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Devastation from Zebra and Quagga Mussels Holds Lessons for Asian Carp: Don't Let Them In, UB Expert Says



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As the battle to keep invasive Asian carp out of the Great Lakes continues, Domske says the lakes' past experience with zebra and quagga mussels demonstrates the danger of letting foreign species in.

"Of all the threats to the biodiversity of the Great Lakes and the ecosystem, invasive species are one of the top," Domske says. "Invasive species are something we should have controlled better, and we didn't and now the ecosystem is really paying the price."

Q: How did zebra and quagga mussels get into the Great Lakes? How have they changed the lakes?

A: Zebra and quagga mussels came from what they call the Ponto-Caspian region, which includes the Black and Caspian Sea. And they came in ballast water about 20 years ago.

In Lake Erie, the entire food web has changed because of zebra and quagga mussels, which consume plankton. Before, there was so much plankton in the open water that small fish could find plankton, then the larger fish could eat the smaller fish in the water column, and still larger fish could eat them. Now, instead of having a very plankton-rich environment, the plankton is being eliminated by the zebra and quagga mussels that each filter more than a liter of water each day.

Q: Is there anything we can do to remove zebra and quagga mussels in the Great Lakes?

A: Not really. The only place they're managed is in intake pipes or in water intake stations, and they usually control them using chlorine. It would not be possible to manage them throughout the lakes. They're so prolific, and they're so widespread. Each female produces about a million eggs a season. So you can see how quickly they spread.

Q: Officials in some Great Lakes states are looking to sever links between the Mississippi River and Great Lakes, with the hope of keeping invasive Asian carp out of the lakes. Why are Asian carp a threat?

A: This fish is a threat because it is very prolific - it breeds very readily, and there are places in its range along the Mississippi River and the Illinois River where it now makes up 90 percent of the fish population. Asian carp are filter feeders. And like the mussels, they love to eat plankton. And when I say plankton, keep in mind that all fish start out as plankton.

If Asian carp get into one Great Lake, there would be nothing to stop them from moving throughout all of the Great Lakes. We may not be able to get rid of the invasive species that have already entered the system, but we need to make sure that we don't repeat this mistake.

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Q: Should we be doing more to keep the Asian Carp out of the Great Lakes?

A: There is a ship canal that connects Lake Michigan to the Mississippi River, where the carp live. Many people are calling for that to be blocked off so there's no way the water could flow in between the lake and the river. That hydrological separation would be a sure way to keep them out.

Economically, it would create a negative impact: The canal does move a lot of barges. But just speaking from a scientific standpoint, closing it certainly would be a way to block that connection from Asian carp into the Great Lakes.

Q: What should the average person know about invasive species?

A: If they have a boat and they plan on moving it from one waterway from another, they should clean it, usually with a high pressure hose. Some people use a mild bleach solution, a chlorine solution. Fishermen should empty their bait buckets before moving from one place to another, because some of these invasive fish, when they're small, they look just like a native species. Even divers and kayakers should be careful that they don't take equipment from one lake to another.

People say to me, 'Lake Erie is so clean now that the mussels are here.' But it's not clean, it's clear. And clear doesn't mean healthy. Clear means there's insufficient plankton to support the food web. In Lake Ontario, they actually refer to parts of it as being desert-like. That's incredible. This was a system that was so rich and so loaded with plankton, and now it's been changed by just two invaders.

I'm a scuba diver. In the old days, I would go to dive on the bottom of Lake Erie. I'd hit the bottom, and there would be plants and soft sediments and sand. Now, there are areas where all you have is six or eight inches of mussel on empty mussel shell. I've been diving on a wreck, and I know that that wreck has an anchor chain. And now, all it is is big clumps of mussels.

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