

GLDIATR: Protecting the Great Lakes from Internet Trade of AIS

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Internet as an AIS Pathway

What We Know...

- Organisms in trade
 - Intentional and unintentional releases of live organisms that are bought and sold for use in aquariums, nurseries, water gardens, classrooms, aquaculture, as live bait, etc.
- Internet facilitates trade
- WWW is vast and changing
- Species of concern to Great Lakes region are being sold



Internet as an AIS Pathway

What We Don't (Didn't) Know...

- Who...
 - Is selling species we're concerned about?
- What...
 - Species are available for sale?
- Where...
 - Websites
 - Physical location
- How...
 - Many?
 - Are regulations/potential invasiveness communicated?



Objectives

- Develop and demonstrate software to assess the availability of invasive species via Internet sales
- Provide information and management tools
- Present information on the Internet marketplace, including risks and options for management

Funding: FY12 Great Lakes Restoration Initiative EPA grant



PROJECT COMPONENTS



Pathway Assessment

- Develop a list of species of concern
 - 166 species of concern
 - Regulations (U.S., Canada, state, province)
 - Watch lists for GL
 - Risk assessments
 - Stakeholder survey
- Develop web monitoring system to identify available species and suppliers
 - RightBrain Networks
- Analyze and summarize results



Inform Management

- Share the results
- Develop recommendations for future management
- Distribute the web monitoring system
- Operation and maintenance*

*pending availability of funding

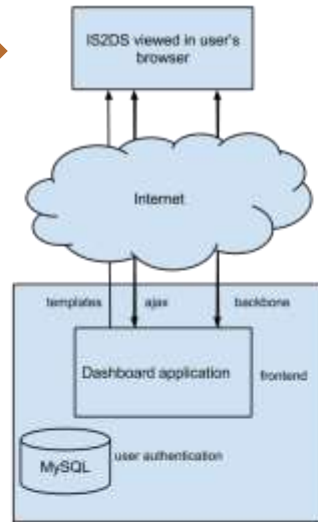


Conduct Outreach

- Conduct a survey of potential users
- Provide periodic project updates and opportunities for input
 - Webinars, presentations, workshops
- Inform suppliers of potential risks, regulations and best practices

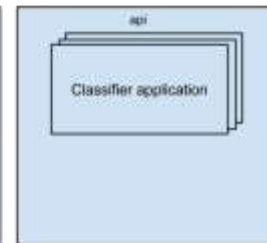
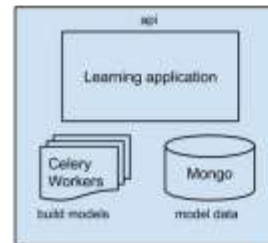
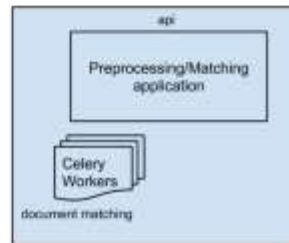
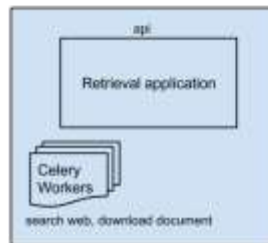
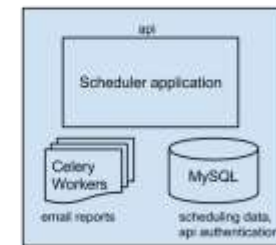
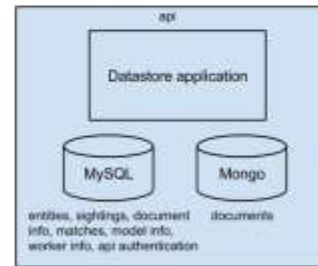
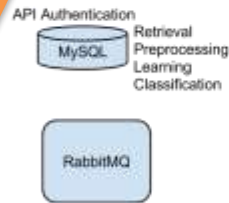
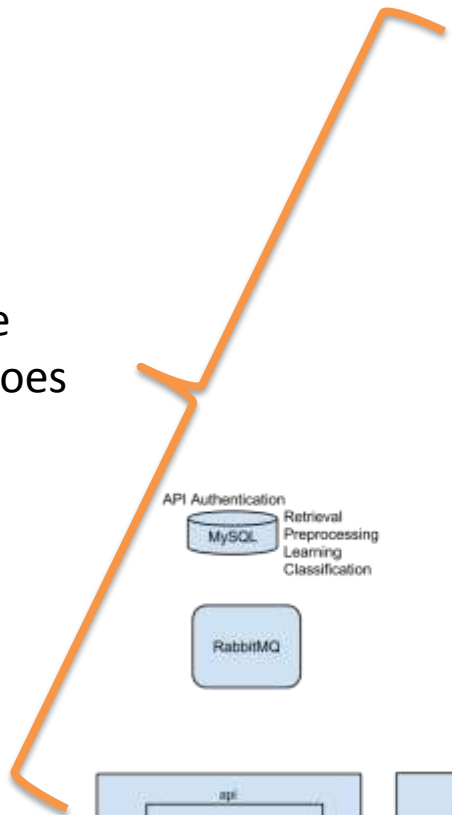


