

# Changes in Biodiversity

by ReadWorks



Hundreds of years ago, before North America was split up according to states and countries, native populations lived in the many varied areas of the continent. There were jungles, forests, riverlands, dry prairies, wetlands, and many other types of geographies where people lived. There were no cities as we know them today: humans lived in tune with nature, relying on their surroundings to build shelters, hunt and gather food, and create forms of exchange (for example, shells found on beaches could be traded for animal skins).

Each Native American tribe was attuned to the specific land on which they lived, and had certain customs that utilized their land to the utmost. Native Americans living in what is now known as the Midwest relied on hunting large animals like bison for their meat and their skins. Their meat provided an important source of nourishment for many tribes, and their skins were a valuable material that was used in the production of clothes and teepees, a type of shelter. Other tribes who lived on the eastern coast of North America made extensive use of the forests there, trapping small animals and game (like deer) that lived among the trees, and farming hearty foods that could handle the changes in weather, like corn. Still other tribes, who lived in the deserts of what is now Arizona, built homes in the rocky cliffs and hills for protection.

The variety of plant and animal life in these specific environments is called biodiversity. The tribes who lived in what is now known as Seattle fished salmon, while the tribes who lived in what is now known as Maine caught crabs and lobsters. As you can see, even though each group relied on seafood, the type of fish they ate was dependent on the type of fish that was available to them. At the time we are thinking about, if you lived in Seattle, there were no restaurants you could go to and order lobster!

Now think for a moment about what this means. Let's say one year, a pod of whales was unable to go to their usual feeding area in Alaska because a school of sharks was inhabiting those waters during the whales' feeding time. So, looking for other sources of food, the whales swam down

towards Seattle and noticed a large population of salmon. They ate all the salmon and, full and content, swam away to their next destination. The next week, the human tribes living in Seattle go to where the salmon usually are in order to get the first big catch of the season, and they find that no salmon are there. Instead of catching salmon, a staple of their diet, the humans must find another food source: their habitat has changed, and now the humans, like the whales before them, must adapt to their new situation.

This brings us to the very important idea of the ecosystem. An ecosystem is a very complex and delicate arrangement of plants and animals that provide nourishment for each other in a variety of ways. If one part of the ecosystem changes or is disrupted, it can affect the entire workings of an environment.

Humans have made changes to their ecosystems to serve a specific need. And in certain cases, the goal is to disrupt the population of another species within the ecosystem. However, there can be unintended consequences. One example is the use of pesticides. When American farmers began using pesticides (chemical insect-repellants) to get rid of bugs that decimated entire harvests of crops, they had no idea what the consequences would be-or whether there would be any consequences. As scientists began to study how people used certain types of chemicals for certain types of crops, they learned that there are some pesticides that are not just harmful for insects-they are harmful for humans too, and were making many people sick after they had eaten the crops that had been sprayed with those pesticides. With this knowledge, scientists were able to develop other pesticides that were less harmful for humans but were still useful in getting rid of the bugs that liked to eat humans' important crops. As you can see, the changes that humans made in the ecosystem-the biodiversity that the humans cut down on by making sure the insects left the plants alone-needed to be studied carefully so that the changes made were sure to be beneficial.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. What does biodiversity refer to?

- A. chemical replants that are used to get rid of bugs
- B. the scientific study of an ecosystem
- C. the variety of plant and animal life in an environment
- D. the large population of salmon that live near Seattle

2. What does the author explain in the passage?

- A. the author explains the terms "biodiversity" and "ecosystem," giving examples of each
- B. the author explains the terms "tribe" and "Native American" without giving any examples
- C. the author explains the terms "pod," "school," and "wetlands," giving two examples of each
- D. the author explains the terms "nourishment" and "chemical" without giving any examples

3. Changing one part of an ecosystem can affect other parts of the environment where the change is made.

What evidence from the passage supports this statement?

- A. Native Americans who lived in what is now known as the Midwest hunted large animals like bison.
- B. Tribes who lived in the deserts of what is now Arizona built homes in the rocky cliffs and hills.
- C. When American farmers began using pesticide to harm bugs, they harmed humans as well.
- D. Tribes on the West Coast of North America fished salmon, while tribes on the East Coast caught crabs and lobsters.

4. Based on the information in the passage, what can the reader conclude about biodiversity?

- A. There was very little biodiversity in North America before it was split up into states and countries.
- B. There was a lot of biodiversity in North America before it was split up into states and countries.
- C. Biodiversity cannot be affected by human activity.
- D. Biodiversity cannot be affected by changes to the ecosystem.

5. What is this passage mainly about?

- A. different Native American tribes and the ways in which they obtained food
- B. natural environments and the way changes can affect those environments
- C. pesticides used by farmers and the harmful effects of those pesticides on humans
- D. a pod of whales that cannot go to its usual feeding area in Alaska because of sharks

6. Read the following sentences: "An ecosystem is a very complex and delicate arrangement of plants and animals that provide nourishment for each other in a variety of ways. If one part of the ecosystem changes or is disrupted, it can affect the entire workings of an **environment**."

What does the word **environment** mean?

- A. a species of plant or animal
- B. a group of Native Americans living in the same place
- C. the damage that humans can do to their surroundings
- D. an area where things live

7. Choose the answer that best completes the sentence below.

Native Americans living in what is now known as the Midwest hunted large animals; \_\_\_\_\_, Native Americans living on the eastern coast caught small animals.

- A. on the other hand
- B. as a result
- C. as an illustration
- D. most importantly

8. What happened when American farmers started using pesticides to get rid of bugs?

9. According to the passage, how could a pod of whales being unable to go to their usual feeding area affect humans? Be sure to describe the full chain of events in your answer.

10. Suppose that people living by a lake decided to put a chemical in the water to get rid of a certain type of fish in the lake. Would that action be likely to affect other living things in that environment? Use evidence from the passage to explain why or why not.