



***Regional Perspectives:  
State Management Planning for the  
Prevention and Control of  
Great Lakes Invasive Species***

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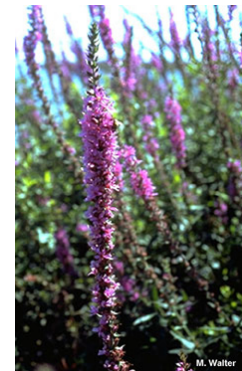
**October 26, 2005**



Great Lakes  
Commission  
des Grands Lacs

# ***A Collaborative Approach to Advance State Management Plans for Prevention and Control of Aquatic Nuisance Species***

- The Great Lakes Commission welcomes the opportunity to promote a regional approach to state management planning on ANS prevention and control
- Funded through NOAA's National Sea Grant Program, the Great Lakes Commission is administering this grant in cooperation with Sea Grant programs & state natural resource agencies in the Great Lakes region
- The initiative is supporting a series of state specific workshops, which vary depending on where each state stands in the SMP process
  - Development, implementation, evaluation, revision
  - Solely aquatic invasive species SMP
  - Combined aquatic and terrestrial SMP





## ***A Collaborative Approach to Advance State Management Plans for Prevention and Control of Aquatic Nuisance Species***

- Commission staff are using the workshops to collect information on the SMPs in preparation for a regional summit (fall 2006) with an eye towards:
  - shared priorities
  - implementation strategies
  - funding opportunities
- A final report will be prepared after the regional summit which will be distributed to the states





# ***Invasive Species SMP Regional Summit: An Advertisement***

- The regional summit will foster communication between the Great Lakes states and allow sharing of ideas and lessons learned from state specific workshops
- States will also have the opportunity to develop collaborative strategies for controlling invasive species at the regional level
- Interjurisdictional collaboration, cooperation, and coordination to advance a regional framework for SMP planning



# ***Aquatic Invasive Species: A Priority Environmental Issue in the Great Lakes Region***

- Ecological and economic costs from aquatic invasive species introductions are mounting:
  - Ecological impacts
    - disruption of the natural balance of food webs
    - degradation of habitat and biodiversity: placing 42% of threatened and endangered species at risk
  - 2005 economic losses on a national scale estimated at \$5 billion, resulting from impacts such as
    - fouled water intakes
    - reduced value of recreational and commercial fishing
    - decreased property
  - Human health risks

# *Invasive Species*

- Plants

- aquatic
- terrestrial

- Animals

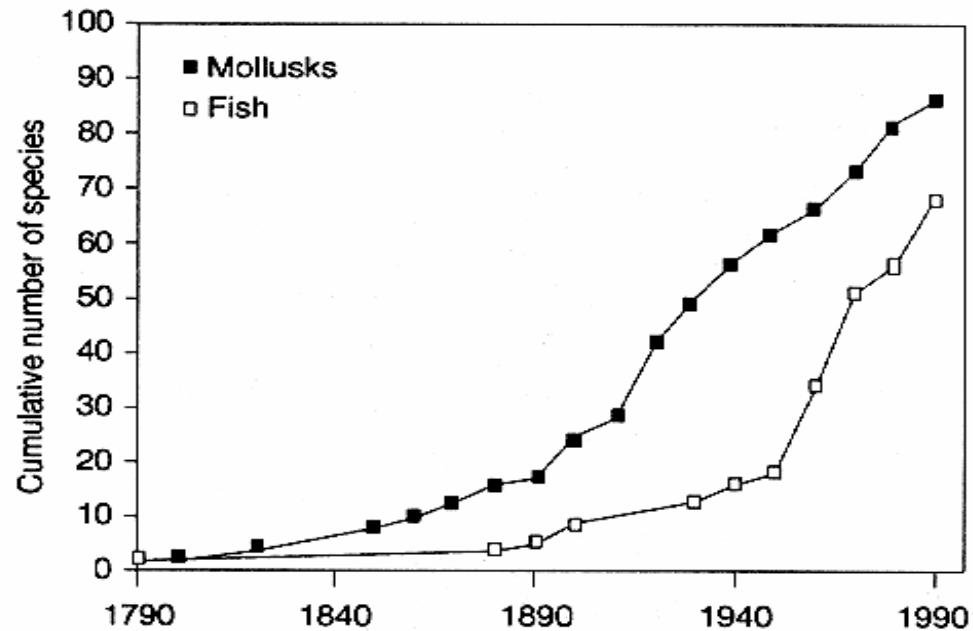
- insects
- fish
- amphibians
- birds
- mammals

