

PA Angler Survey Regarding AIS



Ashley Walter
MAP AIS Meeting
Annapolis, MD
May 12-13, 2010

This report was made possible by a group effort.

□ Research conducted by: **Opinion Works**
Research & Communications in the Public Interest

□ Funding provided by:



Methodology



- Opinion Works interviewed a total of 1,000 randomly-selected Pennsylvania anglers by telephone.
 - Maximum potential margin of sampling error of +/- 3.1% at the 95% confidence level
 - Anglers chosen from database of Pennsylvania fishing license holders
 - Anglers were screened to ensure they had gone fishing in 2008 or 2009

Methodology



- Survey Questions covered the following topics:
 - Introduction and Screening
 - Willingness to participate, fished in last two years?
 - Fishing Experience
 - Frequency, locations
 - Standing/wading
 - Fish from shore? Wading? Footwear choices? Clean/dry?
 - Boat use
 - Frequency, locations, Clean/dry?
 - Bait use
 - Types used, disposal?

Methodology



- AIS: awareness and behavior
 - Awareness, willingness to mitigate risks
- Message testing/effectiveness of delivery methods
 - What messages are motivating, what is best way to disseminate information?
- Information sources
 - Websites, magazines?
- Demographics
 - Age, level of schooling, profession, gender, household composition?

Demographics

PA Anglers are typically male, almost half have a high school education or less, and the majority are between 35 and 64 years of age.

Table 1: Angler Demographics

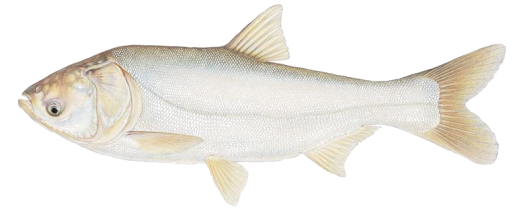
Characteristic	N	% of Sample
Gender		
Male	867	87%
Female	133	13%
Educational Attainment		
Less than high school degree	48	5%
High school graduate	428	43%
Attended some college	182	18%
Four-year college degree	221	22%
Graduate work	107	11%
Age		
Under 35 years of age	202	20%
35 – 49	327	33%
50 – 64	347	35%
65 or older	112	11%
Adult Anglers		
1 adult anglers in household	521	52%
2 adult anglers	372	37%
3 or more adult anglers	96	10%
Occupation		
Professional	256	26%
Retired	213	21%
Technical	138	14%
Building Trades	136	14%
Management	127	13%
Student	57	6%
Residence		
Pennsylvania resident	872	87%
Non-resident	128	13%

Fishing Experience



- PA anglers fished for an average of 12 days in the most recent year:
 - 35% fished 7 days or less
 - 34% fished 8 to 21 days
 - 30% fished 22 days or more
- 75% of anglers said they fished from the shore
- 50% of anglers said they fished by wading
- 49% of anglers fished from a boat

Fishing Experience



- More active anglers are more likely to fish multiple bodies of water than those who fish infrequently.

Table 3: Bodies of Water Fished by Frequency of Fishing

Bodies of Water Fished from a Boat	All Who Fished from a Boat	Total Days Fished in Pennsylvania			
		1-3 Days	4-7 Days	8-21 Days	22+ Days
N=	491	60	74	162	190
1 body of water	46%	70%	55%	48%	32%
2 or more bodies of water	54%	30%	45%	52%	68%

- 14% of anglers who fish from a boat said they transported the boat to other states (NY: 29% MD: 15% NJ: 9% OH: 7%)

Use of Natural Bait



Table 5: Use and Method of Acquiring Natural Bait

		Incidence of Use		Method of Acquiring	
		% of All Anglers	% of Natural Bait Users	Usually Purchased	Usually Collected
	N=	1,000	709		
Worms and night crawlers	668	67%	94%	72%	28%
Minnows and baitfish	454	45%	64%	81%	19%
Grubs or wax worms	387	39%	55%	95%	5%
Crayfish	98	10%	14%	27%	73%
Fish parts	58	6%	8%	52%	48%
Leeches	41	4%	6%	90%	10%

Q.16 "Did you use natural bait in the most recent year you fished?"