What the user sees →



GLDIATR
Great Lakes Detector of
Invasive Aquatics in Trade

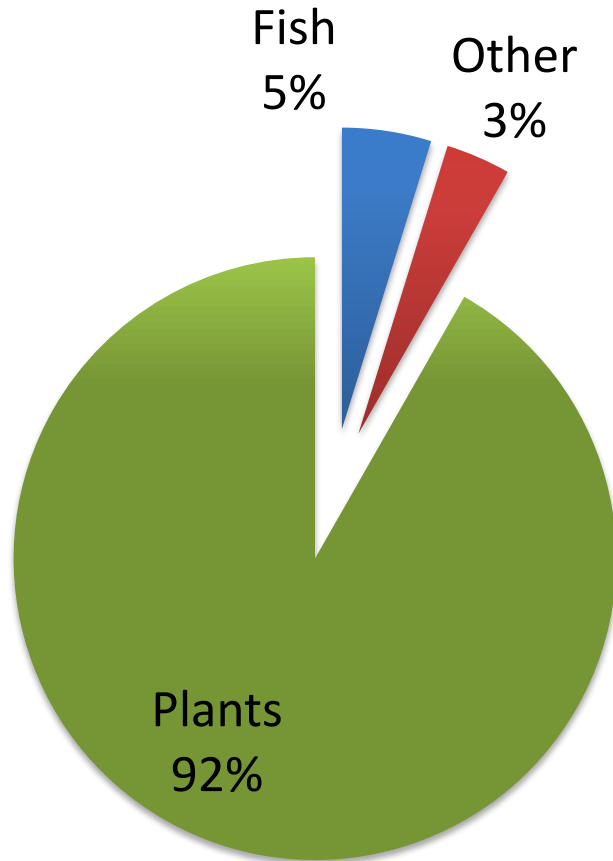
What the system does



FINDINGS



Species Results



No. of species found	58 (of 166)
Plants	40
Fishes	11
Other	7
Regulated	49
Non-regulated	9

