

Zebra mussels

Boaters helped the spread of mussels into seven more Oakland County Lakes last year

By TIM RICHARD
STAFF WRITER

It's up to boaters to halt the spread of zebra mussels into inland lakes.

Last year seven inland lakes in Oakland County and one in Livingston were invaded with zebra mussels, according to Michigan Sea Grant.

The area lakes are among 19 new names on the 1997 list of lakes found to be contaminated by the mussels, which have spread through the Great Lakes.

Now to the list are Lakeville, Maceday, Pine, Union, Upper Straits and White Lakes in Oakland County and Strawberry in Livingston County.

Large inland lakes with a high level of transient boats are likely carriers. Boats, trailers and fishing equipment pick up clinging veligers (larvae) from infested waters, said Sea Grant manager Mike Klepinger.

"It was originally a European freshwater resident," Klepinger said. "It crossed the Atlantic in the

ballast of ocean-going ships. It was found in Lake St. Clair in 1986, and by 1988 it was exploding."

The shellfish's most immediate damage was to encrust the city water intake pipes in Monroe, which had to shut down the system. Klepinger outlined how the zebra mussel upsets the ecosystem:

■ By filtering one liter a day, each mussel clarifies the water of plankton, the lowest creature in the food chain. Thus, the mussel competes for food with native fish and disrupts the food chain.

■ The clear water admits more sunlight, stimulating the growth of lake weeds. The weeds die, decay and smell.

■ Mussel shells encrust water intakes, piers and boats. In the Great Lakes, they encrust shipwrecks and are a physical danger to scuba divers.

Most at risk, said Klepinger, are large ones with a high level of transient activity.

By identifying infested lakes, Sea Grant hopes lake managers and citizen groups will erect signs

at boat launches and develop volunteer programs for boat inspections and cleanings.

Klepinger advised boaters to "be a good neighbor. Keep your boat and trailer clean. Scrub them off, remove the weeds, and dry them off."

On many inland lakes, riparian owners use lake water on their lawns. When the intake pipes become clogged, they'll find it necessary to scrape off mussel shells.

Michigan Sea Grant is a cooperative program of Michigan State University and the University of Michigan. Volunteers have done much of the sampling work. The project has produced an award-winning instructional video with illustrated handbook.

Sea Grant recruited volunteer monitors beginning in the spring of 1993. The 19 new lakes on their infested list bring the total of confirmed infestations to 65.

Volunteers are given kits with which they take samples in more than 18 feet of water. The procedure takes an hour and is repeated twice during the summer.

Plankton samples are sent to a laboratory, where biologists determine whether the water contains microscopic mussel spawn.

OU student finds benefit to mussels

Although zebra mussels have certainly earned their bad reputation, Oakland University researchers in Rochester, in collaboration with the Michigan Department of Natural Resources (DNR) Fisheries Division, recently demonstrated a way in which they are beneficial.

According to research initiated by student Sarah Thayer for her master's degree at Oakland, yellow perch, a popular game and commercial fish, grows faster when zebra mussels are present than without them.

Through collaboration with Robert Haas of the DNR Lake St. Clair Fisheries Research Station, OU biology Professor Douglas Hunter and OU Math statistician Robert Kushler, Thayer proved that zebra mussels create a favorable habitat for invertebrates, a staple in the yellow perch diet.

Research began in 1992 with Thayer and her colleagues maintaining juvenile yellow perch in cages — some with zebra mussels, some without. They found that perch in the cages with zebra mussels grew faster and reached

greater weights and lengths than perch without zebra mussels.

By filtering particulate matter and depositing the remainder on the pond's bottom, the mussels produced an excellent habitat for these lake invertebrates to grow, Thayer and her colleagues demonstrated that provided more food for yellow perch.

"Given the enormous densities of mussels in some areas of the Great Lakes and inland lakes, and their tendency to continuously filter particulate matter from the water, they can have a lasting influence on the aquatic food chain in those areas," Hunter said. "In this case, zebra mussels facilitate energy flow into the yellow perch population by enhancing the bottom invertebrate community."

Such a phenomenon has a significant impact on sport and commercial fisheries. According to Haas, yellow perch fillets now bring retail prices as high as \$12 per pound, making them one of the highest valued sources of protein on the market. Any significant change in the community of small bottom-

dwelling organisms, such as a reduction in zebra mussels, is likely to affect the production of valuable bottom-feeding fishes such as yellow perch.

Creel surveys of sport fishing on Michigan's waters of Lake St. Clair during the mid-1980s showed that about one million yellow perch were being caught each year. While similar angler surveys have not been conducted recently, reports by the angler charter fishery indicate that the perch population and fishery dramatically improved since then, especially following zebra mussel colonization in the early 1990s. Perch population studies conducted by the Michigan DNR since 1993 show that yellow perch in Lake St. Clair are abundant, eating lots of high quality food and growing fast.

"Although the zebra mussel, like many other exotic species has an overall detrimental impact on the ecology and/or economy of the areas where they occur, their presence is not entirely negative," said Thayer, who is now a doctoral student in Michigan State University's Department of Fisheries and Wildlife.

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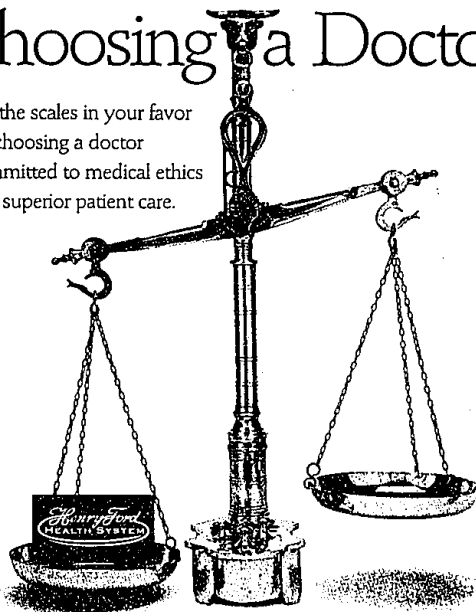
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