

Zebra mussels

Human Health Risk

Ecological Risk L

Socioeconomic Risk L

Zebra mussels are thumbnail-sized freshwater mollusks that are native to western Asia. After accidental introduction in the Great Lakes via ballast water in ships, colonies of zebra mussels have invaded 20 states east of the Mississippi since 1986. Zebra mussels infest and devastate native mollusk populations and dramatically affect the food web because of their efficiency as filter feeders. In the Hudson River zebra mussels filter all the water in the tidal-freshwater part of the river every two to three days. Prior to the invasion all other filter feeders combined filtered the water about once every 50 days. Zebra mussels have not yet been detected in New Jersey waters, but it is probable that invasion will occur in the near future.

What's at risk?

Native freshwater mollusks are in danger of extinction if zebra mussels become established in New Jersey. All inland freshwater ecosystems would be at risk from severe and dramatic changes in habitat structure and food web dynamics. Socioeconomic costs would extend to all waterworks and utilities in the state with freshwater intake and outflow pipes.

What are the ecological impacts in New Jersey?

Based on the assumption that the zebra mussel does not currently exist in New Jersey, the risks are now low. Should the mussel become established in New Jersey waters, and this is likely, zebra mussels will pose a significant threat to freshwater ecosystems. All aquatic organisms which are subject to attachment by zebra mussel colonies would be at risk. Phytoplankton, which have declined by 90% in the Hudson River, would also be at risk statewide, as would the entire ecosystems that depend on them.

What are the socioeconomic impacts in New Jersey?

Massive colonies of zebra mussels clog water intake and outflow pipes used by water companies and other utilities. In affected areas, these costs exceed \$5 billion annually. If zebra mussels invade New Jersey waters, and the costs are proportional, then this would result in annual costs of \$336 million. However, these costs are hypothetical, as

the zebra mussel has not yet been detected in New Jersey. Other socioeconomic impacts are harder to evaluate. While it seems reasonable to assume there would be socioeconomic consequences associated with the adverse impacts to native aquatic communities, there are also potential benefits. For example, zebra mussels are thought to have increased populations of yellow perch and other fish. Similarly, dramatic increases in water clarity have resulted in improved aesthetics and recreation use in affected waters.

What's being done?

New Jersey has a Zebra Mussel Watch program that depends on public assistance in reporting zebra mussel sightings. The New Jersey Department of Environmental Protection has formed a task force to manage and mitigate potential infestations.