Wisconsin lakes under siege: Learning how local citizens perceive the threat of aquatic invasive species

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Residents felt that Iron River and Delta area lakes were an integral component of the local economy and vital to the quality of life in the north.

Situation

The lakes of Wisconsin's northwoods are one of the state's natural resource treasures. Bayfield County, on the boundary of Lake Superior, is home to a number of popular lakes, including the Pike Lake Chain.

These northern water resources bring myriad benefits to the state, including:

- A wide variety of recreational opportunities.
- Fish and wildlife habitat.
- A source of drinking water.
- A solid tourism base that provides support for local businesses.
- Aesthetic beauty.
- Effective natural control for storm water runoff.

But like many other lakes and waterbodies in the Midwest, northern lakes are under attack from aquatic invasive species (AIS)—hitchhikers from other places that threaten to crowd out and eliminate native species. These unwanted visitors—plants or organisms that often arrive on the bottoms of boats—threaten the long-term ecological and economic health of the region.

Experience has shown that the way in which a local community responds to the presence of exotic invaders can affect the success of efforts to mitigate damage and protect water resources.

Response

To learn more about how local residents viewed the presence of exotic invaders in Bayfield County lakes, UW-Extension water resource specialists teamed up with the Bayfield County UW-Extension community resource development agent, local lake groups and UW-Whitewater to study residents' perceptions about aquatic invasive species such as Eurasian water milfoil, curly-leaf pondweed, rusty crayfish and zebra mussels.

The researchers felt that the information gained would help them better understand how the public perceives AIS and aid in identifying outreach and education needs. Armed with this information, educators could focus on changing the behavior patterns of lake users who ignore the risks posed by AIS.

In the summer of 2007, a five-page, 22-question survey was mailed to 1,451 residential property owners in the Towns of Iron River and Delta, located in Bayfield County. The survey was conducted by the Bayfield County UW-Extension office in cooperation with the UW-Whitewater Department of Economics and other UW-Extension partners.

In the survey, people were asked about the impacts of aquatic invasive species on the area's economy, including queries on the ways they currently enjoyed using local lakes.

The survey went to those who owned lake property and those who did not, allowing researchers to identify different attitudes between the two groups.

Citizens were asked questions about their property's characteristics; their recreational habits; perceptions of current lake conditions and possible future scenarios; awareness of aquatic invasive species (AIS); possible changes in behavior based on levels of AIS; spending patterns; and demographics.

The survey also asked for respondents' history and experiences with lakes outside the Iron River/Delta area.

Property owners shared how they might change their lifestyles if the levels of AIS populations were to grow; for example, some reported they would cut back on their recreational fishing.

Outcomes

More than 600 surveys were completed and returned for a total response rate of 48%.

The returned surveys gave the study team some essential information about area citizens:

- 452 had waterfront properties; 181 owned non-waterfront property.
- Approximately a third of respondents owned their property from 1 to 10 years; only 12% had owned it for over 50 years.
- 34% of respondents were year-round residents.
- Average number of days the properties were used by respondents' families in the summer was 40 days.
- Approximately 62% of respondents kept a boat in the area.
- 38% of respondents belonged to an area lake association.
- The most popular activities on Bayfield County lakes for the respondents included fishing, swimming, wading and motor boating.
- 34% of the 181 non-waterfront property owner respondents lived less than a 1/4 mile from a lake.
- Over half of those surveyed knew the name of at least one aquatic invasive species.
- On average, properties were used by respondents' families 195 days per year.

Economic impact. Based on survey data, researchers calculated that the average household in the towns of Iron River and Delta spent $6,800 per year in the area. Total spending in these towns by all property owners is estimated to be about $9.86 million per year.

Future scenario for lakes. Respondents were asked what they thought would happen if area lakes were invaded by aquatic invasive species and a particular scenario occurred. When given a choice of responses, some residents said they would spend less time at their property—34 fewer days per year on average.

Angler spending. Respondents said they would spend less time fishing—3.3 days, or 25% less time than they spend currently—if the impacts of AIS became greater.

Applying this to the state's population as a whole, it was estimated that there would be 4,817 fewer fishing days per year in the Pike Lake Chain area—a net loss of $250,000, or about 24%.

Likes and dislikes. Respondents were asked to identify characteristics they liked most about living in the Iron River/Delta area. The top five answers included: 1) serenity, quietness, peacefulness, tranquility; 2) pristine water quality and clear, clean lakes; 3) landscape, scenery, beauty of the area; 4) lakes; 5) fishing.

Another question asked respondents about their dislikes, with the top two answers being: 1) property taxes; and 2) noise pollution from recreational vehicles.

Conclusions. This survey data provides an interesting portrait of how the property owners in one area of Wisconsin feel about and spend recreational time on their local lakes. Researchers concluded that there is probably room for improvement in the level of awareness and knowledge of aquatic invasive species. However, people do appear concerned about various threats posed by AIS. Potential AIS invasions have implications not only for quality of life but also for the local economy.

As the body of knowledge regarding the impacts of AIS on local and state economies continues to grow, it is becoming more apparent that the costs are high. When it comes to AIS, the old adage that an ounce of prevention is worth a pound of cure is still true.

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Photo by Robert Korth

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