- Pathogens

- bacteria
- viruses



***“By the end of the 21st century, biological invasions will become one of the most prominent ecological issues on Earth.”***  
**OTA Report (1993)**



Number of species over 200 years (fish, mollusks).



# ***Aquatic Invasive Species: A Priority Environmental Issue in the Great Lakes Region***

- Great Lakes, one of the world's most valuable freshwater ecosystems, are vulnerable to aquatic invasions through vectors such as
  - Maritime commerce (ballast water discharges)
  - Aquaculture
  - Canals and waterways
  - Recreational activities
  - Trade and use of live organisms

# *Round Goby*

## Pathway:

- Transported in ballast water of oceanic vessels from Eurasia

## Impacts:

- Feeds on lake trout, perch, and sturgeon eggs
- Degrades fish habitat
- Devalues recreational fishery



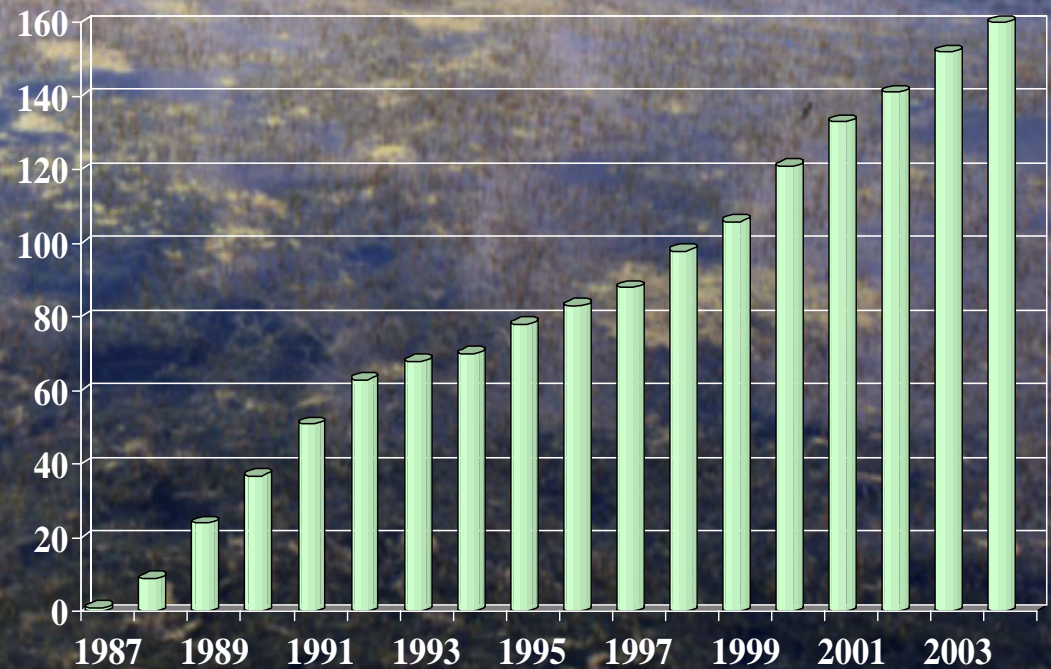
# Eurasian Watermilfoil (*Myriophyllum spicatum*)

