Building Consensus to Identify and Address Priority Aquatic Invasive Species and Vectors in the Great Lakes

Project Methodology

Phase 1
In 2019, the National Sea Grant Law Center (NSGLC) received funding from the Great Lakes Fishery Commission (GLFC) to assess variability in the regulated species lists of the Great Lakes states and provinces and identify priority actions to address identified gaps and vectors of concern. The NSGLC reviewed and updated information in a spreadsheet maintained by the Great Lakes Panel on Aquatic Nuisance Species, the Great Lakes Commission, and the GLFC Law Enforcement Committee on restricted activities for aquatic invasive species (AIS) in the Great Lakes region. Several questions arose during the initial review that can only be answered by officials in the respective states. Those questions and the associated assumptions the NSGLC made to complete its analysis discussed below were in a “notes” document included with the updated spreadsheet.

Following the review, the NSGLC focused on 21 AIS either listed as “injurious wildlife” under the Lacey Act (18 U.S.C. 42) or designated as “least wanted” AIS by the Great Lakes and St. Lawrence Governors and Premiers. The NSGLC created one-page summaries for each of the 21 species. The summaries provide snapshots of classifications and restrictions for each species across the ten Great Lakes states and provinces: Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania, New York, Quebec, and Ontario. Each summary includes two maps and one table. The first map represents the classification of the species in the state as either “prohibited,” “restricted,” or “not listed.” The classification map, however, does not tell the entire story. For example, the classification map for Bighead carp shows that the species is prohibited in all ten jurisdictions; but, some of the jurisdictions are silent on whether specific activities identified as AIS spread risks, such as propagation, lease and loan, or transfer are prohibited. A second map seeks to illustrate whether all, some, or none of the priority activities of concern are regulated in each jurisdiction. A table below the maps identifies the specific activity restrictions for each species in the states and provinces.

These summaries are intended to provide quick baseline information to start conversations about current regulatory approaches and to help set priorities for states and provinces addressing AIS. The majority of the research was performed in October 2019 with minor updates in November 2020 to reflect new regulations.

Phase 2
During Phase 2 of the project, the NSGLC performed an analysis of the AIS laws in each Great Lakes state and province by key pathways identified by GLFC. These key pathways were pet stores, live food markets, nurseries, biological supply houses, aquaculture, and bait. The research findings were summarized in a spreadsheet. In performing the research, the NSGLC used search terms for the specific pathways, including pet store, aquarium, live food market, nurseries, biological supply houses, aquaculture, and bait. The NSGLC also used terms related to AIS, including aquatic invasive species, nonnative, injurious, nonindigenous, and aquatic nuisance species.

In general, the NSGLC found very few laws directly regulating the pathways, with the exception of the aquaculture and live bait pathways. Michigan, for instance, has a licensing law for pet stores, but no state had a law or regulation that regulated biological supply houses. Due to the lack of specific pathway regulation, the NSGLC identified “catch-all” AIS provisions which prohibited the sale of non-native species. These regulations would apply to any sale regardless of the pathway in which the sale was taking place. Many of these “catch-all” provisions, however, only apply to listed species, which raises significant enforcement challenges. Effective enforcement requires the ability to properly identify species as the sale is not prohibited if the species is non-native but not listed.

Assumptions

As noted in the above, in Phase 1 the NSGLC prepared a notes document to accompany the updated GLFC spreadsheet. This document identified any assumptions made in interpreting regulations and included questions for state AIS managers and enforcement officers. For example, in one state it is unclear whether a prohibition on import is implied by other prohibitions on possession, sale, or other activities. In another state, the NSGLC interpreted the prohibitions on holding and display to be the equivalent of a prohibition on “possession.” If GLFC has not yet done so, the GLFC should review the notes document prepared for Phase 1 with AIS managers and enforcement officers to gather their thoughts and input on those issues.

Takeaways

Throughout the project, the NSGLC found that there are variabilities among the Great Lakes states and provinces regarding the listing of priority species. Classifications and restrictions for each priority species vary. For example, a species may be designated as “prohibited,” but that may not mean that all high-risk activities are prohibited within the state or province. The lack of consistency across states and provinces complicates enforcement.
There is also a lack of specific pathway regulation. Catch-all provisions only apply to listed species, which results in legal gaps that may make it difficult to restrict the entry of priority non-native species. These results highlight the ongoing debate between a white list and black list approach, versus specific pathways. States may want to revisit the differences in policy approaches in light of the findings to see if a change would be preferable. For instance, a white list approach in which only approved species could be imported could make it easier to enforce rules for some pathways. Conversely, direct regulation of a pathway could be preferable for certain pathways based on lessons learned from aquaculture and bait.

