

CASE STUDY 3

Zebra Mussel

ZEBRA MUSSELS are native to Eastern Europe. They generally live for four to five years and grow to 5 cm (about 2 inches) in length. The females can reproduce at around two years old and are capable of producing up to one million eggs per year. Adults survive out of water for several days if the temperature is low and humidity is high. Young zebra mussels swim freely and are spread easily by water currents. Adult mussels spread when they attach themselves to objects that have hard surfaces, such as hulls of boats. When the object is moved to a different location, the zebra mussels move with it.

Zebra mussels first appeared in the Great Lakes in 1988, most likely having been flushed into the lakes when ocean going cargo ships discharged ballast water. Zebra mussels feed by filtering algae and plankton from water, with each mussel filtering up to one liter per day. In areas where there are millions of zebra mussels, two major changes to the ecosystem have occurred: the water has become clearer, which is beneficial for some organisms but not others; and the food for native larval fish has decreased. The clearer water can benefit plants that live on the bottom of the lakes because they



Zebra mussels (Dreissena polymorpha) can clog the insides of pipes.

have more access to light and thus grow more. Fish that prefer this type of habitat have actually increased in the Great Lakes. The decrease in food for native larval fish causes fewer of the larval fish to survive, creating a food shortage for the animals that feed on these fish. Zebra mussels also attach themselves to native mussels, clams, crayfish, and turtles, sometimes in such great numbers that these organisms have trouble functioning. Several native species of fish eat zebra mussels, but not enough of them to keep the mussel populations down. Sometimes the colonies block water-intake pipes, restricting water flow and causing problems at power plants and water-supply facilities. ■