

# Animal Survivors

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# **Ice Age Animals:** **Why Some Survived . . .** **But Most Did Not**





A woolly mammoth is shown in a snowy, mountainous landscape. The mammoth has thick, brown, shaggy fur and long, curved tusks. It is facing towards the right of the frame. The background consists of snow-covered ground and distant, hazy mountains under a pale sky. A large, red, diagonal watermark reading "For Review Only" is superimposed over the image, starting from the bottom left and extending towards the top right.

Imagine living at a time when the land was frozen and little grew. Imagine living where the temperature was below freezing every day. That's what it was like during the Great Ice Age. The Ice Age started over 2 million years ago and ended 11,500 years ago.

During that time, half of North America was covered by giant sheets of ice. According to the National Geographic Society, those ice sheets were more than 3 kilometers (about 2 miles) thick. Many large animals called **megafauna**<sup>1</sup> roamed the earth then. Some Ice Age animals such as the cougar and musk ox are still found in the wild today. Most Ice Age animals, however, including the saber-toothed tiger and woolly mammoth, died off.

## The Basic Needs of All Animals

To survive, every animal on Earth needs food, water, and shelter. The environment, or habitat where they live, gives animals their basic needs. Sometimes, an environment changes. The temperature might get warmer or colder over time. A food source can disappear. Even the physical characteristics can change. For example, forests are destroyed. Rivers dry up. Due to these changes, some animals move to new places. Others adapt and survive. Some can't adapt and die.



## The Disappearance of Ice Age Animals

Scientists are not sure why most of the large animals on Earth died off by the end of the Great Ice Age. Here are some possible causes:

### Change in the Weather

Beginning about 50,000 years ago, Earth went through periods of warming up. Then, just as quickly, it would cool down. The megafauna adapted to the cold periods. But during the warming periods, reports *Scientific American* magazine, forests replaced grasslands. With their usual food source gone, some megafauna died off.

1. megafauna—large animals; from the Greek word *mega*, meaning “large,” and the Latin word *fauna*, meaning “animal”





Some scientists believe megafauna extinction began 12,000 years ago after a three-mile-wide comet exploded over southern Canada.

## Humans

By the end of the Great Ice Age, humans were learning to hunt. Beth Shapiro teaches biology at Penn State University. She says it is likely that people “kept the megafauna from surviving.” In addition to killing these large animals, humans hunted the smaller animals that the large animals ate.

## A Natural Disaster

Richard Firestone is a scientist at the Berkeley Lab. In 2007 he and other researchers presented a new idea of what wiped out megafauna. They believe a comet<sup>2</sup> exploded over southern Canada. Huge

wildfires spread across most of the Northern Hemisphere as a result.

After the fires died out, plants could not grow on the land. The large animals did not have enough to eat.









2. comet—an object in space made of ice and dust. When it passes by the sun, it grows a bright “tail.”



## Ice Age Losers and Winners

The woolly mammoth, ground sloth, and many other mammals did not survive the Ice Age. They became extinct. The chart below tells about some of these species. It tells why they died off. Then read about four Ice Age animals that are still around.

| ICE AGE ANIMAL   | ABOUT THE ANIMAL  | CAUSES FOR EXTINCTION  |
|--|---|--|
| <br>American cave lion      | one of the most feared large predators; could take down much larger animals   | decline of food source; human hunters                            |
| <br>giant short-faced bear | largest meat-eating land animal in North America                              | explosion of a comet caused wildfires and destroyed food sources |
| <br>woolly rhino          | large, heavy animal with thick, shaggy hair and two horns on its nose         | climate change; disease; human hunters                           |
| <br>woolly mammoth        | huge, hairy, elephant-like mammal with tusks up to 4 meters (13 ft.) long     | disease; human hunters; natural disaster                         |
| <br>giant ground sloth    | an ancient sloth as big as today's elephant                                   | human hunters; disappearance of natural habitat                  |
| <br>saber-toothed tiger   | one of six species of big cats that lived in North America during the Ice Age | lost its primary food source; didn't adapt to new food source    |





The upper teeth of the saber-toothed tiger were up to 18 centimeters (7 inches) long.



The upper teeth of a jaguar are about 5 cm (2 in).

## Cougar and Jaguar

Dr. Larisa R. G. DeSantis studies the big cats of the Great Ice Age. Six species of large cats roamed the plains and forests of North America then. Only the cougar and jaguar survived.

“They were not picky eaters,” explains Dr. DeSantis. Their teeth were sharp and strong. So they were able to eat flesh and bones of many different prey.

The saber-toothed tiger’s teeth, by comparison, “were brittle,” adds Dr. DeSantis.

“They would break easily. Therefore, the saber-toothed tiger needed to eat mostly tender meat. They favored mastodons—huge, hairy elephants.”

By the end of the Great Ice Age, though, saber-toothed tigers’ food source was disappearing. They were not able to adapt. They did not change their diet. So saber-toothed tigers did not survive.