**Recommendations**

Great Lakes states and provinces should continue to focus on harmonization of state species laws for priority species to ensure consistent regulation of high-risk activities.

Great Lakes states and provinces should conduct pathway-specific policy analysis to determine options to reduce risks from those pathways. They should consider whether approaches taken to address aquaculture and bait are feasible for other pathways.
A SNAPSHOT OF CLASSIFICATION AND RESTRICTIONS FOR 21 GREAT LAKES AIS

STEFANIE OTTS
DIRECTOR

TERRA BOWLING
SENIOR RESEARCH COUNSEL
Executive Summary

In 2019, the National Sea Grant Law Center (NSGLC) partnered with the Great Lakes Panel on Aquatic Nuisance Species, the Great Lakes Commission, the Great Lakes Law Enforcement Committee, and the Great Lakes Fishery Commission to assess variability in Great Lakes state and province regulated species lists and identify priority actions to address identified gaps and vectors of concern. The NSGLC reviewed and updated information maintained by the organizations on restricted activities for AIS in the Great Lakes region. Following the review, the NSGLC focused on 21 Aquatic Invasive Species (AIS) either listed as “injurious wildlife” under the Lacey Act (18 U.S.C. 42) or designated as “least wanted” AIS by the Great Lakes and St. Lawrence Governors and Premiers. The NSGLC created the following one-page summaries for each of the 21 species.

The summaries provide snapshots of classifications and restrictions for each species across ten Great Lakes states and provinces: Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania, New York, Quebec, and Ontario. Each summary includes two maps and one table. The first map represents the classification of the species in the state as either “prohibited,” “restricted,” or “not listed.” Yet, the classification map does not tell the entire story. For example, the classification map for Bighead carp shows that the species is prohibited in all ten jurisdictions; however, some of the jurisdictions are silent on specific activities identified as AIS spread risks, such as propagation, lease and loan, or transfer. A second map seeks to illustrate whether all, some, or none of the activities of concern are regulated in each jurisdiction. A table below the maps identifies the specific activity restrictions for each species in the states and provinces.

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Comparative Analysis of “Least Wanted” AIS in the Great Lakes

Bighead Carp

Hypophthalmichthys nobilis

Classification

Activities Prohibited

Prohibited = Red
Restricted = Yellow
Not Listed = Green

“Prohibited” means different things in different jurisdictions. While possession, sale, and release is expressly illegal in all states where bighead carp is listed as prohibited, jurisdictions may be silent on other activities such as transport, purchase, or import.

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Last updated October 2019
Comparative Analysis of “Least Wanted” AIS in the Great Lakes

Silver carp

Hypophthalmichthys molitrix

“Prohibited” means different things in different jurisdictions. While possession, sale, and release is expressly illegal in all states where parrot feather is listed as prohibited, jurisdictions may be silent on other activities such as transport, purchase, or import.

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Last updated October 2019
Grass carp
*Ctenopharyngodon idella*

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**Comparative Analysis of “Least Wanted” AIS in the Great Lakes**

**Black carp**

*Mylopharyngodon piceus*

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Northern Snakehead

*Channa argus*

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Stone Moroko

Pseudorasbora parva

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Wels Catfish
Silurus glanis

Comparative Analysis of “Least Wanted” AIS in the Great Lakes

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Comparative Analysis of “Least Wanted” AIS in the Great Lakes

Tench

*Tinca tinca*

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Last updated October 2019
Comparative Analysis of “Least Wanted” AIS in the Great Lakes

Killer Shrimp

Dikerogammarus villosus

**Classification**

- **Prohibited**
- **Restricted**
- **Not Listed**

**Activities Prohibited**

- **All 10**
- **Some**
- **None**

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Comparative Analysis of “Least Wanted” AIS in the Great Lakes

Yabby
Cherax destructor

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Last updated October 2019
Comparative Analysis of “Least Wanted” AIS in the Great Lakes

Golden Mussel

*Sander lucioperca*

**Activities Prohibited**

- **Prohibited**
- **Restricted**
- **Not Listed**
- **All 10**
- **Some**
- **None**

“Prohibited” means different things in different jurisdictions. While possession, sale, and release is expressly illegal in all states where killer shrimp is listed as prohibited, jurisdictions may be silent on other activities such as transport, purchase, or import.