## Impacts of Minnesota Infestations:

- Native aquatic plant communities
- Recreational Uses

## Pathways:

- Trailered boats
- Horticultural
- Curly-leaf pondweed
- Hydrilla



# *Pathway of Aquatic Plant Introductions: Horticultural Trade*

## Risk Assessment:

- Orders placed to 34 aquatic plant vendors nationwide
- Federal and State prohibited species were acquired 92% of the time
- 93% orders had species not specifically requested
  - 10% were Federal or State Prohibited species

(Maki and Galatowitsch, 2004)



# Asian Carp

## High Risk Threat:

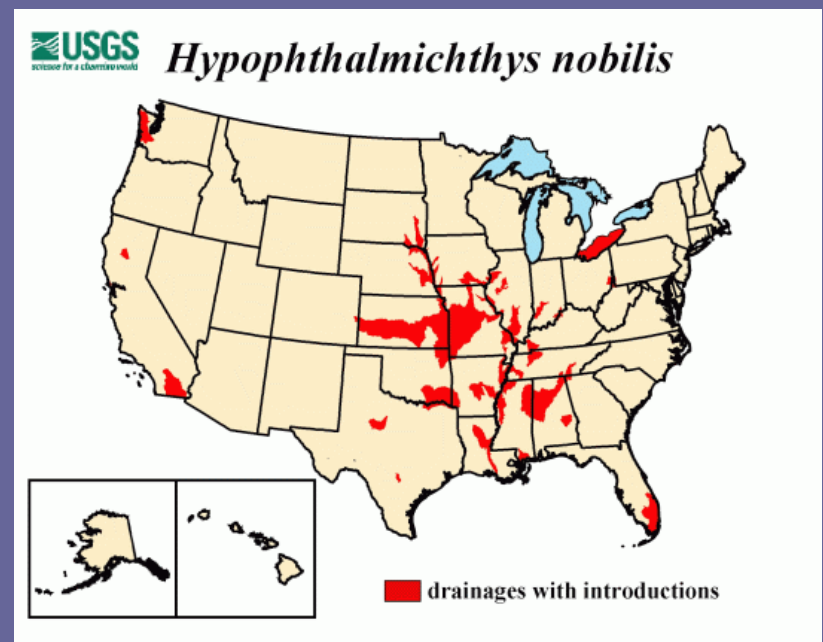
- Native fisheries, wildlife resources, and water recreation.
- Over \$6.6 billion in revenue from 12 million visitor days for hunting, fishing, boating, and sightseeing

## Pathway:

- Introduced from Asia to fish farms in southern states, escaped into Mississippi River during flooding



One Asian carp caught in 2003  
(Lake Pepin, Minnesota)



Asian Carp are considered a high risk invasive fish in the Lower Missouri River with populations migrating through the Illinois River system towards Lake Michigan



# Zebra Mussel

## Impacts:

- Habitat and fisheries, nutrient cycling, wildlife resources, and water recreation.
- Industrial operations

## Pathways:

- Shipping industry
- Barges
- Trailerred watercraft
- Water (i.e. live wells)
- Natural water flow





# ***The Value of State Management Plans for the Prevention and Control of Aquatic Nuisance Species***

- State Management Plans (SMPs) serve as an effective tool for ANS prevention and control
  - Identify and address aquatic nuisance species (ANS) problems involving many jurisdictions, federal and state agencies, private entities and wide array of vested stakeholders
  - Reinforce collaboration between national, regional, state and local efforts to prioritize and resolve ANS problems
  - Facilitate, within geographic areas: information sharing, development of consistent messages, coordination and complementary plans, reduction of duplication of efforts
  - Raise awareness in public and private sectors, facilitating support and taking action on ANS prevention and control

# ***State Management Plans for Prevention and Control of Aquatic Nuisance Species***

- Aquatic Nuisance Species (ANS) State Management Plans (SMPs) were created by Section 1204 of the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA)
- Approval for a SMP must come from the national ANS Task Force (Task Force), established under NANPCA
- Upon approval of a SMP by the Task Force, the state is eligible for implementation funds, based on federal cost sharing





## ***Priority Areas for SMP Approval***

- Task Force approval of SMPs requires states to:
  - Identify and describe state and local programs for environmentally sound prevention and control of the target aquatic nuisance species;
  - Identify federal activities that may be needed for environmentally sound prevention and control of ANS and a description of the manner in which those activities should be coordinated with state and local government activities;
  - Identify any authority that the state does not have at the time of development of the plan deemed necessary for the state to protect public health, property, and the environment from harm by ANS; and
  - Set a schedule of implementing the plan, including a schedule of annual objectives and enabling legislation.

