

“Most of them don’t know enough”:
Exploring organisms-in-trade hobbyists
intentions to reduce the spread of aquatic
invasive species in the Great Lakes Region

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BIOTIC Symposium

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Study Purpose and Objectives

- Better understand regional OIT hobbyists' behaviors

Identify:

- Factors that influence intention to perform purchase and disposal behaviors known to prevent AIS spread
- Future educational campaign materials and outlets

Survey Administration

- Voluntary recruitment
 - 16 OIT events in the Great Lakes Region
 - February-September 2013
 - iPad incentive
- Three survey types:
 - iPad
 - Paper
 - Email
- Approximately 30 minutes
- No differences between age and hobbyist type



Aquarium Hobbyists! Enter a Drawing to! Win an iPad! Water Gardeners!

by taking a survey on species purchase & disposal behaviors

Project Collaborators & Sponsors

Sea Grant

You must be 18 years of age or older. This project has been reviewed & approved by the NCSU Human Subjects Committee (IRB # 2772).

Survey Design

- Focus group and key informant interviews
- 39 questions:
 - AIS awareness
 - AIS concern
 - Past behavior
 - Behavioral intention
 - Behavioral barriers
 - Past/future information sources
- 5 point Likert-type scale
 - “Strongly disagree” to “Strongly agree”
 - “Not at all likely” to “Extremely likely”



Survey Events

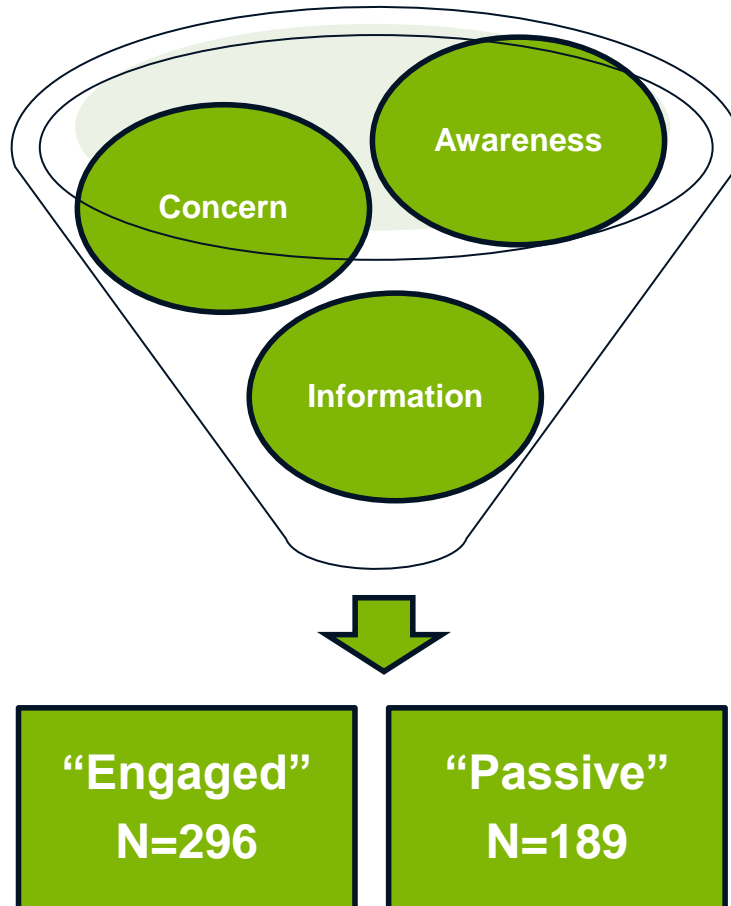
State	Show
IL	<ul style="list-style-type: none">• Chicago Flower and Garden Show (Chicago)• Greater Chicago Cichlid Association Swap (Chicago)
IN	<ul style="list-style-type: none">• Illiana Garden Pond Society Pond Expo (Crown Point)• Michiana Aquarium Society Spring Auction (Elkhart)
MI	<ul style="list-style-type: none">• Michigan Koi and Pond Club Koi Show (Milford)• American Livebearer Association Convention (Grand Rapids)
MN	<ul style="list-style-type: none">• Upper Midwest Koi Club Show (Minneapolis)• Minnesota Aquarium Society Annual Auction (Bloomington)
NY	<ul style="list-style-type: none">• Tri-State ZNA Koi Show (Freeport)• Tropical Fish Club of Erie County Annual Auction (Hamburg)
OH	<ul style="list-style-type: none">• Ohio Water Lily Festival (Springfield)• Greater Akron Aquarium Society Ultra-Aqua Show and Auction (Akron)
PA	<ul style="list-style-type: none">• Pennsylvania Garden Expo (Harrisburg)• Greater Pittsburg Aquarium Society Spring Auction (Pittsburg)
WI	<ul style="list-style-type: none">• Wisconsin Garden Expo (Madison)• Green Bay Aquarium Society Spring Auction (Green Bay)

Participants

- 83% Response rate
 - 654 qualified participants
 - 542 completed surveys
 - 43 intention hobbyists
- 61% Male
- 54% 50+ years of age
- 52% Bachelors degree or higher