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Last updated October 2019
Comparative Analysis of “Least Wanted” AIS in the Great Lakes

Marmorkreb (Marbled Crayfish)

Procamburus fallax forma virginalis

“Prohibited” means different things in different jurisdictions. While possession, sale, and release is expressly illegal in all states where marmorkreb is listed as prohibited, jurisdictions may be silent on other activities such as transport, purchase, or import.

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Last updated October 2019
Comparative Analysis of “Least Wanted” AIS in the Great Lakes

New Zealand Mud Snail
Potamopyrgus Antipodarum

Classification

Activities Prohibited

= Prohibited
= Restricted
= Not Listed

= All 10
= Some
= None

“Prohibited” means different things in different jurisdictions. While possession, sale, and release is expressly illegal in all states where the species is listed as prohibited, jurisdictions may be silent on other activities such as transport, purchase, or import.

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Last updated October 2019
“Prohibited” means different things in different jurisdictions. While possession, sale, and release is expressly illegal in all states where hydrilla is listed as prohibited, jurisdictions may be silent on other activities such as transport, purchase, or import.

![Classification and Activities Prohibited maps](image)

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Last updated October 2019
Comparative Analysis of “Least Wanted” AIS in the Great Lakes

Brazilian elodea
Egeria densa

Classification

Activities Prohibited

= Prohibited

= Restricted

= Not Listed

= All 10

= Some

= None

“Prohibited” means different things in different jurisdictions. While possession, sale, and release is expressly illegal in all states where Brazilian elodea is listed as prohibited, jurisdictions may be silent on other activities such as transport, purchase, or import.

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</table>

Last updated October 2019
Comparative Analysis of “Least Wanted” AIS in the Great Lakes

**Water Soldier**

*Stratiotes aloides*

---

**Classification**

- **Prohibited**
- **Restricted**
- **Not Listed**

**Activities Prohibited**

- **All 10**
- **Some**
- **None**

“Prohibited” means different things in different jurisdictions. While possession, sale, and release is expressly illegal in all states where water soldier is listed as prohibited, jurisdictions may be silent on other activities such as transport, purchase, or import.

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</table>

Last updated October 2019
Comparative Analysis of “Least Wanted” AIS in the Great Lakes

European water chestnut

*Trapa natans*

**Classification**

**Activities Prohibited**

“Prohibited” means different things in different jurisdictions. While possession, sale, and release is expressly illegal in all states where European water chestnut is listed as prohibited, jurisdictions may be silent on other activities such as transport, purchase, or import.

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| 8 | 6 | 5 | 5 | 6 | 5 | 6 | 7 | 5 | 2 |

Last updated October 2019

Sea Grant Law Center
Comparative Analysis of “Least Wanted” AIS in the Great Lakes

Parrot feather
Myriophyllum aquaticum

**Classification**

- **Red** = Prohibited
- **Orange** = Restricted
- **Green** = Not Listed

**Activities Prohibited**

- **Red** = All 10
- **Yellow** = Some
- **Green** = None

“Prohibited” means different things in different jurisdictions. While possession, sale, and release is expressly illegal in all states where parrot feather is listed as prohibited, jurisdictions may be silent on other activities such as transport, purchase, or import.

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Last updated October 2019
**Comparative Analysis of “Least Wanted” AIS in the Great Lakes**

**European frogbit**

*Hydrocharis morsus-ranae*

---

**Classification**

- **Red** = Prohibited
- **Orange** = Restricted
- **Green** = Not Listed

---

**Activities Prohibited**

- **Red** = All 10
- **Orange** = Some
- **Yellow** = None

“Prohibited” means different things in different jurisdictions. While possession, sale, and release is expressly illegal in all states where European frogbit is listed as prohibited, jurisdictions may be silent on other activities such as transport, purchase, or import.

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Last updated October 2019
Comparative Analysis of “Least Wanted” AIS in the Great Lakes

Yellow floating heart

*Nymphoides peltata*

**Classification**

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**Activities Prohibited**

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Last updated October 2019
**Illinois**

No general prohibition on importation of nonnative species.

