



# Findings from Minnesota DNR's Rapid Assessment of Trade Pathways for Invasive Species

Chelsey Blanke | Aquatic Invasive Species Pathways and Plans Analyst

# Presentation outline

- Assessment methods
- Cross-pathway opportunities
- Specific-pathway opportunities

1 **\*DRAFT\*** Assessment of Trade Pathways,  
2 Practices, and Programs for Invasive  
3 Species Prevention in Minnesota  
4 **\*This document is a draft. Please do not distribute.\***

## Assessment methods

# Trades that rely on the movement and possession of organisms

- Horticulture
- Pet
- Food
- Bait
- Biological supply



# Assessment methods: data and contents

- Literature review
- Regulatory framework
- Action tables

# Assessment methods: acknowledgements

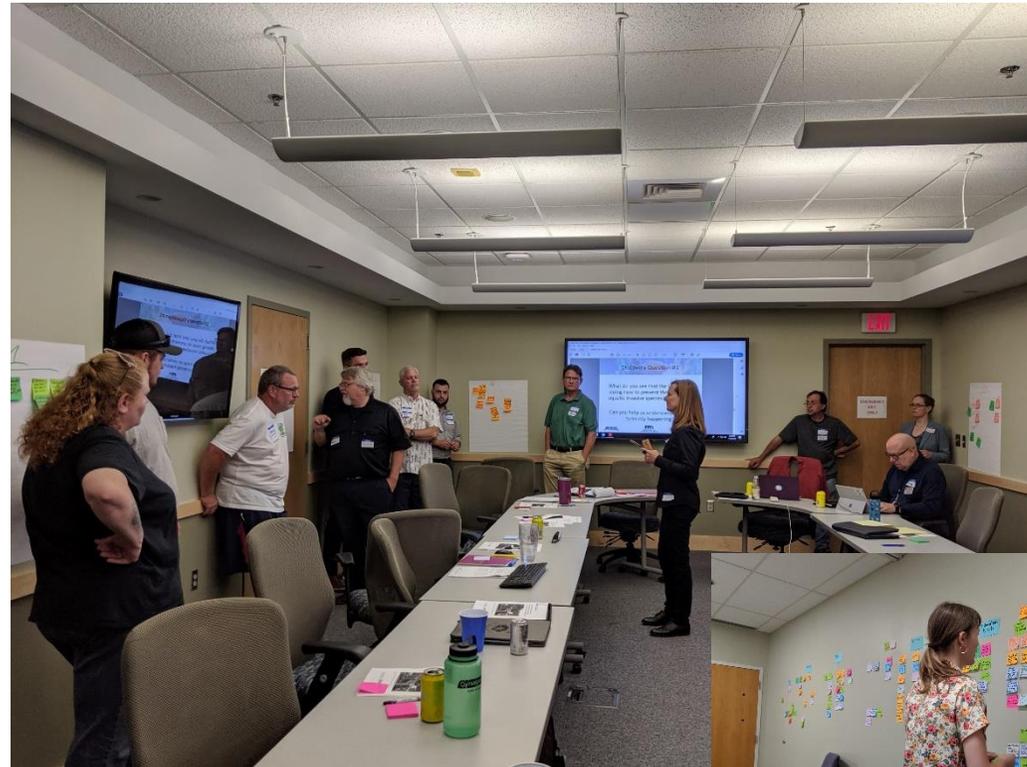
- Sarah LeSage (MI EGLE)
- Tim Campbell (WDNR/WI Sea Grant)
- Samuel Chan (Oregon Sea Grant)
- Greg Hitzroth (Illinois-Indiana Sea Grant)
- Doug Jensen (MN Sea Grant)
- Jacqueline Glaser (MN DNR Enforcement)
- Nick Frohnauer (MN DNR Invasive Species Unit)
- Kelly Pennington (MN DNR Invasive Species Unit)
- Sean Sisler (MN DNR Fisheries)
- Steven Shimek (MN Dept. of Agriculture)
- James Roettger (MN Dept. of Agriculture)
- Charles Dierker (MN Dept. of Health)
- Errin Kramer-Wilt (California Ocean Science Trust)
- Erika Jensen and Cecilia Weibert (GLC)
- Susan Jewell and Katherine Wyman-Grothem (USFWS)
- Stanly Burgiel (NISC)