## ***Funding Parameters***

- States must match federal funding at 25%
- Federal funding is only for SMP implementation, states must come up with the resources for initial plan development
- Each Great Lake state with an approved plan has stated that federal funding is not nearly enough for full implementation, therefore states need to also find alternative sources for SMP implementation
- States like Pennsylvania that are developing management plans that are focusing on both aquatic and terrestrial invasive species can only use Task Force funding to implement aquatic portions of their plan





## ***A Model Comprehensive State Management Plan for ANS Prevention and Control***

- To provide a regional framework for SMP development, the Great Lakes Commission developed a model ANS plan (1996) with guidance from the Great Lakes Panel
- The model plan provides guidance to the Great Lakes states based on the following 3 goals:
  - Prevent new ANS introductions
  - Limit the spread of established ANS populations
  - Abate harmful ecological, economic, social and public health impacts resulting from Great Lakes aquatic invasions



# ***A Model Comprehensive State Management Plan for ANS Prevention and Control***

- Recommended elements of the model plan to meet requirements of the ANS Task Force:
  - Executive Summary
  - Overview of state specific ANS issues and priority species
  - Existing authorities, programs, policy
  - Management Actions (based on 3 goals of prevention, limiting spread and impacts)
  - Implementation (schedule and timeline)
  - Program monitoring and Evaluation
  - Glossary
  - Appendices



# ***A Model Comprehensive State Management Plan for ANS Prevention and Control***

The section on management actions of the model plan was built on the following hierarchy:

- Goals
  - Problem Statements
    - Objectives
      - Strategies
        - \* Tasks
- Implementation Table
- Program Monitoring and Evaluation



## ***A Model Comprehensive State Management Plan for ANS Prevention and Control***

- **Implementation Table:**
  - Brief title of action
  - Action ID number
  - Funding Source
  - Lead organization
  - Cooperating organizations
  - Funding/Staff (\$\$\$ and FTEs)
  - Future Needs

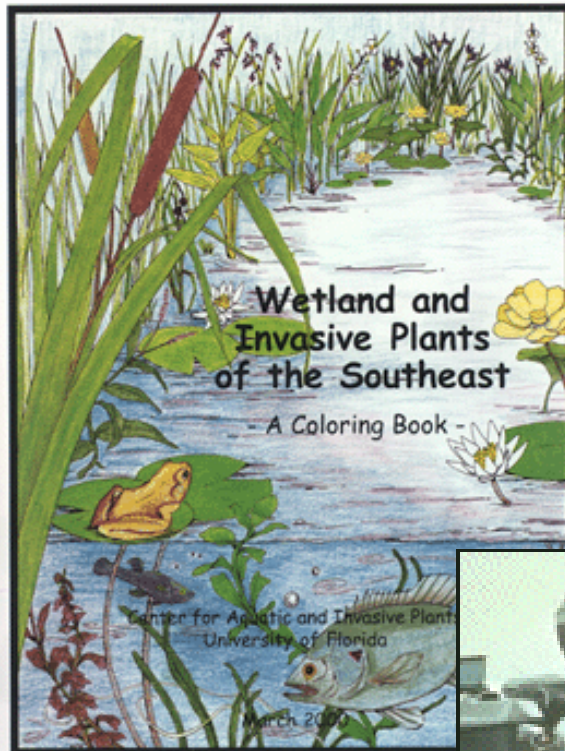


# ***Information and Education Strategies***

## **Identify Target Audience**

- bait shops
- fish producers
- plant nurseries
- power plants
- pond owners
- lake associations
- boaters and divers
- water sanitation and health
- county drainage boards
- hikers and wildlife viewers
- fishing clubs
- university researchers
- pet store dealers
- drinking water suppliers
- plant control companies