Q.17 "I am going to mention several kinds of bait. For each one, tell me if you usually purchased it, collected it yourself, or didn't use it at all."

Use of Natural Bait

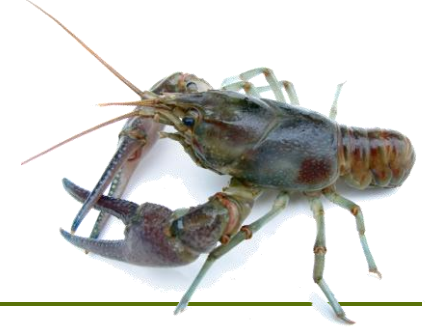


Table 6: Disposal of Natural Bait by Type of Bait Used

Type of Natural Bait Used:	Any Form of Natural Bait	Worms and Night Crawlers	Minnows and Baitfish	Grubs or Wax Worms	Crayfish	Fish Parts	Leeches
N=	709	668	454	387	98	58	41
Take it home	40%	41%	39%	40%	41%	41%	36%
Give it away	19%	19%	21%	22%	20%	16%	23%
Dispose of it in the trash	15%	15%	15%	16%	18%	18%	17%
Dump it in the water where you are fishing	14%	14%	16%	15%	14%	11%	16%
Dispose of it on shore	9%	9%	8%	7%	6%	11%	6%

Q.17 "I am going to mention several kinds of bait. For each one, tell me if you usually purchased it, collected it yourself, or didn't use it at all."

Q.18 "Which of these do you typically do with your unused bait?" (*Read list.*)

Use of Natural Bait



- ❑ Worms, night crawlers, minnows, baitfish, grubs, and wax worms are the most common types of natural bait.
- ❑ A majority of anglers take home their unused bait, take it home, or throw it away in the trash rather than allow it the chance to escape.
- ❑ Crayfish, unlike most other bait, are usually collected rather than purchased.



Current AIS Practices



Table 7: Current Precautions Taken by Anglers with Footwear and Gear

	N=	Almost Always (1)	Sometimes (2)	Rarely (3)	Never (4)	Not Sure	Mean
<i>(All)</i> : Dry your <i>(if waders)</i> : [waders and other] wet gear for at least five days.	1,000	47%	17%	5%	30%	1%	2.18
<i>(If waded)</i> : Clean your waders or footwear.	499	44%	21%	6%	29%	*%	2.21
<i>(If waded)</i> : Inspect your waders or footwear for aquatic plants and animals.	499	28%	11%	8%	53%	*%	2.86
<i>(All)</i> : Rinse your fishing gear.	1,000	25%	18%	11%	47%	*%	2.80
<i>(All)</i> : Clean your fishing gear with soap or another cleaner.	1,000	10%	11%	12%	68%	*%	3.38

Q.7 "After fishing, do you almost always, sometimes, rarely, or never do any of these things?" (Read list.)

Current AIS Practices



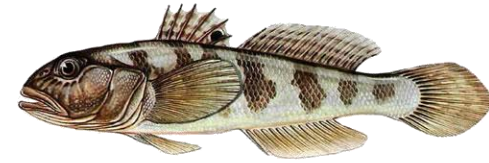
Table 8: Current Precautions Taken by Anglers Who Fish from a Boat

(N=491)	Almost Always (1)	Sometimes (2)	Rarely (3)	Never (4)
Allow the boat to dry for at least five days.	63%	17%	3%	10%
Drain water from the boat including live wells and bilge pumps.	69%	4%	2%	21%
Inspect the boat and equipment for aquatic plants and animals.	45%	10%	6%	36%
Rinse your boat with high pressure and/or hot water.	23%	19%	10%	42%
Clean your boat with detergent or other cleaners.	19%	18%	15%	41%

**Includes those who say they do not remove their boat from the water.*

Q.15 "After removing your boat and/or trailer from the water, do you almost always, sometimes, rarely, or never do any of these things?" (Read list.)

Current AIS Practices



- Around 50% of anglers are taking basic precautions with equipment (fishing equipment, waders, etc.); slightly more with boats.
- Adoption of mitigation measures lessens when they become more complicated or time consuming.