**Percentage sale pages by group
(Total number of sale pages = 514)**



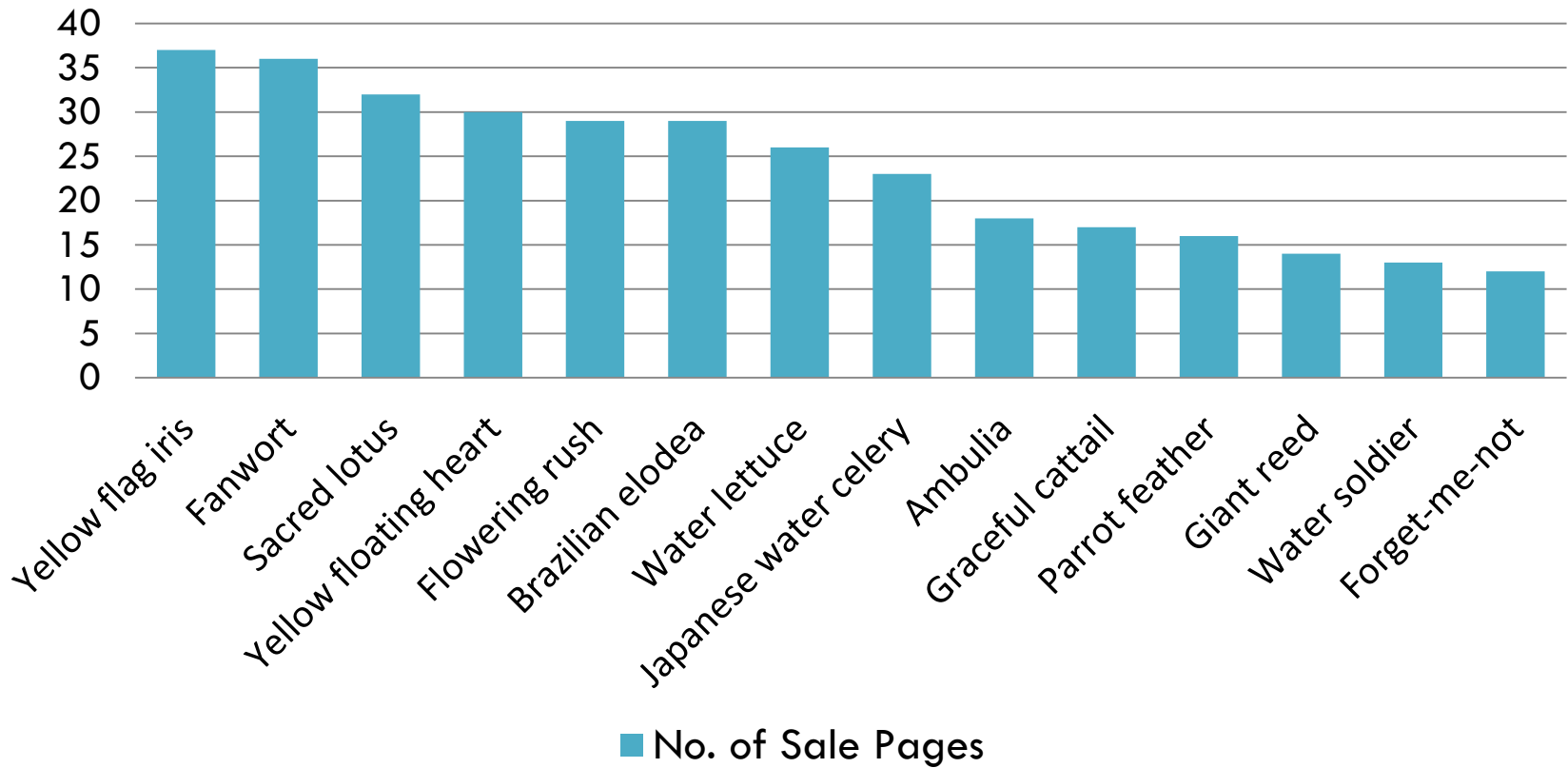
Species Results

Great Lakes Governors/Premiers “Least Wanted” AIS	Number of sale pages
Brazilian elodea (<i>Egeria densa</i>)	29
Parrot feather (<i>Myriophyllum aquaticum</i>)	16
Water soldier (<i>Stratiotes aloides</i>)	13
Water chestnut (<i>Trapa natans</i>)	5
Hydrilla (<i>Hydrilla verticillata</i>)	4
Yabby (<i>Cherax destructor</i>)	3
Grass carp (<i>Ctenopharyngodon idella</i>)	1



Species Results

Top 15 Species



Website Results

- 209 total (unique) websites
 - 133 will ship to the Great Lakes region*
 - 62% located in U.S.