# Information and Education Strategies



Disseminate outreach materials to raise awareness and delivery consistent messages on AIS problems and solutions



**Stop Aquatic Hitchhikers!**  
**Clean all recreational equipment.**

U.S. Fish & Wildlife Service

The U.S. Fish & Wildlife Service graphic includes a row of ten waterfowl, a map of the United States with red lines indicating waterways, a hand holding a cluster of small, dark aquatic organisms, a close-up of a crayfish covered in dark, fuzzy growth, and the U.S. Department of the Interior and U.S. Fish & Wildlife Service seals.



# *Information and Education Strategies*

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## Preventing the Spread: Deliver consistent messages

BEFORE launching..... BEFORE leaving

1. **Remove** aquatic plants and animals.
2. **Drain** lake or river water.
3. **Dispose** of unwanted live bait. ○
4. **Rinse** equipment with high pressure or 104 F water.  
OR
5. **Dry** everything for at least 5 days.



## *Information and Education Strategies*

Join the national outreach campaign



# **STOP AQUATIC HITCHHIKERS!™**

Prevent the transport of nuisance species.  
Clean all recreational equipment.

[www.ProtectYourWaters.net](http://www.ProtectYourWaters.net)

# **www.ProtectYourWaters.net**



## ***A Model Comprehensive State Management Plan ANS Prevention and Control***

- Program Monitoring and Evaluation:  
Performance measures to assess effectiveness of management actions, such as
  - Whether or not the objectives have been met,
  - If significant changes occur in practices among recreational practices
  - Rate of spread along a river reach or coastline
  - Change in total acreage of habitat occupied by the invasive species or displaced native species
  - Changes in abundance of invasive species and impacted species



## ***Great Lakes Commission Resource: Aquatic Invasive Species***

- The Commission provides staff support for the Great Lakes Panel on Aquatic Nuisance Species
- Great Lakes Panel outreach materials available today:
  - *Biological Invasions Brochure*
  - Three past issues of the quarterly *ANS Update*
  - The Panel website: <http://www.glc.org/ans/panel.html>
- A draft briefing paper prepared for SMP workshops series will be available on the Great Lakes Panel website:
  - *A Regional Approach to State Management Planning for Invasive Species Prevention and Control in the Great Lakes States*



## ***SMP Briefing Paper***

- Designed to provide background regarding
  - Ecological and economic impacts of ANS
  - The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990
    - The National ANS Task Force
    - SMPs
    - Task Force SMP Evaluation Criteria
    - Great Lakes Panel on ANS
  - Emerging and future trends in ANS prevention and control
  - Proposed legislation from the 109<sup>th</sup> Congress
  - Actions Canada is taking to fight ANS



## ***SMP Briefing Paper***

- Task Force funding capabilities for SMP implementation
- Other potential sources for SMP development and implementation
- State management program summaries
- Terrestrial and aquatic – newly emerging trend
  - Summary of activities of each Great Lake state
  - Overarching plan approaches
- State management program summaries
- Regional collaboration and the Regional Summit
- Program Evaluation



## ***Take Home Message***

- We live in an era where cooperation, coordination and collaboration on a local, state and regional level are critical to leveraging funding for SMP implementation with limited federal and state dollars
- I encourage that as you work today with a sharp focus on developing Pennsylvania's invasive species SMP, also keep an eye towards the horizon where your challenges are shared on a regional scale along with the solutions to those challenges
- Apply your regional awareness in identifying invasive species priorities. In working together with your Great Lakes neighbors, Pennsylvania's identified priorities will hold a far better chance in receiving the funding needed for implementation.

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