result in invasions and related impacts.

(Greg Ruiz and James Carlton 2003)

Aquatic Invasive Species (AIS) Management in the Great Lakes

- Species vs. vector based approach
- GLRC Vectors:
Maritime commerce, Canals and waterways, Recreational Activities, Organisms in trade, Aquaculture
- Point vs. nonpoint source “pollution”

“Importation, interstate commerce and trade are among the most dangerous pathways for introduction of invasive species in the Great Lakes ecosystem”

Source: GLRC AIS Strategy Team

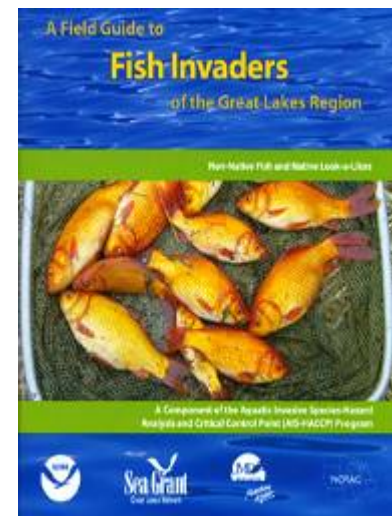
AIS Management in the Great Lakes

- Multiple pathways: Aquarium and pet trade, nursery and water garden outlets, aquaculture, live bait, live food fish, etc.
- Multiple management approaches:
 - Education/outreach (Habitattitude™)
 - Voluntary management practices (AIS-HACCP)
 - Federal & state management plans & regulations

→ Multiple challenges/complexities



Habitattitude™
PROTECT OUR ENVIRONMENT
DO NOT RELEASE FISH AND AQUATIC PLANTS



Building a Framework to Advance AIS Management of Organisms in Trade into the Great Lakes Region

- **Planning Grant:** Led by the Great Lakes Commission
- **Funder:** Great Lakes Protection Fund
- **Timeframe:** January – September 2008
- **Premise:** Scoping and planning exercise
- **Outcome:** Full project proposal

The overarching purpose of this exercise is to develop, on a robust level, the components of a comprehensive project designed to enhance the capacity of the region to reduce the invasion risks of organisms in trade based on a cooperative effort between the public and private sector.

Building a Framework to Advance AIS Management of Organisms in Trade into the Great Lakes Region

Project Components

- Advisory Committee providing overall guidance and direction on the project
 - 13 members
 - Agency, industry, NGOs
- OIT Pathway Expert Teams
 - Aquaculture
 - Live Bait Fish
 - Live Food Fish
 - Aquarium/Pet
 - Horticulture and Water Garden
- Information Technology Team

Building a Framework to Advance AIS Management of Organisms in Trade into the Great Lakes Region

Project Components

Pathway summaries being developed by expert teams using the following guidelines:

- Scope of the pathway in the Great Lakes region, including the types/volume of species being sold and their economic value
- Points in the pathway at which the risks of invasive species introduction or spread are the highest (e.g., choice of organism, sales, transport, end use, consumer behavior)



Building a Framework to Advance AIS Management of Organisms in Trade into the Great Lakes Region

Project Components

Pathway summaries being developed by expert teams using the following guidelines

- Current and past efforts to mitigate the risk of AIS introduction or slow the spread for the live bait pathway (e.g., education, outreach, best management practices, information technology, regulation, enforcement)
- Gaps and unmet needs that need to be addressed in terms of additional knowledge, information technology, authority, collaboration, or other resource

Building a Framework to Advance AIS Management of Organisms in Trade into the Great Lakes Region

Project Components

Workshops to provide expertise, technical advice and guidance to the Advisory Committee and Commission staff

- Workshop I:
 - Vector Assessment
 - Information Integration
- Workshop II:
 - Information Integration
 - Management & Policy



Building a Framework to Advance AIS Management of Organisms in Trade into the Great Lakes Region

Workshop I: Objectives

- Convene key players (government, commercial, research, technology and non-government sectors) to stimulate dialogue on the OIT issue
- Strengthen our understanding of the OIT vector in potential AIS introduction, establishment and spread in the Great Lakes region
- Learn more on how industries involved in OIT operate and practices that may lead to or help mitigate AIS introduction and spread



Building a Framework to Advance AIS Management of Organisms in Trade into the Great Lakes Region

Workshop I: Objectives

- Assess how consumer behaviors may contribute to or help mitigate AIS introduction and spread
- Identify information gaps and needs that could reduce the potential of AIS introduction and spread through activities associated with OIT
- Explore potential options for addressing threats from the OIT vector through information technology and management applications

Building a Framework to Advance AIS Management of Organisms in Trade into the Great Lakes Region

* Overall Project Goal

Develop new management and policy tools and extend existing tools to help reduce the AIS introduction and spread through the trade of live organisms based on:

- Partnerships established between representatives of industry, management and policy agencies, and environmental groups from the U.S. and Canada
- Information technology that is applied to support systematic organization, accessibility, sharing and distribution of OIT information



Overall Challenges Posed by the OIT Vector

- Find solutions to mitigate the risks associated with the trade of live organisms while maintaining economic viability of the industry
- Develop strategies that address information that is missing, inaccurate and uncertain
- Address the issue of increasing availability of species through non-regulated sales (e.g. internet)
- Strengthen our understanding of how to influence the behavior of consumers
- Apply information technology in the development of solutions needed to mitigate OIT related risks.