



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

**Joint Meeting of the
Great Lakes & Mississippi River Basin
Aquatic Nuisance Species Panels**
April 14-15, 2015 | Madison, Wisconsin



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?



Project 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



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PROGRESS TO DATE



Pathway Assessment

- Develop a list of species of concern... COMPLETE
 - 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.... COMPLETE*
 - Hired RightBrain Networks
- Analyze and summarize results... IN PROGRESS





Inform Management

- Share the results... IN PROGRESS
- Develop recommendations for future management... BEGINNING TODAY
- Distribute the web monitoring system... NEAR FUTURE
- Operation and maintenance... ONGOING*

*pending availability of funding



Conduct Outreach

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

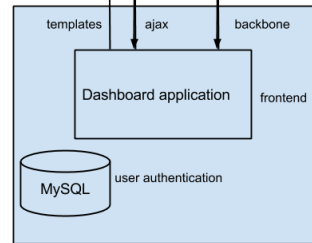


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What the user sees

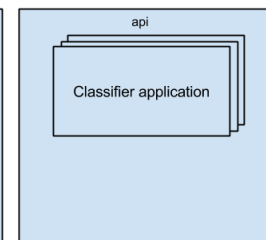
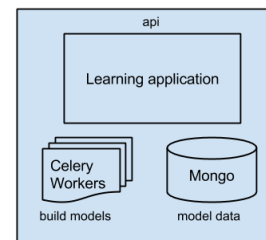
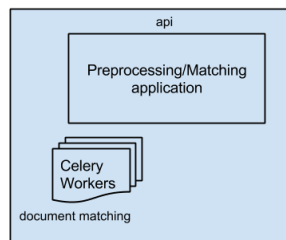
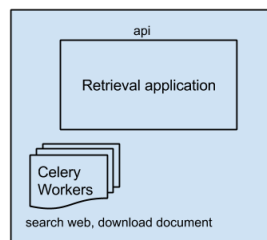
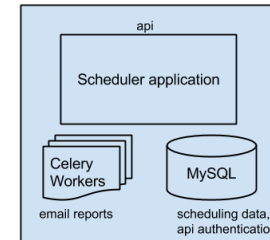
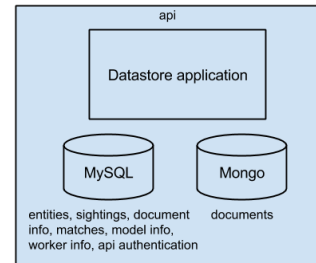
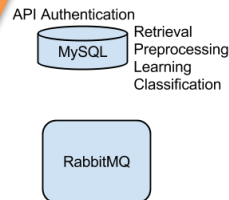
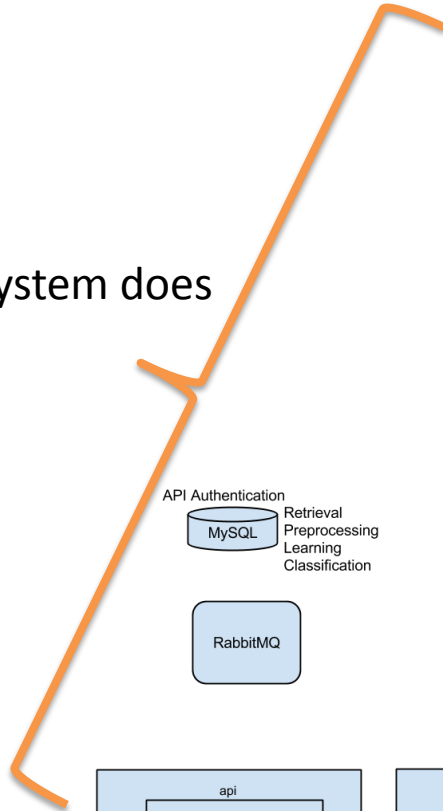


IS2DS viewed in user's browser



Great Lakes Detector of Invasive Aquatics in Trade (GLDIATR)

