

2. Have the students define "niche." Give examples of the niches held by the animals and plants described in this activity.
3. Describe how wild plants and animals might be used to help solve one ecosystem problem not used in this activity.

Adapted with permission from "Career Critters" in *Ecosystem Matters* from the United States Department of Agriculture.

Answer Key to Ecosystems

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|---------------------------|---------------------|
| 1. Prairie Ecosystem | badgers |
| 2. Farm Ecosystem A | bullsnakes |
| 3. Golf Course Ecosystem | gambusia fish, bats |
| 4. Urban Stream Ecosystem | willows |
| 5. Farm Ecosystem B | meadow larks |
| 6. Stream Ecosystem A | beavers |
| 7. Pine Forest Ecosystem | woodpeckers |
| 8. Garden Ecosystem | lady bug |
| 9. Town Park Ecosystem | squirrels |
| 10. Downtown Ecosystem A | trees |
| 11. Foothills Ecosystem | plants |
| 12. Downtown Ecosystem B | peregrine falcons |

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Ecosystem Cards

#1 Prairie Ecosystem

A prairie ecosystem is near a new housing development on the edge of town. Prairie dogs live in the grassy field. With all the new houses, lots of the prairie dogs' natural enemies—coyotes and eagles—have disappeared. Now the prairie dog population is growing. The prairie dogs are digging burrows and mounds in the lawns of the new homes. They are also eating vegetable gardens and underground telephone wires. Some people are worried that the prairie dogs might carry diseases, and they want to begin poisoning the prairie dogs. As a manager, how could you help solve this problem? What animal(s) or plant(s) in the cards provided could help with this problem?

#2 Farm Ecosystem A

You are a farmer. You store large amounts of grain and hay in your barn and storage bins. The problem is that field mice have discovered the grain, and now you are overrun with them. You could set numerous mouse traps, but this is time consuming. If you set out poison, you may poison birds and other animals by mistake. What animal(s) or plant(s) in the cards provided could help with this problem?

#3 Golf Course Ecosystem

You are the manager of a golf course. You are very proud of your golf course—especially the nearby stream, ponds, and water holes on the course. One problem: there are so many mosquitoes that the golfers are starting to complain. You could spray insecticide around the course to kill the mosquitoes, but it's expensive and probably would harm other animals. What animal(s) or plant(s) in the cards provided could help with this problem?

#4 Urban Stream Ecosystem

A stream ecosystem runs through town. Most of the time there is only a little water in your stream, but when a thunderstorm hits, lots of rain falls on paved streets and parking lots. The rain can't soak into the asphalt, so it runs downhill into the stream. The stream suddenly fills with fast-moving water. This water often carries the oil and gasoline that has dripped on the asphalt from cars. The stream banks erode so trees and shrubs along the edge of the stream sometimes fall, and soil washes away. When the storm is over, the stream gets low again. It is full of dirt, sand, and other pollutants. As a manager, your job is to stop the erosion of the stream bank and to keep the stream from having big changes in the level of water. What animal(s) or plant(s) in the cards provided could help with this problem?

Copy Me**#5 Farm Ecosystem B**

You are a farmer. Your crops are turning into a field of dreams for insect pests like grasshoppers. They are eating up your crops. You could spray with insecticides to kill the grasshoppers, but they are expensive. Your field is also close to homes. The homeowners do not want the spray to drift over into their yards. What animal(s) or plant(s) in the cards provided could help with this problem?

#6 Stream Ecosystem

A stream ecosystem runs near a farm. Along the edge of the stream is a nice, green area with lots of willows and tall trees. In the spring and summer, the farmer takes water out of the stream. The water goes from the stream down an irrigation ditch to water a field of crops. As a result, the water level in the stream may drop. Small fish can live in shallow water, but bigger fish need deep, cool pools of water. What animal(s) or plant(s) in the cards provided could help with this problem?

#7 Pine Forest Ecosystem

In your pine forest ecosystem, many of the trees are being damaged by bark beetles. Bark beetles bore through bark and eat the layers of wood inside. Your forest is infested with too many beetles, and a large number of trees have been infected. As a manager, your job is to maintain a healthy forest so that a variety of animals live there. You need to reduce the number of beetles. What animal(s) or plant(s) in the cards provided could help with this problem?

#8 Garden Ecosystem

Your town has a community garden where townspeople plant vegetables. However, this year small insects called aphids are eating the vegetables. People want vegetables to eat. You could spray insecticides to kill the aphids, but some people don't want to use insecticides. They are concerned about possible health effects. The community garden has another problem: the soil is too hard and packed so roots have a hard time growing. What animal(s) or plant(s) in the cards provided could help with this problem?

#9 Town Park Ecosystem

In the town park, some of the old oak trees are dying. They need to be replaced by young oak trees. Of course, that project would need funding. What animal(s) or plant(s) in the cards provided could help with this problem?

#10 Downtown Ecosystem A

Downtown becomes very hot in the summer. The sun shines on the sidewalks and asphalt streets and directly into the windows of buildings. People turn on air conditioning, which uses electricity and indirectly creates air pollution. The pollution makes being outside even more miserable. What animal(s) or plant(s) in the cards provided could help with this problem?

#11 Foothills Ecosystem

On the hills at the edge of town, many houses were going to be built. The bulldozers scraped the ground and plowed the dirt roads to get ready for the new construction. But the construction project was suddenly called off. The soil is now being blown away by the wind and washed downhill into the stream by rainstorms. What animal(s) or plant(s) in the cards provided could help with this problem?

#12 Downtown Ecosystem B

There are many pigeons downtown. They nest on the ledges of buildings. Some people like the pigeons, but others say there are just too many. Their droppings make certain areas really dirty, and the birds may carry diseases. What animal(s) or plant(s) in the cards provided could help with this problem?