Analysis: K-Means Cluster



Cluster Analysis

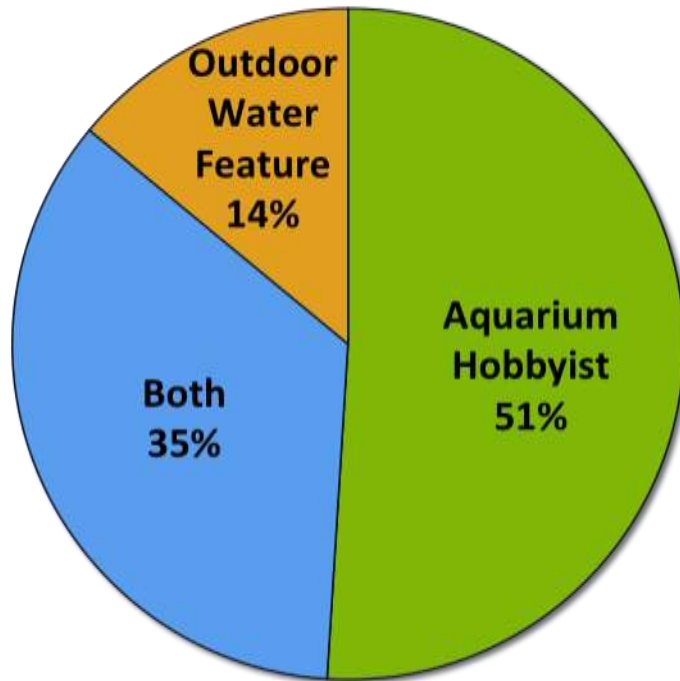
	“Engaged” Hobbyists Mean ^{***}	“Passive” Hobbyists Mean ^{***}
I am <u>aware</u> of AIS	4.03	2.75
I am <u>concerned</u> about the spread of AIS	4.16	3.21
I have <u>enough information</u> to know how to prevent the spread of AIS	4.18	2.34

1= “Strongly disagree”; 5= “Strongly agree”