## Cross-pathway opportunity areas

# Develop relationships with industry

- Determine scale and structure of each trade pathway
  - Catalog retailers and suppliers
    - Connections between them
  - Document organisms traded
- Industry and consumer concerns, motivations, and practices
  - Potential for partnerships



# Develop and distribute educational materials

- Web-based resources specific to each trade
  - Regulations
  - “Do not release” and disposal messaging
  - Commitments
- Partnerships with industry to distribute materials to customers
  - Nathan et al. 2015

## Invasive Aquatic Plants

**What every water gardener and shoreline restorer should know**

Invasive species are plants and animals that are not native to an area, which are capable of causing harm. While most non-native plant species are not a problem, a few, such as purple loosestrife, flowering rush, and Eurasian water-milfoil, harm ecosystems and impede water recreation. Purple loosestrife, once sold and used because of its beautiful flowers, has invaded thousands of Minnesota wetlands, displacing native plants and reducing food and habitat for native species. Other non-native plants, such as yellow iris and pink water lilies, have spread in a few Minnesota waters and appear to have invasive characteristics. Once introduced, invasive species can spread to new areas and can rarely be eliminated. Once established, the costs to reduce their harmful impacts can be considerable.

**How to avoid Invasive Species:**

- **Don't use illegal species**  
Minnesota *Prohibited Invasive Species* are likely to cause problems and should be avoided. *Prohibited Invasive Species* may not be legally sold, purchased, or possessed in Minnesota (see list on back).
- **Use all other non-native species cautiously**  
Most aquatic plants available for sale are non-native. These non-native aquatic plants can be possessed, but must be kept out of public waters, which include most lakes, wetlands, and streams (see diagram and list on back).

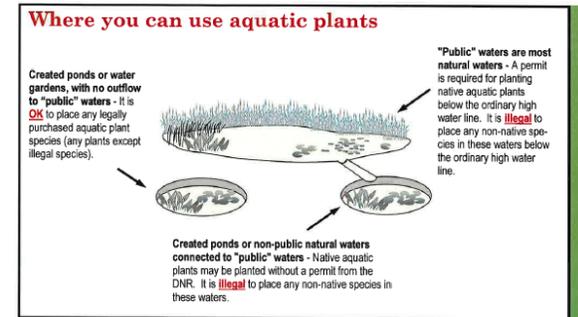
**For the phone number of your DNR Area or Regional Fisheries Office contact the DNR Info Center at 651-296-6157 (toll free 1-888-646-6367)**

Minnesota DNR  
Division of Ecological Resources  
April 2010




Hydrilla is one example of a very invasive plant found "hitchhiking" on rootstocks of ornamental aquatic plants.  
Photo: courtesy of Albert Fox

- **Plant clean material**  
Wash off loose pieces of vegetation and debris in a bucket of tap water before planting. In some cases, a fragment of an invasive species will cling to the rootstock of another desirable plant. Make sure you don't plant any "hitchhikers."
- **Use native plants**  
Native plants are adapted to an area and to each other. Ask your local plant seller or contact the Minnesota Department of Natural Resources (DNR) to find out the best native plants to use in your area.
- **If you want to plant in a natural water body, contact your local DNR office**  
Native species may be planted in natural waters, but a permit is needed to plant below the ordinary high water line in "public" waters (see diagram on back). If you wish to plant in a natural water, please contact your DNR Area or Regional Fisheries Office or the DNR Info Center to find out if the water body is public, to find out if your plants are natives, and to obtain a permit.



