MAIN IDEA

Species can become extinct.

FIGURE 6.4 Native to Portugal and Spain, the Iberian lynx is the world's most endangered feline. The World Wildlife Federation estimates that there are only 84 to 143 adult individuals remaining in the wild.

Just as birth and death are natural events in the life of an individual, the rise and fall of species are natural processes of evolution. The elimination of a species from Earth is called **extinction.** Extinction often occurs when a species as a whole is unable to adapt to a change in its environment. Biologists divide extinction events into two categories—background extinctions and mass extinctions. Although they differ in degree, the effect of both is the same: the permanent loss of species from Earth.

Background Extinctions

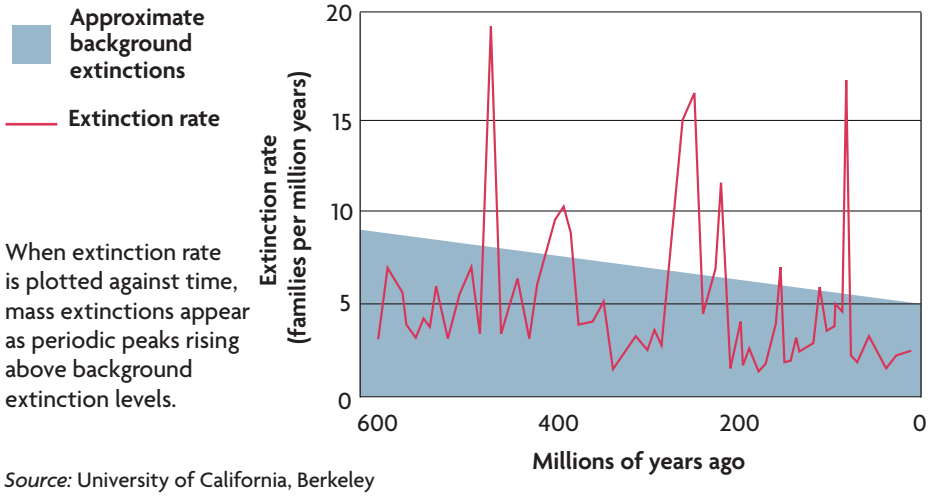
Extinctions that occur continuously but at a very low rate are called background extinctions. They are part of the cycle of life on Earth. Background extinctions occur at roughly the same rate as speciation. Unlike catastrophic mass extinctions, background extinction events usually affect only one or a few species in a relatively small area, such as a rain forest or a mountain range. They can be caused by local changes in the environment, such as the introduction of a new predator species or a decrease in food supply. From a human perspective, such extinctions seem to occur randomly but at a fairly constant rate.

Mass Extinctions

Mass extinctions are much more rare than background extinctions. However, as illustrated in **FIGURE 6.5,** they are much more intense. These events often occur at the global level. Therefore, they destroy many species—even entire orders or families. Mass extinctions are thought to occur suddenly in geologic time, usually because of a catastrophic event such as an ice age or asteroid impact. The fossil record confirms that there have been at least five mass extinctions in the past 600 million years. Some scientists also think that we are in the midst of a sixth mass extinction that has been caused by human impact on the biosphere.

Compare and Contrast **What are the differences and similarities between background extinctions and mass extinctions?**

FIGURE 6.5 EXTINCTION RATES THROUGH TIME



Source: University of California, Berkeley