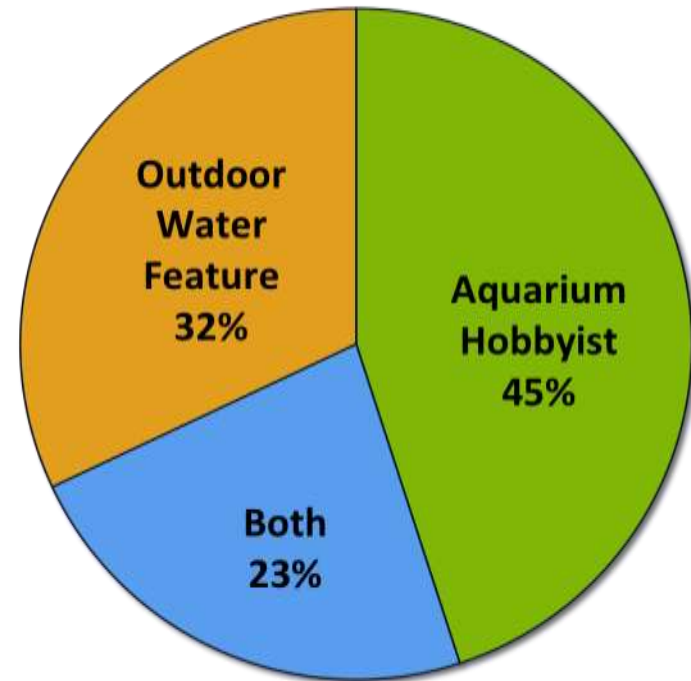
***p<.001

Hobbyist Types

“Engaged” Hobbyist Type

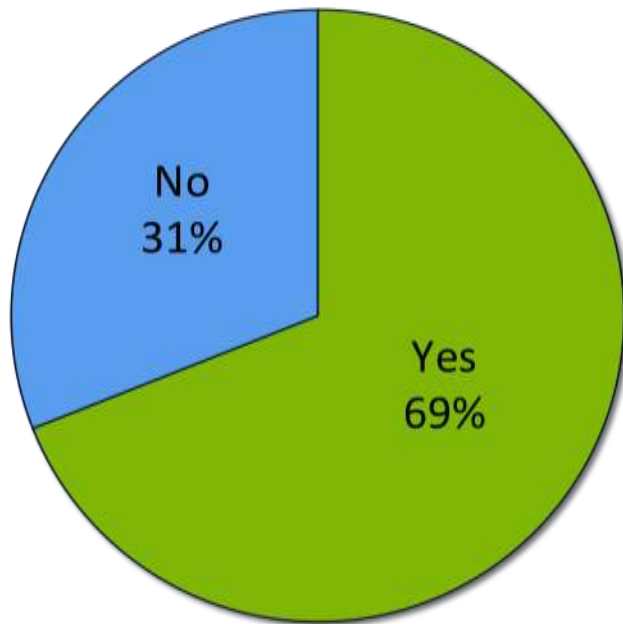


“Passive” Hobbyist Type

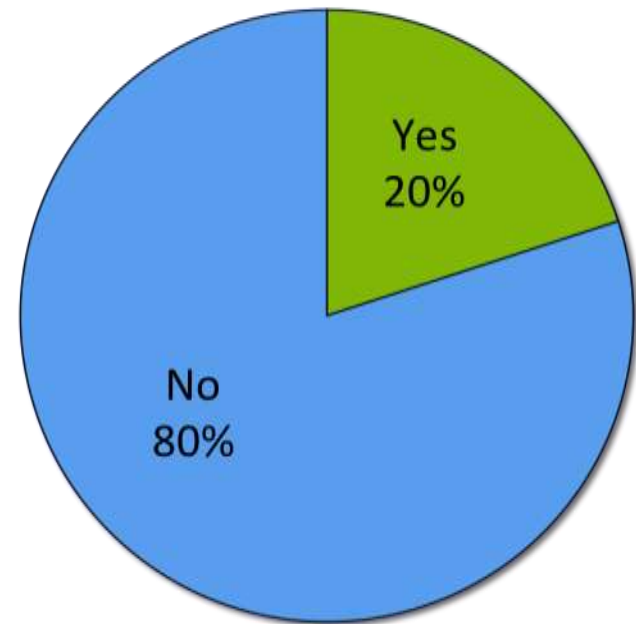


Past Information

“Engaged” Hobbyist Past AIS Information***



“Passive” Hobbyist Past AIS Information***



***p<.001

Past Information Sources

	Information Source	“Engaged” Hobbyists	“Passive” Hobbyists
Most Frequent	Magazines*	70%	51%
	Hobbyist forums	54%	49%
	Newspaper	55%	40%
Least Frequent	School*	27%	9%
	Purchases*	17%	3%

*p<.05

Behavioral Intention

	“Engaged” Hobbyists Mean	“Passive” Hobbyists Mean
Make future <u>purchase decisions</u> with preventing the spread of AIS in mind	3.74	3.28
Make future <u>disposal decisions</u> with preventing the spread of AIS in mind ^{***}	4.37	3.84
Purchase from a reputable, licensed <u>local dealer</u>	3.18	3.02
Purchase from a reputable, licensed <u>online dealer</u>	2.06	1.85
Contact a <u>retailer</u> (disposal advice and returns) ^{***}	1.48	1.88
Contact <u>another hobbyist</u> to dispose ^{***}	3.81	3.25
<u>Avoid releasing</u> species ^{***}	4.28	3.74
<u>Accept</u> aquatic species from another hobbyist [*]	3.08	2.70

*p<.05, ***p<.001

Hobbyist Characteristics

	“Engaged” Hobbyists Mean	“Passive” Hobbyists Mean
<i>Ascription of Responsibility</i>		
• I feel a sense of responsibility to prevent the spread of AIS ^{***}	4.44	3.91
• Hobbyists like me can reduce the spread of AIS ^{***}	4.37	3.98
<i>Personal Norm</i>		
• I am willing to put extra effort into preventing AIS spread ^{***}	4.35	4.00
• I feel a strong personal obligation to prevent AIS spread ^{***}	4.34	3.97
• I feel I should perform desired behaviors to protect the environment ^{***}	4.50	4.07
I know other hobbyists willing to accept species ^{***}	3.53	3.12
Retailers are responsible for education ^{***}	4.26	3.95
I trust local retailers	3.34	3.43
I trust online retailers [*]	2.80	2.60

*p<.05, ***p<.001

Future Campaign Outlets

	Information Source	“Engaged” Hobbyists Mean	“Passive” Hobbyists Mean
Most Effective	Booth with AIS examples	3.72	3.62
	Pamphlets with purchases	3.69	3.70
	Booth with AIS effects	3.64	3.57
	Booth with pamphlets	3.54	5.58
	Posters in stores	3.53	3.51
	Magazines*	3.45	3.24
Least Effective	Radio commercials	2.88	2.78
	Informational smartphone App	2.73	2.77
	Podcasts	2.38	2.46

1= “Least effective”; 5= “Most effective”

*p<.05

Campaign Strategies

- Increasing info likely to enhance awareness and concern
- Foster personal obligation
 - “It’s up to me”
- Attribute responsibility to hobbyists
 - OIT hobbyists contribute to the spread of AIS
 - Native species
- Visualize environmental consequences
- Build retailer trust
- Enhance hobbyist network
- Campaign materials:
 - Booth with examples
 - Pamphlets with purchases



Thank you! Questions?

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OIT Event Coordinators

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Habitattitude Awareness by Cluster

	“Engaged” Hobbyists	“Passive” Hobbyists
Are you aware of Habitattitude?	9.8%	5.6%
Do you recognize the logo?	15.8%	12.0%

Habitattitude Awareness by State

State	Aware of Habitattitude	Recognize Logo
IL	10.5%	17.7%
IN	0.0%	4.4%
MI	8.1%	14.3%
MN	12.5%	11.8%
NY	7.5%	17.0%
OH	6.5%	17.3%
PA	7.4%	13.2%
WI	9.0%	14.9%
Other	8.3%	11.1%