### Illegal Invasive Aquatic Plants \*

Minnesota *Prohibited Invasive Species* may not be sold, purchased or possessed in Minnesota. Nevertheless, some of these species are available for sale through catalog and Internet sales. The following is a short list of some of these species known to be sold for water gardening:

- **Ambulia** (*Limnophila sessiliflora*)
- **Flowering rush** (*Butomus umbellatus*)
- **European frogbit** (*Hydrocharis morsus-ranae*)
- **Indian swampweed** (*Hygrophilla polysperma*)
- **Purple loosestrife** (*Lythrum salicaria*, *Lythrum virgatum* and all cultivars)
- **Watermoss, Giant salvinia, caterpillars** (*Salvinia molesta*, *Salvinia auriculata*)
- **Water Velvet** (*Azolla pinnata*)

If you see any Minnesota *Prohibited Invasive Species* for sale in Minnesota, please report it to the DNR.

\* The full list of Minnesota *Prohibited Invasive Species* can be found on the DNR Web site: <http://www.dnr.state.mn.us/eco/invasives/laws.html>

### Regulated Invasive Aquatic Plants

In Minnesota, all non-native aquatic plants available for sale are regulated in some way. Even non-native species that are legal to buy and possess may not be placed in public waters, nor in ponds connected to public waters (see diagram above). The following are examples of some commonly sold non-native species.

- **Banded nardoo, water clover** (*Marsilea matricaria*)
- **Fanwort** (*Cabomba Caroliniana*)
- **Hybrid hardy water lilies** (*Nymphaea* sp.)  
note: native water lilies are *Nymphaea odorata* subs. *odorata* and *N. odorata* subs. *tuberosa*
- **Papyrus** (*Cyperus papyrus*)
- **Parrot feather** (*Myriophyllum aquaticum*)
- **Water hyacinth** (*Eichhornia crassipes*)
- **Water lettuce** (*Pistia stratiotes*)
- **Water poppy** (*Hydrocleys nymphoides*)
- **Yellow iris** (*Iris pseudacorus*)
- **Yellow floating heart** (*Nymphoides peltata*)

For more information call 651-259-5100 or toll free 1-888-646-6367  
[www.dnr.state.mn.us](http://www.dnr.state.mn.us)

Minnesota DNR  
Division of Ecological Resources  
April 2010



# Conduct surveillance of online sales

- GLDIATR
- MN DNR online investigator
- Support enforcement
- Educate online sellers
  - TakeAIM.org regulatory database



**GLDIATR**  
Great Lakes Detector of  
Invasive Aquatics in Trade



**Aquatic  
Invaders in the  
Marketplace**

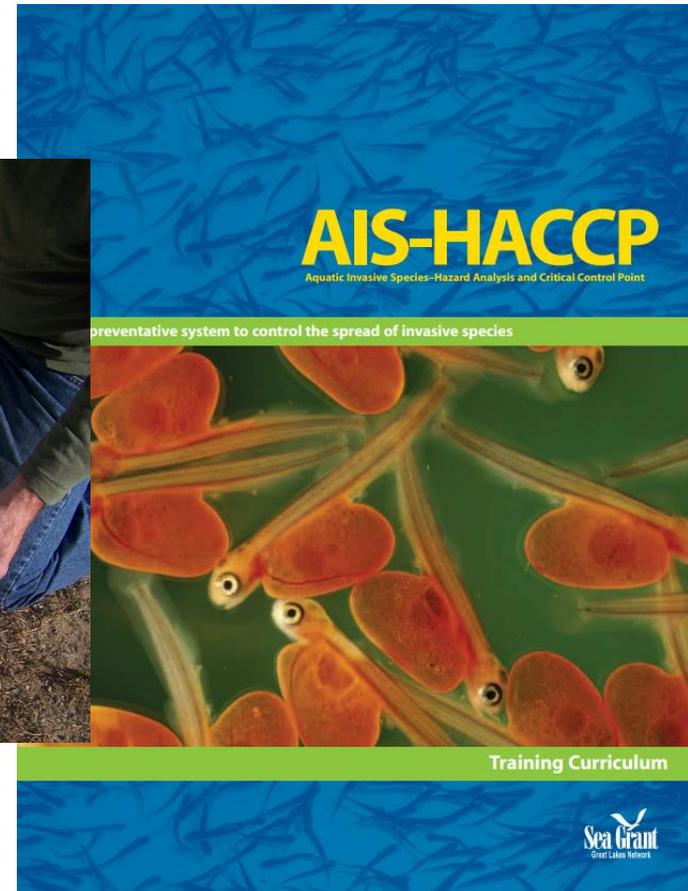
# Increase inspection and enforcement

- Coordinated, regular inspection
- Certification programs
  - Incentive for businesses
  - Training: Species ID, labeling, stopping hitchhikers