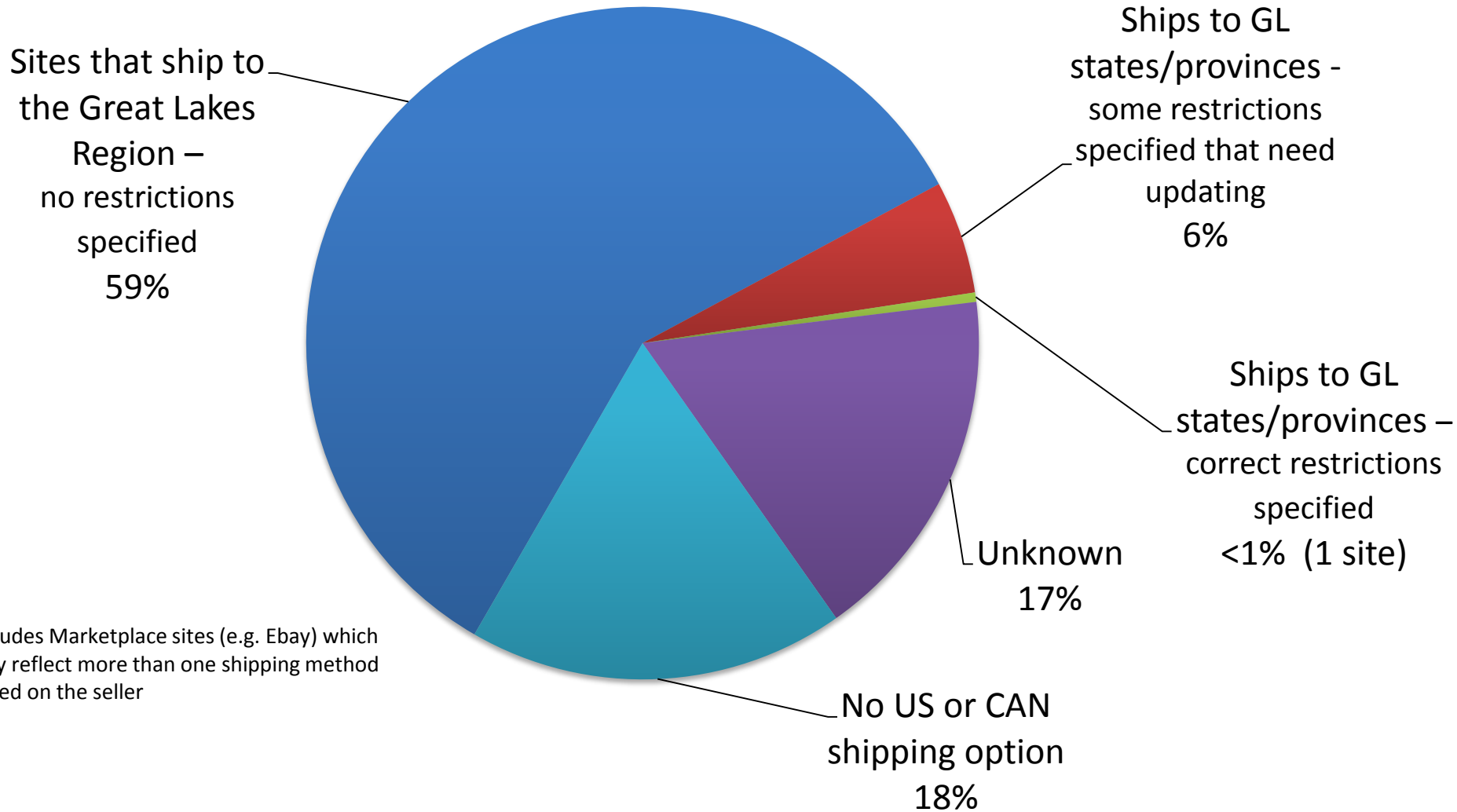
* Does not include sites for which shipping restrictions could not be determined

Top websites selling to the Great Lakes (most sale pages)

http://www.ebay.com/	24
http://www.amazon.com/	11
http://www.liveaquaria.com/	10
http://www.pondmegastore.com/	9
http://www.aquariumplants.com/	9
http://www.primrose.co.uk/	8
http://www.thegreenmachineonline.com/	7
http://www.waterfordgardens.com/	7
http://www.pondsplantsandmore.com/	6



Shipping Specifications by Website



Sites that ship to the Great Lakes Region – no restrictions specified
59%

Ships to GL states/provinces - some restrictions specified that need updating
6%

Ships to GL states/provinces – correct restrictions specified
<1% (1 site)