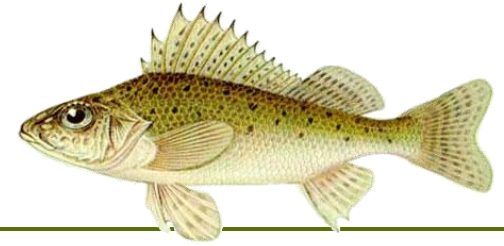


AIS Awareness



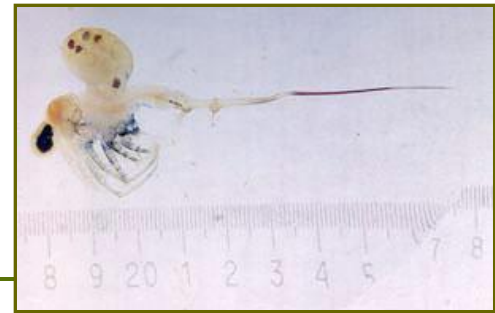
- 77% of PA anglers have heard of the problem of aquatic invasive species.
 - Awareness increases with an angler's personal level of education and is stronger in those over 35 years of age.
 - Anglers who have fished from a boat in recent years have a greater awareness of AIS.
 - Anglers who do not use natural bait have a higher awareness of AIS.

AIS Awareness



- ❑ 34% of anglers think “a lot” about AIS.
- ❑ 38% of anglers think “a little” about AIS.
- ❑ 28% of anglers think “not much at all about it” or are not sure.
- ❑ Like awareness, the tendency to think about AIS issues increases with age and personal level of education.
- ❑ Anglers in the Upper Delaware and Erie areas seem to think slightly more about the problem than anglers in other areas of PA.

AIS Awareness



- In general terms, anglers are willing to take actions against AIS
 - 94% surveyed feel that “it is reasonable... to expect anglers to take steps to prevent the spread of invasive species.”
 - Only 4% think that it is unreasonable.
 - Anglers starting with some awareness of AIS generally have stronger intentions of taking some precautions after learning waters fished or boated in are infested with a type of AIS.

AIS Awareness



Table 12: Likelihood of Taking Precautions after Learning Waters are Infested (N=1,000)

	Very Likely (1)	Somewhat Likely (2)	Not Likely (3)	Not sure	Mean
Inspecting the boat, trailer and fishing gear for aquatic plants and animals.	70%	16%	13%	2%	1.42
Avoiding the release of unwanted bait into the water	69%	8%	22%	2%	1.52
Draining water from the boat including live wells and bilge pumps.	67%	11%	17%	4%	1.47
Allowing your boat, trailer and fishing gear to dry for at least five days.	66%	18%	13%	3%	1.45
Rinsing your boat, trailer, and fishing gear with high pressure and/or hot water.	54%	20%	24%	2%	1.69
Cleaning your boat, trailer, and fishing gear with detergent or other cleaners.	50%	22%	27%	2%	1.76
Flushing your boat's cooling system with tap water	47%	14%	29%	10%	1.81

Q.23 "If you found out that the waters you fish or boat in were infested with aquatic invasive species, would you be very likely, somewhat likely, or not likely to take any of the following steps to stop them from spreading."

AIS Awareness



- Although awareness of AIS problems increase the likelihood of anglers adopting precautions against the spread of AIS, there is still resistance to the more complicated measures.



Message Testing

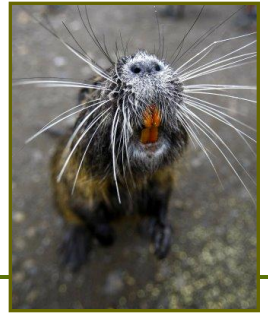


Table 14: Testing Messages that Might Motivate Action on Invasive Species (N=1,000)