# Promote industry self-management

- HACCP framework for risk management within industry



# Risk assessment

- Risk assessments are essential
- Must be ongoing
  - New species
  - Climate change



The screenshot shows a web browser window with the URL [fws.gov/fisheries/ANS/species\\_erss.html](https://fws.gov/fisheries/ANS/species_erss.html). The page header features the U.S. Fish & Wildlife Service logo and the text "U.S. Fish & Wildlife Service" and "Fish and Aquatic Conservation". Below the header is a search bar and social media icons for Outreach Tools, Facebook, Twitter, and YouTube. The main navigation menu includes links for Home, About Us, National Fish Hatchery System, Species & Habitat Conservation, Invasive Species, Recreation & Education, In The News, and You Can Help. The breadcrumb trail reads: "You Are Here: [Fisheries Home](#) » [Aquatic Invasive Species](#) » [Invasive Species Prevention](#) » [Ecological Risk Screening Summaries](#)". The main heading is "Ecological Risk Screening Summaries (ERSS)". The text explains that the 2008 to 2012 National Invasive Species Management Plan called for the development of risk screening processes to evaluate the invasiveness of terrestrial and aquatic nonnative wildlife moving in trade. The Service developed ecological risk screening in response to this charge and has conducted an initial scan of tens of thousands of species, including 33,500 fish species from Fishbase alone. Based on evidence and expert opinion, the Service utilized history of invasion and anticipated harm to select approximately 1,725 species from the initial scan for further risk assessment through Ecological Risk Screening Summaries (ERSSs). Species posing broad risks to the United States were prioritized over species with expected localized or regional impacts. The Service developed the ERSSs efficiently by using international databases, scientific literature, and a climate model. The climate model matches the basic climate requirements (temperature and precipitation) of a species in its native and known invasive ranges with similar climates in the United States to assess risk of establishment. The process is the same for species native to part of the United States, but also established in other parts of the United States outside their native range. The result provides an approximate geographic range in the United States where the climate is similar to where the species survives elsewhere; this is referred to as the species' "climate match." The Service has developed and peer reviewed a climate-matching program called the Risk Assessment Mapping Program or RAMP3 to conduct these climate matches. We also obtain information on where the species has spread to other parts of the world outside of its native range and if it has established and caused harm there. We obtain information on what harm the species causes outside of its native range, such as the ability to outcompete native animals for food and rearing habitat, impacts to water quality, or the ability to spread pathogens that cause disease. We call this the species' "history of invasiveness."



## Pathway-specific opportunity areas

# Documented species synthesis table

Trade pathway	Prohibited species, and species for which prohibited status is being pursued	Likely invasive species
Food trade	14	5
Pet trade	12	15
Ornamental horticulture	11	20
Biological supply	7	4
Bait trade	1	1

# Ornamental horticulture trade

- Collaborate with state agriculture department's nursery certification program
- Outreach to new partners and sellers in bordering states



# Pet and aquarium trade

- Support and host more surrender events
- Mini-project: Pets as prizes



11/25/2019



**Habitattitude**™

PROTECT OUR ENVIRONMENT  
DO NOT RELEASE FISH AND AQUATIC PLANTS

PIJAC • U.S. FISH & WILDLIFE SERVICE • NOAA'S SEA GRANT

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

# Food trade

- Collaborate with state and local food licensing and inspection programs
- Crayfish