What the system does





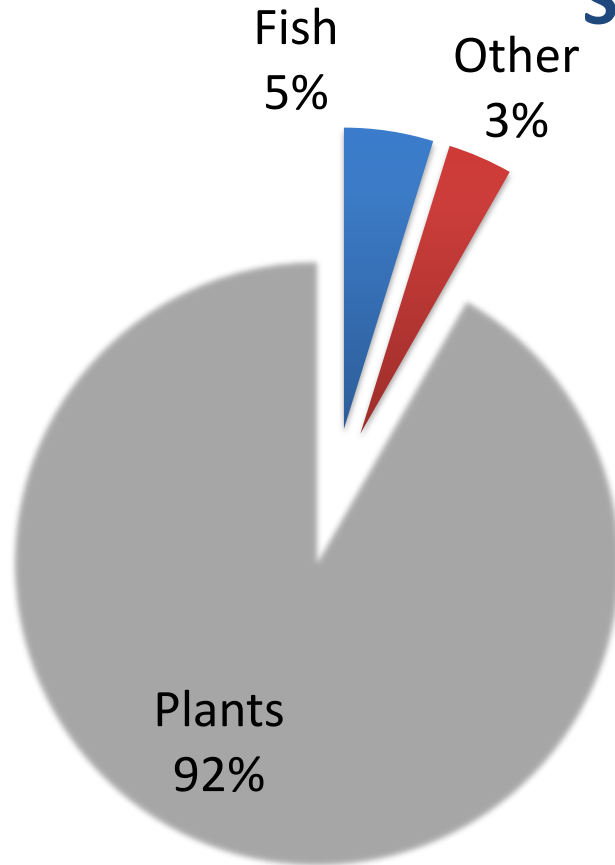
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PRELIMINARY FINDINGS



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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)



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Species Results

Top 15 Species





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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

What we
found



What we
were asked
to find





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Website Results

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

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

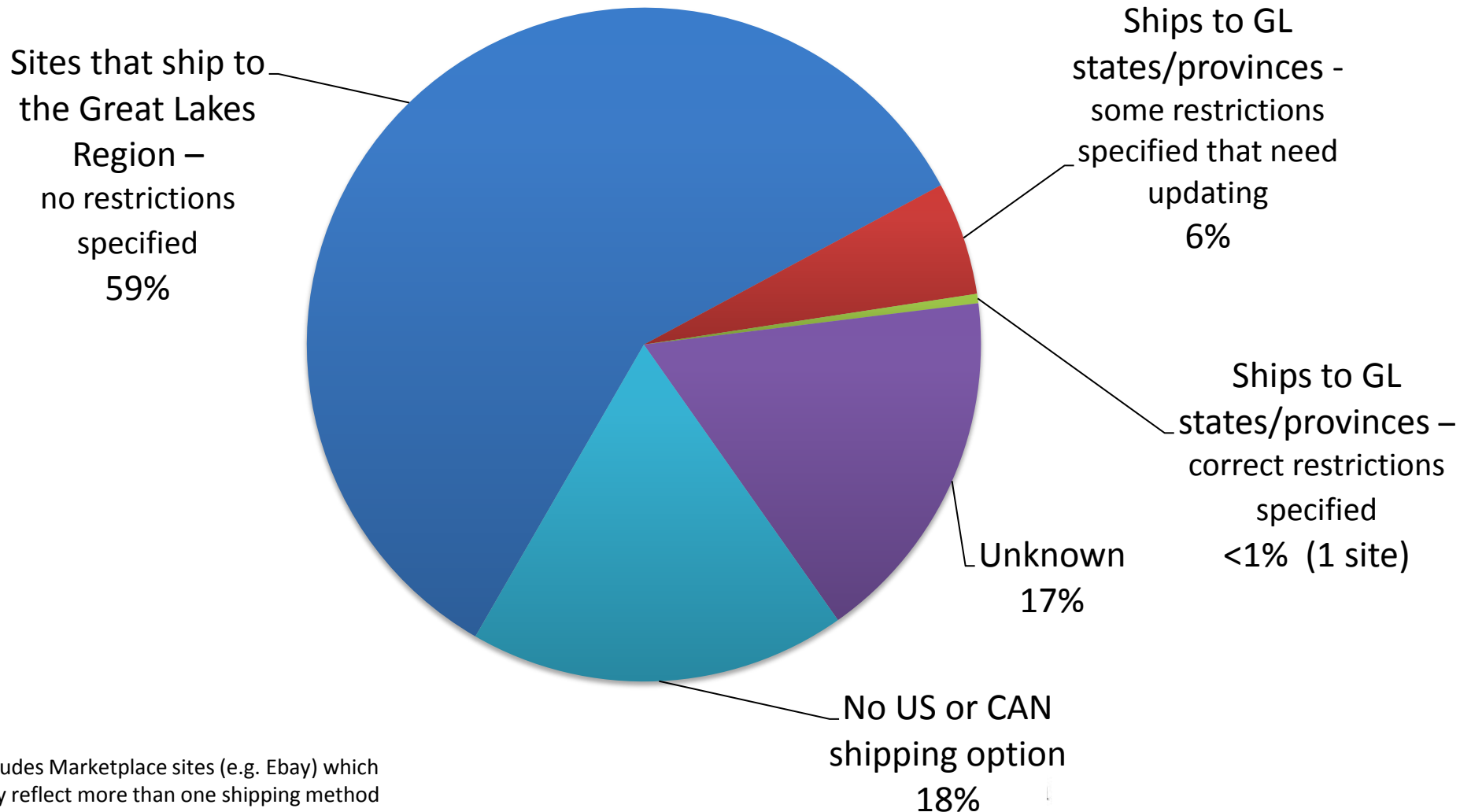
* Does not include sites for which shipping restrictions could not be determined





