

Name: _____ Class: _____

What Good is the Big Bad Wolf?

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In Banff National Park, wolves and elk have largely separated into two different areas. By studying these two species in separate areas, scientists can determine the effect that the presence and absence of wolves can have on the surrounding environment. As you read, take notes on how elk respond to the absence of wolves.

- [1] One by one, Stoney, Betty, and the other wolves in their pack trudged¹ down a snowy bank into the bone-chilling waters of the Cascade River. The wolves had not eaten anything for several days. Now, dinner was waiting across the water. They could smell it. In silence they moved, dripping in the darkness.

While the wolves trailed their next meal through Banff National Park in Canada, scientists were coming to track the wolves. At daybreak, Dr. Mark Hebblewhite and his co-workers drove through the valley to the base of the Rocky Mountains. Hebblewhite has been studying wolves for years and is now a scientist at the University of Montana.

Over 15 years, the researchers had trailed the wolves on cross-country skis or snowshoes. They trekked among pine trees and jagged snow-capped peaks. At times, the tracks ended at a river, where crossing wasn't always possible. Sometimes, the threat of crashing snow forced the scientists to turn back.

"Avalanches can kill people and wolves," Hebblewhite said.

- [5] But in time the research team learned where the wolves went and how many elk they ate.



"What Good Is the Big Bad Wolf?" by Gary Kramer/U.S. Fish and Wildlife Service is used with permission.

A Natural Experiment

Banff National Park is the site of a "natural experiment" that shows the role that a predator² can play in its habitat.³ The experiment was set up by accident. In fact, it began when people tried to kill off wolves.

1. **Trudge (verb):** to walk slowly and with heavy steps
2. an animal that lives by killing and eating other animals
3. the natural home or environment of an animal, plant, or other organism

Wolves cause problems for farmers and ranchers. But over many years, the predators' reputation became worse than they deserved. In legends and folklore, wolves blew down houses and ate grandmothers, too. They were blamed for a disease they didn't spread. "Many people hated wolves," said Hebblewhite.

People began to kill wolves. In fact, until 1969, killing wolves was part of every warden's⁴ job in the park. Soon any wolves that had survived had left the park.

But wolves can travel long distances, and by 1986, wolves from other areas had begun to move into the park.

- [10] Time had changed the town of Banff, which is in the middle of the park. The town had grown much bigger. Elk roamed freely in the town and park, but when the wolves came back, very few wolves went near the town. Most chose wilderness areas.

Now scientists could compare two types of areas, just as they might in an experiment that they had set up themselves. In the town, they could see what happened in a habitat that had lots of elk but almost no wolves. In the wild areas, they could study what happened to that same kind of habitat as wolves moved in and began to hunt the elk.

Up and Down the Food Chain

Why study these habitats — one with wolves and one without? To learn more about food chains.⁵

Scientists already know how energy moves up a food chain. Plants (such as the aspen and willow trees) capture energy from sunlight and use it to make their food. Plant eaters (such as elk) eat the plants, taking the plants' food energy. Then meat eaters (wolves) eat the plant eaters, taking in energy that was once sunlight.

But plants, elk, and wolves are not the only living things in these habitats. Songbirds and beavers also use the trees that the elk eat. The scientists wanted to know more about how meat eaters at the top of a food chain affect plants and other animals in the park. In other words, do wolves help keep nature in balance?

- [15] For 15 years after wolves had returned to the park, the research team studied the two kinds of habitat. They measured willow twigs and examined young aspen trees. Every winter they hovered in helicopters, counting elk. They also tracked five wolf packs.

The research team discovered that the food chain was out of balance in the town. Without wolves to prey on the elk, the elk herd had grown out of control. Elk roamed in the roads, grazed in gardens, and ripped through aspen and willow trees like a river overflowing its banks. Many trees died.

Warblers⁶ nest in willow trees. As the trees died, many songbirds vanished.

Beavers use willows to build their homes. As the trees died, there were fewer beaver dams.

4. a person who is in charge of something

5. a series of living things which are linked to each other because each feeds on what follows it in the series

6. a type of bird

The Good Wolf?

But in wild areas, the habitats looked different. Where the wolves lived, they ate some of the elk. Now there were fewer elk to eat the trees. As more trees survived, more beavers and warblers came back and built lodges and nests.

- [20] The answer was clear. Wolves kept the food chain and the habitat in balance. “Wolves affected elk, which influenced plants like aspen and willow, which had impacts on birds and beavers,” said Hebblewhite.

Now it seems that the wolf never deserved its old reputation for being “big and bad.” As this study and many others show, the wolf plays an important role in its habitat.

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Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. PART A: Which statement best expresses the main idea of the text?
 - A. People do not need to hunt wolves because, when the wolves were separated from the elk, their population declined rapidly as many starved to death.
 - B. Wolves are not as bad as people think because, without wolves, the populations of elk grow out of control and negatively impact other species of plants and animals.
 - C. Scientists intentionally separated the wolves and elk to see how each species would be affected as a means of determining a solution to a wolf problem.
 - D. An experiment was able to determine that wolves and elk do better separately and can live and eat without impacting the other, so wolves can be kept out of the town.

2. PART B: Which detail from the text best supports the answer to Part A?
 - A. "The wolves had not eaten anything for several days. Now, dinner was waiting across the water. They could smell it." (Paragraph 1)
 - B. "In the town, they could see what happened in a habitat that had lots of elk but almost no wolves." (Paragraph 11)
 - C. "But in wild areas, the habitats looked different. Where the wolves lived, they ate some of the elk. Now there were fewer elk to eat the trees." (Paragraph 19)
 - D. "Wolves affected elk, which influenced plants like aspen and willow, which had impacts on birds and beavers" (Paragraph 20)

3. PART A: Which statement best describes the relationship between elk and songbirds and beavers in the text?
 - A. Elk eat the plants that songbirds and beavers also eat.
 - B. Without elk, wolves prey on songbirds and beavers.
 - C. Elk eat the trees that songbirds and beavers rely on for shelter.
 - D. Without elk, plant life grows out of control and can't be used by songbirds or beavers

4. PART B: Which quote from the text best supports the answer to Part A?
 - A. "But plants, elk, and wolves are not the only living things in these habitats. Songbirds and beavers also use the trees that the elk eat." (Paragraph 14)
 - B. "Plants (such as the aspen and willow trees) capture energy from sunlight and use it to make their food. Plant eaters (such as elk) eat the plants" (Paragraph 13)
 - C. "Elk roamed in the roads, grazed in gardens, and ripped through aspen and willow trees like a river overflowing its banks. Many trees died." (Paragraph 16)
 - D. "Now there were fewer elk to eat the trees. As more trees survived, more beavers and warblers came back and built lodges and nests." (Paragraph 19)

5. Reread the quote “Elk roamed in the roads, grazed in gardens, and ripped through aspen and willow trees like a river overflowing its banks” (Paragraph 16). What does the quote reveal about the author's point of view? Use evidence from the text to support your answer.