All live fish require permit with disease certification to be imported from outside of the state, except carp or goldfish; topminnows or golden shiner, unless approved for the purpose of aquaculture, bait, or introducing into the waters of the state. (Wis. Stat. Ann. § 955.75). State law requires commercial facilities importing or holding species of aquatic life for aquaculture, bait, or introducing into the waters of the state, to secure a permit. (Wis. Stat. Ann. § 955.75). State law requires a license or permit for transport for release into public waters of the state. (Wis. Stat. Ann. § 955.75). State regulations prohibit import of fish, viable eggs, or other aquatic species. (Wis. Stat. Ann. § 955.75). No specific pathway regulation found. Provisions in Columns B & C would apply.

**Indiana**

No general prohibition on importation of nonnative species.


**Michigan**

No general prohibition on importation of nonnative species.

State law prohibits the sale, barter, trade or offer for sale any fish, except carp or goldfish; topminnows or golden shiner, unless approved for the purpose of aquaculture, bait, or introducing into the waters of the state. (Mich. Stat. Ann. § 286.871 et seq.). State law prohibits the sale or offer for sale live prohibited or injurious species imported into the state. (Mich. Stat. Ann. § 286.871 et seq.). No specific pathway regulation found. Provisions in Columns B & C would apply.

**New York**

No general prohibition on importation of nonnative species.


**Ohio**

No general prohibition on importation of nonnative species.

State law prohibits the sale, barter, trade or offer for sale any fish, except carp or goldfish; topminnows or golden shiner, unless approved for the purpose of aquaculture, bait, or introducing into the waters of the state. (Ohio Rev. Code Ann. §§ 1551.02, 1551.05). State regulations prohibit import of fish, viable eggs, or other aquatic species except carp or goldfish; topminnows or golden shiner, unless approved for the purpose of aquaculture, bait, or introducing into the waters of the state. (Ohio Rev. Code Ann. §§ 1551.02, 1551.05). No specific pathway regulation found. Provisions in Columns B & C would apply.
Quebec

The “regulation respecting aquaculture and the sale of fish” prohibits the sale of any species of live fish except for saltwater species and species from commercial aquaculture license holders and commercial or communal fishing license holders. (C-61.1, r. 7 s. 33) http://legisquebec.gouv.qc.ca/en/document/cr/C-61.1,%20r.%207

Under Canada’s federal Aquatic Invasive Species Act, it is illegal to introduce an aquatic species into a body of water where it is not native, unless authorized under federal, provincial, or territorial law.

The “regulation respecting aquaculture and the sale of fish” applies to the purchase, sale and importation of any species of fish, whether live or dead, including hobby fish that are of a native or naturalized species and the fish listed in Schedule IV. (nonindigenous sturgeon, blueback herring, nonindigenous eels, snakeheads, yabby, grass carp, chinese mitten crab, ruffe, largescal silver carp, silver carp, black carp, bighead carp, round goby, rusty crayfish, eurasian perch, tubenose goby, stone moroko, zander, rudd, sheatfish, tench.)

Goldfish (Carassius) are hobby fish that are not of a naturalized species. (C-61.1, r. 7 s. 2)

Sale of

No specific pathway regulation found. Provisions in Columns B & C would apply.

Aquaculture regulations prohibit aquarium fish-keeping, production, keeping in captivity, breeding, stocking, transport, sale and purchase of live fish listed in Schedule IV: nonindigenous sturgeon, blueback herring, nonindigenous eels, snakeheads, yabby, grass carp, chinese mitten crab, ruffe, largescal silver carp, silver carp, black carp, bighead carp, round goby, rusty crayfish, eurasian perch, tubenose goby, stone moroko, zander, rudd, sheatfish, tench.

No person may import, from outside the province, live fish referred to in the Fish Health Protection Regulations (C.R.C., c. 812) unless they are certified free of disease in accordance with the procedure established under those Regulations.

No one may import, from outside the province, live fish other than those referred to in the Fish Health Protection Regulations, except where the shipper gives a sanitary report demonstrating, to the Minister’s satisfaction, that the fish do not have the diseases listed in schedules 2 and 4 to those Regulations. (C-61.1, r. 7)

The importation of live or dead baitfish from outside Quebec is prohibited. http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/C-61.1,%20r.%207

Subject to subsections (2) and (3), no person may use for bait or have in the person’s possession for use as bait any fish.

(2) A person may possess, in places where it is authorized, live or dead fish for use as bait during a specified period.

(3) No person shall fish using for bait a species of fish listed in Schedule 4.