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Shipping Specifications by Website

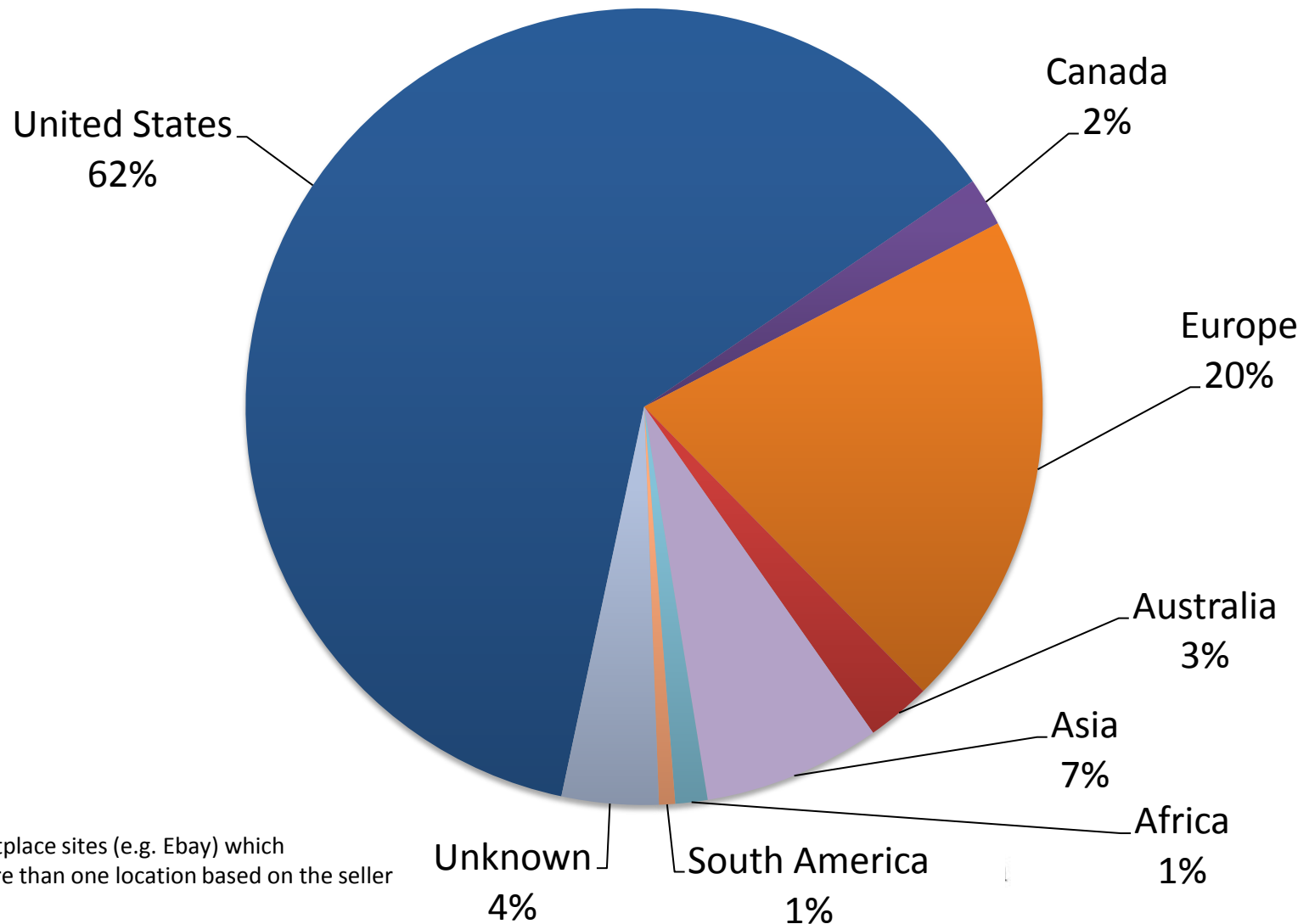


Includes Marketplace sites (e.g. Ebay) which may reflect more than one shipping method based on the seller



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Website distribution around the world



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



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Top 3 states overall:

- Ohio (14)
- Florida (13)
- California (10)



Sellers Located in the Great Lakes Region



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SUMMARY AND NEXT STEPS



Preliminary 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
- 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



Project Next Steps

- Continue to develop findings
- Conduct outreach
- Work with partners to take action on confirmed findings
- GLDIATR “roll-out”
- Develop final report, inc. recommendations for future work



Looking Ahead

- 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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