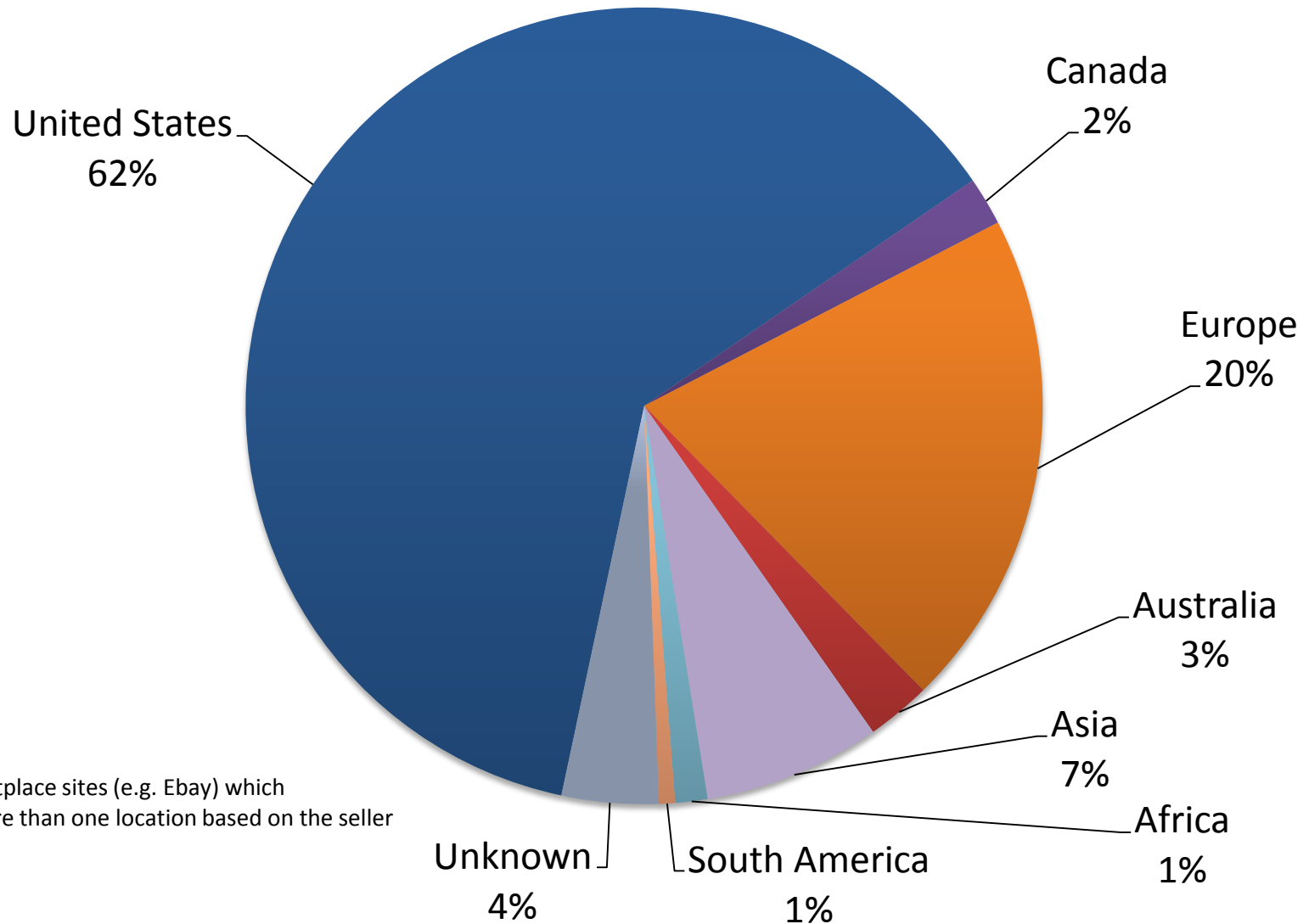
Unknown
17%

No US or CAN shipping option
18%

Includes Marketplace sites (e.g. Ebay) which may reflect more than one shipping method based on the seller



Website distribution around the world



Includes Marketplace sites (e.g. Ebay) which may reflect more than one location based on the seller



Seller Outreach

- Contacted 169 sellers via email (119), contact form (48), and letter (2)
 - sent July 2015
 - 11 non-automated responses (to date)



Protecting the Great Lakes from the Internet Trade of Aquatic Invasive Species

How you can help

- ❖ **Replace** species in your inventory that are considered invasive to the Great Lakes with non-invasive alternatives.
- ❖ **Learn** about species regulations for Great Lakes states and provinces. *Remember, it is illegal to possess or sell some species!*
- ❖ **Inform** customers of species with invasive attributes and provide information on alternative and non-invasive species, species regulations and associated shipping restrictions, and proper disposal methods for unwanted organisms.
- ❖ **Clean and inspect** animals, plants, and packing materials prior to shipping to ensure that unwanted “hitchhiking” viruses, plants, or animals are removed.
- ❖ **Join** an invasive species awareness campaign, such as *Habitattitude™*, and help educate customers.

See <http://bit.ly/1JRHOBC> for more information on these activities.



