

Are zebra mussels unfairly shelled? Student's research suggests so

by Alex Hummel - Tuesday, March 11, 2014

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I say “zebra mussels.” You say “bad.” Maybe even “BOO!”

That about sums it up for the diminutive, sharp-shelled mollusks that, in the mid-1980s, invaded Wisconsin's hallowed waterways and made themselves at home. Many Badger State lakes are infested.

But a University of Wisconsin Oshkosh economics student who will share his research during this week's [11th annual “Posters in the Rotunda”](#) research showcase under the State Capitol dome found that one of our most notorious invasive species is hardly blighting residential and recreational waterfront property values.

“I was sitting around lunch one day with an electrician and an IT guy, and they were complaining about ‘zebra mussels are so bad on property values,’” said UW Oshkosh student Martin Meder. “I thought, ‘Hmm, I’ve had a semester and a half on research in economics. Surely there is some research on this.’ So, I decided to look into it, and, no, there was nothing... So my next thought was, hey, I’ve had a semester and a half in economics, surely I can do some research and solve this problem that nobody’s ever attempted before. And that’s actually really hard.”

Meder, who teamed up with UW Oshkosh College of Business Economics Professor Marianne Johnson, launched his deep dive into the data of zebra mussels in 2012. After spending hundreds of hours analyzing Integrated Property Assessment System (IPAS) data from the state for properties on more than 400 lakes in 17 northern and northeastern Wisconsin counties, Meder reached a conclusion.

... And probably not the one you’d expect.

“If there is an impact, it’s clearly not negative,” Meder said. “We find that property values generally are higher on lakes with zebra mussels.”

Higher? With zebra mussels? The aquatic invader Wisconsin has learned to loathe?

“Some research has shown that they disadvantaged some unpopular fish species,” Meder said. “They blanket the bottom of the lake bed so carp can’t feed... If they can’t get past zebra mussels, they can’t eat. So, they are disadvantageous for carp. They also seem to be advantageous to fish species that people like, like smallmouth bass. They tend to help those populations out a fair amount. They increase the water clarity of the lake, and they remove pollutants that are suspended in the water at an increased rate... which makes lakes safer to swim in if they weren’t previously.”

Meder said his research doesn’t address the causation, but “with statistical certainty, I can say that zebra mussels are associated with an approximately 10 percent increase in lakefront property prices.”

Johnson said Meder applied for a student-faculty research grant in 2012. He broached the topic in a proposal, and “we went from there,” she said.

“I was convinced he had a good idea here, and when we looked at the background research, we realized there wasn’t a lot being done,” Johnson said. “A change in the way Wisconsin collects its property data made this much more possible than it would have been five years ago. It’s all online.”

Specifically, Meder zoomed in on the property assessment data for the sales of houses on lakes known to be infested with zebra mussels. Most of his research was in front of a computer screen. He didn’t have to interact with his subjects, but admits he couldn’t resist a side trip or two to local shores to get away from his data and actually interact with the organisms.

“Instead of doing field research and going out and studying zebra mussels, as economists we relied on the data that was collected from the Wisconsin DNR on which lakes were infested,” he said. “So, it’s really statistical research.”

“I have always had an interest in biology and perhaps the reason why I chose in the realm of environmental economics is because it’s one of those hybrid sciences where you can take something like economics and see how it applies to these new situations,” Meder said.

His findings will enjoy some great spotlight this week. Meder is part of a six-student delegation from UW Oshkosh that will present its collaborative research during the 11th annual Posters in the Rotunda on March 12. From 10 a.m. to 3 p.m., about 150 of the UW System’s best and brightest undergraduate students will fill the Capitol Rotunda to share their original research findings with legislators, state leaders, UW alumni and supporters.

Undergraduate students and faculty advisers from UW campuses across the state will take center stage in a day of events highlighting the positive impacts of university research in Wisconsin.

Meder will be joined by UW Oshkosh students presenting research on topics including “The Effects of Lineup Instructions on Eyewitness Accuracy,” “Hands-on Astronomy and its Use to Increase Engagement in Science” and whether primates use long-distance vocalizations “to distinguish species in the wild” ([Learn more](#) about UW Oshkosh and other institutions' student research projects).

“This research helps connect students to real-world problems,” said UW System President Ray Cross. “The creativity and curiosity that propel the students’ academic research also help prepare these undergraduates for the workforce, or for pursuing graduate-level work. Ultimately, these experiences will lead to exciting, innovative careers that benefit the larger community.”

Meder, a nontraditional, returning student originally from New Jersey, will graduate from UW Oshkosh with his economics degree and mathematics minor this May. He currently awaits responses from graduate schools.

In addition to his opportunity at the State Capitol this week, his and Johnson’s collaborative work is also in queue to be published and presented in weeks to come. He will present a paper at the Midwest Economics Association later this month.

Johnson said she has had the opportunity to collaborate with a number of undergraduate students on research projects. Meder's was among the most intensive.

And, it's fair to say, its findings were among the most eye-opening, too.

"It's a complicated problem because we don't want to like zebra mussels," Johnson said.

[UW System News](#) *contributed to this story.*

Learn more:

- [2014 Posters in the Rotunda](#)
- [Research Opportunities at UW Oshkosh](#)
- [Meet Professor Marianne Johnson](#)
- [Zebra Mussels – Wisconsin Department of Natural Resources](#)