

# Addressing Aquatic Invasive Species: Survey Results from Organisms-in-Trade Hobbyists in Minnesota

A Fact Sheet Generated for Illinois-Indiana Sea Grant

July 2014

## Project Overview

Aquatic invasive species (AIS) threaten native ecosystems, damage infrastructure and personal property, and diminish recreational experiences. Although many vectors of AIS exist, the role of hobbyists involved in the organisms-in-trade (OIT) industry (i.e., aquarium hobbyists, outdoor pond owners, and water gardeners) is not well known. This fact sheet provides an overview of findings from survey research conducted with OIT hobbyists in the Great Lakes region and provides recommendations for future educational outreach campaigns.

## Project Goals

The overall goals of this study were to: (a) assess OIT hobbyist familiarity (i.e., knowledge and awareness) of AIS; (b) identify common information sources; (c) document current aquatic procurement and disposal behaviors; and (d) identify motivators and barriers to performing behaviors recommended to prevent the spread of AIS. This fact sheet provides an overview of survey results from 2 sampling events (one aquarium hobbyist and one water gardener or outdoor pond event in Minnesota; n=56)

## Research Methods

A survey questionnaire was distributed to self-identified OIT hobbyists at the 16 OIT events in the Great Lakes Region between February and September 2013. A list of annual OIT events (i.e., auctions, trade shows, and expos) in Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin was developed. Researchers attended one aquarium related event and one outdoor pond or water garden related event in each of the eight states. Strategic sampling was employed to select events based on OIT hobbyist alignment, event coordinators' willingness to allow researcher presence, and date of show within the study's timeframe. All event attendees approaching the research booth were asked to participate. The sampling events summarized in this fact sheet are the Minnesota Aquarium Society Annual Auction (April 6-7, 2013) and the Upper Midwest Koi Club Show (August 20-11, 2013).

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## Minnesota Results

Of the 66 event attendees asked to participate at events in Minnesota, 56 completed surveys were obtained (85% response rate). Most respondents owned an aquarium, either as their sole hobby or in combination with water gardening or tending an outdoor pond (Fig. 1).

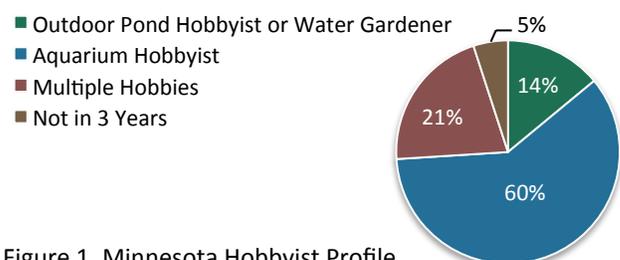


Figure 1. Minnesota Hobbyist Profile

Nearly one-half of respondents were over the age of 50 (45%) and 65% were male. The majority of respondents had completed at least a 4-year college degree (58%). Additionally, three-fifths of respondents (61%) reported receiving past information about AIS. The most frequently cited information source was hobbyist magazines (70%; Table 1).

*The majority of respondents reported being aware of AIS (62%) and concerned about the spread of AIS (73%).*

Magazines	70%
Newspaper	67%
Television	47%
Online water hobbyist forums	44%
School	35%
Purchases	0%
*N=34 (number of respondents who received AIS information)	

*The majority of respondents (61%) have received past information about AIS. Yet, more than one-quarter (27%) report not having enough information to prevent the spread of AIS.*

## Procurement Behaviors & Barriers

Nearly two-fifths of respondents (38%) have made purchase decisions with preventing the spread of AIS in mind and on average, respondents were “very likely” to make future purchase decisions with preventing the spread of AIS in mind. Additionally, more than one half of respondents (54%) trust local retailers but they do not know if their dealer is licensed (49%). A comparison of past performance and behavioral intention of recommended procurement behaviors between respondents at Minnesota events and respondents from all 16 events is provided in Table 2.

Table 2. Performance of Recommended Procurement Behaviors

Behavior	Past Performance		Future Likelihood <sup>a</sup>	
	MN	Overall	MN <sup>b</sup>	Overall
	Avoid purchasing known AIS	71%	72%	4.23
Buy from a reputable local dealer	94%	90%	4.12	4.18
Tell other hobbyists not to release	51%	67%	3.98	4.17
Purchase native plants <sup>c</sup>	69%	72%	3.80	4.15
Purchase non-weedy plants <sup>c</sup>	69%	72%	3.29	3.98
Buy from a reputable online dealer	34%	38%	2.98	3.00
Accept unwanted species from others	26%	36%	2.58	2.94

<sup>a</sup>Responses based on five-point scale from 1 (not at all likely) to 5 (extremely likely).

<sup>b</sup>Friedman tests show respondents are more likely to perform behaviors on the top of the list in the future.

<sup>c</sup>Only respondents owning water gardens or outdoor ponds were asked this questionnaire item.

*The majority of respondents feel a strong, personal obligation to prevent the spread of AIS (80%) and are willing to put extra effort into preventing the spread of AIS (93%).*

## Disposal Behaviors & Barriers

The majority of respondents (66%) have made disposal decisions with preventing the spread of AIS in mind and on average, respondents were “very likely” to make future disposal decisions with preventing the spread of AIS in mind. Some misinformation exists about proper disposal, as half of respondents (50%) prefer to compost their aquatic plants over other disposal practices (a behavior that is not recommended). A comparison of past performance and behavioral intention of recommended disposal behaviors between respondents at Minnesota events and respondents from all 16 events is provided in Table 3.

Table 3. Performance of Recommended Disposal Behaviors

Behavior	Past Performance		Future Likelihood <sup>a</sup>	
	MN	Overall	MN	Overall
	Avoid release into the environment	83%	73%	4.09
Contact another hobbyist to give or trade	69%	65%	3.59	3.59
Donate unwanted species to a school or business	30%	32%	2.73	2.81
Contact a retailer for handling advice	22%	19%	2.63	2.52
Seal aquatic plants in plastic bags prior to disposal	23%	33%	2.44	3.02

<sup>a</sup>Responses based on a five-point scale from 1 (not at all likely) to 5 (extremely likely).

<sup>b</sup>Friedman tests show respondents are more likely to perform behaviors on the top of the list in the future.

## Campaign Materials & Recommended Strategies

Respondents rated informative campaign pamphlets included with purchases and informational booths with examples of known AIS at OIT events as “very” effective campaign materials. Additionally, respondents rated smartphone Apps, podcasts, and give-away items at the least effective educational campaign materials. The behaviors that would require less outreach effort are those that most hobbyists have performed in the past and are “very likely” to perform in the future (i.e., Future Likelihood mean greater than 3.5; Tables 2 & 3). Enhancing the adoption of other behaviors (i.e., Future Likelihood mean less than 3.5; Tables 2 & 3) will require additional outreach effort.

*Most respondents (85%) believe that retailers are responsible for educating the public on ways to prevent the spread of AIS.*

## Water Garden/Pond Specific Behaviors & Barriers

On average, respondents who owned a water garden or outdoor pond were “very likely” to choose a location for their water feature away from flood prone areas and natural waterways. Additionally, more than one-half (53%) reported being unfamiliar with the practice of rinsing plants in a bucket until clean of attached dirt and debris.