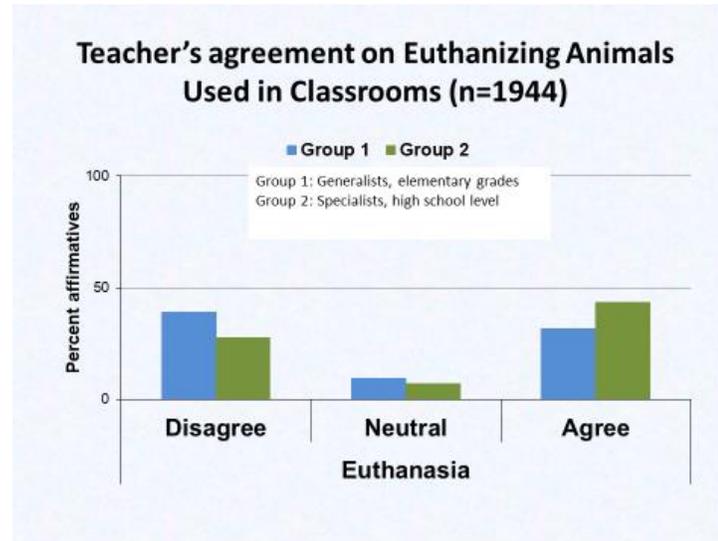
# Bait trade

- Support positive social norms re: disposal



# Biological supply trade

- Collaborate with curriculum developers
- Outreach to schools and educators associations
- Investigate alternatives to euthanasia



**Adopting a Classroom Animal**

## Pledge Form

**DON'T LET IT LOOSE!**

By adopting this classroom animal, I hereby pledge to:

1. Never release or allow this animal to escape into the environment;  
(Releasing an animal can be harmful to both the animal and the environment. It may be illegal to release animals and plants in your state.\*)
2. Provide and properly care for the animal's essential needs (see animal care sheet on back);
3. Share this pledge with anyone wishing to adopt this or another animal.

Date: \_\_\_\_\_

Species being adopted: \_\_\_\_\_

Student (print name): \_\_\_\_\_

Student Signature: \_\_\_\_\_

Parent/Guardian (print name): \_\_\_\_\_

Parent/Guardian Signature: \_\_\_\_\_

Teacher (print name): \_\_\_\_\_

Teacher Signature: \_\_\_\_\_

\*Please check with your state wildlife agency/local natural resource agency or visit [www.ilseagrant.org/speciesregs](http://www.ilseagrant.org/speciesregs) regarding the regulation for your state.



## Next steps

# Major opportunity areas

- Cross-pathway

- Develop relationships with industry
- Develop and distribute educational materials
- Conduct surveillance of online sales
- Increase inspection and enforcement
- Promote HACCP
- Continue conducting species risk assessments

- Pathway-specific

- Collaborate with MDA's nursery certification program
- Collaborate with food licensing and inspection programs
- Support and host more surrender events
- Investigate alternatives to euthanasia
- Collaborate with curriculum developers
- Support positive social norms regarding bait disposal

# Thank You!

**Chelsey Blanke**

*chelsey.blanke@state.mn.us*

651-259-5350

This work was supported by the Great Lakes Restoration Initiative administered by the U.S. Fish and Wildlife Service.



500 Lafayette Road  
St. Paul, MN 55155-4040  
888-646-6367 or 651-296-6157  
mndnr.gov

The Minnesota DNR prohibits discrimination in its programs and services based on race, color, creed, religion, national origin, sex, public assistance status, age, sexual orientation or disability. Persons with disabilities may request reasonable modifications to access or participate in DNR programs and services by contacting the DNR ADA Title II Coordinator at [info.dnr@state.mn.us](mailto:info.dnr@state.mn.us) or 651-296-6157.

Discrimination inquiries should be sent to Minnesota DNR, 500 Lafayette Road, St. Paul, MN 55155-4049; or Office of Civil Rights, U.S. Department of the Interior, 1849 C. Street NW, Washington, D.C. 20240.

©2017, State of Minnesota, Department of Natural Resources