

Destroying Ecosystems

Did you know that people cause big problems in an ecosystem when they get rid of species? In Malawi, Africa, people were upset. Leopards killed their cattle and dogs. The government agreed to let farmers kill every leopard they saw. After they did so, baboons had no predators. Their population grew rapidly. Then the baboons ate the people's crops. They caused worse problems than the leopards had.

In the early 1980s the farmers in Indonesia used insecticides. They wanted to kill the brown plant hoppers that ate the rice crop. But these chemicals also killed the spiders and bees that ate the plant hoppers. (By eating the insects, the toxin built up within their bodies.) To make matters even worse, the plant hoppers developed resistance to the chemicals. Without natural predators, they grew out of control. In 1986 the Indonesian government banned insecticides. Instead it brought in bees and spiders. At last the number of plant hoppers fell. Immediately the rice harvest increased by 4.5 million tons a year.

People can damage the environment by bringing in foreign species, too. More than 30 years ago, Asian carp were imported to farms in Arkansas. They were supposed to clean algae from ponds. Flooding swept them into the Illinois River. These fish are not very tasty. And now they are destroying the food source of fish that are edible. People don't want them to spread into the Great Lakes. So there are now underwater electrical gates to keep them from entering Lake Michigan.

Even pets can cause trouble in the environment. When a pair of pet skunks escaped on an island, they wreaked havoc with its ecosystem. They ate mice, moles, and birds' eggs. The skunks also had lots of babies. Meanwhile the number of birds, mice, and moles went down. The number of owls fell, too.

People cause trouble when they ruin environments as well. This has happened with wetlands. People fill in these damp, low-lying areas to build farms, homes, and malls. But mosquitoes breed out of control when wetlands are drained. At first scientists couldn't figure out why this happened. Then they realized that rain water puddles offered mosquitoes places to breed without providing homes for the predators that eat them. A single duckling eats at least 2,000 mosquito larvae a day, but ducks can't live in puddles. To test their theory, scientists restored a 1,500-acre wetland. In a short time the mosquito population fell by 90 percent!

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Today's Environment

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Trouble in a Striped Shell

A small animal invaded the Great Lakes more than 20 years ago. Very tiny and sporting a striped shell, no one realized the significance of the first appearance in 1986. But these zebra mussels were about to change the underwater environment of the Great Lakes in a major way.

Ships cross the Atlantic Ocean, head down the St. Lawrence Seaway, and enter the Great Lakes. At least one vessel coming from the sea brought the mussels as stowaways on its hull. The zebra mussels were native to salt water and should've died in the fresh water of the Lakes . . . but they didn't. Instead they adapted and started to take over. They had no natural predators, so they reproduced at an explosive rate. They soon spread throughout all five of the Great Lakes.



Zebra mussels eat algae, which leads to clearer water. Sounds like a good thing, right? That was people's first reaction. They liked the improvement in water quality. But not for long. The water soon became so clear that sunlight could penetrate deeper than ever before. For the first time in recorded history, fish in the Great Lakes started getting skin cancer.

Removing the algae made the water more acidic, too. And to top it all off, there's so many zebra mussels that they've eaten the algae that native species needed for survival. Native fish have been dying in droves. Some species have even disappeared from the Lakes.

More than two decades later, we're still stumped by these tiny invaders. The only thing we know for sure is that they're extremely hard to eliminate. The best way to keep them from spreading is to destroy them. A recent law ensures that whenever a vessel—even a pleasure boat—is placed in dry dock, its hull must be scraped to eliminate these pests. Will it work? Only time will tell.

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1. A natural predator for mosquitoes is a
 - a. duck.
 - b. baboon.
 - c. brown plant hopper.
 - d. skunk.
2. Once the brown plant hoppers were resistant to the insecticide, the chemical
 - a. made the bugs grow bigger than ever before.
 - b. started to kill the bugs.
 - c. no longer killed the bugs.
 - d. made the bugs unable to reproduce.
3. What do you think they did in Africa to control the baboon population?
 - a. They used insecticides.
 - b. They restored wetlands.
 - c. They built underwater electrical gates.
 - d. They reintroduced a few leopards.
4. Just like the zebra mussel, the Asian carp was introduced into the Great Lakes accidentally. True or False? Explain.

5. Describe the three major problems the zebra mussels are causing for the Great Lakes.

6. Should there be stiff monetary penalties for people who knowingly bring an exotic animal into an environment or release a pet into the environment? Defend your stance.