	5	4	3	2	1	Not Sure	Mean
	Strongly Motivating ←			→ Not Motivating			
Invasive species crowd out more desirable native fish.	65%	12%	15%	2%	5%	2%	4.31
There is a stiff fine if you are caught with invasive species on your boat or gear	60%	9%	15%	3%	11%	2%	4.06
Invasive species can damage your boat or equipment.	53%	12%	20%	4%	9%	1%	3.98
There are enforcement checks on roads and at boat launches to catch violators.	53%	12%	18%	4%	12%	1%	3.92
Some anglers are taking a pledge to stop the spread	46%	13%	27%	6%	8%	1%	3.84
Your friends start talking about this problem and want you to do something about it.	42%	17%	25%	6%	9%	1%	3.78
Most of the people you know are already taking steps to stop the spread.	33%	13%	27%	8%	16%	3%	3.41

Q.24 "I am going to read you some new facts. For each one, if you found it out, please tell me how much it would motivate you to do something about the spread of invasive species. Use a 1 to 5 scale where 5 means it would be strongly motivating, 3 is somewhat, and 1 is not at all." (Read and randomize list.)

Message Testing



- Generally, messages appealing to the angler's self interest were ranked the most highly (less fishing, damaged gear, penalties).
- Messages dealing with social aspects/pressure were considered less motivating.
- The messages rank roughly the same when broken out into poor adopters and those who are more aware of AIS issues.

Message Testing



Table 15: Effectiveness of the Phrase “Clean Your Gear” (N=1,000)

5	4	3	2	1	Not Sure	Mean
<i>Extremely Effective</i>			<i>Not at all Effective</i>			
35%	19%	31%	7%	7%	2%	3.70

Q.26 “... how effective is the phrase ‘clean your gear’ in reminding you of a way you can reduce the spread of invasive species?”

- 77% of anglers believe the phrase “check, drain, clean, dry” gives them “enough information to take action to stop the spread”.
- “Clean Your Gear” ranks slightly lower as it does not give specific instructions.

Delivery Methods



Table 17: Most Effective Methods of Delivering AIS Messages (N=1,000)

	5	4	3	2	1	Not Sure	Mean
	Extremely Effective			Not at all Effective			
Signs at the boat launch or marina	55%	19%	18%	3%	5%	1%	4.18
Information in fishing or boating regulation booklets	53%	16%	20%	6%	6%	*%	4.05
Signs at the bait and tackle shop or sporting goods store	49%	19%	22%	5%	4%	1%	4.05
Brochures, species identification cards, or fact sheets	40%	18%	27%	7%	8%	1%	3.75
Stories on local radio or television news	39%	18%	28%	6%	9%	1%	3.73
Public service announcements on radio or television	37%	18%	27%	9%	9%	1%	3.66
Magazine or newspaper articles	33%	20%	30%	9%	8%	1%	3.62
Internet websites	34%	14%	26%	9%	16%	1%	3.41
A tackle box sticker or reminder card	31%	17%	29%	9%	14%	*%	3.41
Conferences or workshops for boaters or anglers	25%	11%	31%	13%	18%	1%	3.12
Billboards	24%	15%	32%	13%	16%	1%	3.17



A Note on Websites



- Website visitation is highly correlated with age and personal levels of education.

Table 21: Visitation to Fishing-Related Websites

Website	All Anglers	Visit Internet Often or Sometimes*
N=	1,000	398
Pennsylvania Fish and Boat Commission	36%	89%
Pennsylvania Department of Environmental Protection	21%	54%
Is there another fishing-related website you like to visit?	12%	29%
Protect Your Waters.net	4%	10%
Pennsylvania Sea Grant	3%	7%

Conclusions



- Awareness of AIS has penetrated the angler community, with 77% of those tested saying they have heard about the problem and 34% saying they think “a lot” about it.
- There is currently good adoption of several simple precautions to prevent spread (drying gear, boats, and footwear) but even these are nowhere near the level of universal adoption.
- Messages appealing to the angler’s self interest seem to be the most effective (less fishing, damaged gear, penalties).

Conclusions



- ❑ Combining a motivational message with an instructional message will probably get the best results.
 - “Invasive species crowd out more desirable native fish so check, drain, clean, and dry!”
- ❑ A combination of delivery methods would ensure the greatest dissemination of the message.
 - Primary – immediate point of contact: signs at boat launches, marinas, bait shops; information in regulatory literature, etc.
 - Secondary – voluntary contact: more detailed information in print, on-line, or through the media

Any Questions?