Jurisdiction	Invasive Species Regulation Information	Contact Information
Illinois	Illinois Injurious Species List and Regulations www.dnr.illinois.gov/adrules/documents/17-805.pdf Aquaculture Contacts & Regulations, Fish Importation Regulations & Approved Aquatic Species List www.ifishillinois.org/programs/aquaculture.html	Kevin Irons, Illinois DNR, Manager, Aquaculture and Aquatic Nuisance Species Program, kevin.iron@illinois.gov
Indiana	AIS Illegal Possession Rules www.in.gov/dnr/fishwild/files/fw-AIS_PossessionRules.pdf Indiana Aquatic Invasive Species Information www.in.gov/dnr/fishwild/3628.htm	Eric Fischer, Indiana DNR, Aquatic Invasive Species Coordinator, efischer@dnr.in.gov
Michigan	Michigan Invasive Species Laws www.michigan.gov/dnr/0,4570,7-153-10370_59996-270798--,00.html	<i>Plants and insects:</i> Mike Bryan, Michigan DARD - Pesticide & Plant Pest Management Division, bryanm@michigan.gov <i>All other species:</i> Seth Herbst, Michigan DNR - Fisheries Division, herbstS1@michigan.gov
Minnesota	Minnesota Invasive Species Laws www.dnr.state.mn.us/invasives/laws.html	Kelly Pennington, Minnesota DNR, AIS Prevention Coordinator, Kelly.pennington@state.mn.us
New York	New York Invasive Species Regulations www.dec.ny.gov/animals/99141.html	518-402-9405, isinfo@dec.ny.gov
Ohio	Ohio Administrative Code: Chapter 1501:31-19 Wild Animal Regulations codes.ohio.gov/oac/1501%3A31-19	Ohio Division of Wildlife, 1-800-WILDLIFE(945-3543), wildinfo@dnr.state.oh.us
Ontario	How Ontario Combats Invasive Species www.ontario.ca/environment-and-energy/how-government-combats-invasive-species Ontario Fishery Regulations laws-lois.justice.gc.ca/eng/regulations/SOR-2007-237	Natural Resources Information Centre, 1-800-667-1940, mnr.nric.mnr@ontario.ca
Pennsylvania	Aquatic Invasive Species www.fishandboat.com/ais.htm Pennsylvania Noxious Weed List www.pacode.com/secure/data/007/chapter110/chap110toc.html Pennsylvania Code, Title 58 (See Chapters 63, 71, 73, 137) www.pacode.com/secure/data/058/058toc.html	Jim Grazio, Pennsylvania DEP, jagrazio@state.pa.us
Quebec	Regulation respecting aquaculture and the sale of fish www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=3&file=/C_61_1/C61_1R7_A.HTM	<i>Aquatic invasive animal species:</i> Ministère des Forêts, de la Faune et des Parcs, 1-877-346-6763, services.clientele@mffp.gouv.qc.ca <i>Aquatic invasive plant species:</i> Ministère du Développement durable, de l'Environnement et de la Lutte aux changements climatiques, 1-800-561-1616, info@mddelcc.gouv.qc.ca
Wisconsin	Wisconsin Invasive Species Rule (NR 40) dnr.wi.gov/topic/Invasives/classification.html	Dreux Watermolen, Wisconsin DNR, Science Information Services Section Chief, Dreux.Watermolen@wisconsin.gov
United States	Noxious Weed List: 7 U.S.C. 2801 et seq plants.usda.gov/java/noxious Lacey Act Injurious Wildlife: 50 C.F.R. §16.1 et seq www.fws.gov/injuriouswildlife	
Canada	Aquatic Invasive Species Regulations (SOR/2015-121) laws.justice.gc.ca/eng/regulations/SOR-2015-121/index.html	



SUMMARY AND NEXT STEPS



Observations

- Internet trade is a problem pathway; getting hits on species that are a threat
 - Seems consistent w/ what is known about species common to trade pathway (e.g., popular water garden and aquarium plants)
 - Both domestic and international sources
- Finding species that are actively managed
- Good warning tool; useful as an indicator of what is in trade, inc. emerging species of concern
- GLDIATR is faster and more efficient than humans



Next Steps

- Continue to develop findings
- GLDIATR “roll-out”
- Complete final report, inc. recommendations for future work

- Ongoing O&M at GLC (as resources allow)
- “GLDIATR 2.0”: Potential updates and enhancements
- Using GLDIATR for prevention and management
- Ideas for future Internet trade pathway efforts



Acknowledgments

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