

Chapter 5

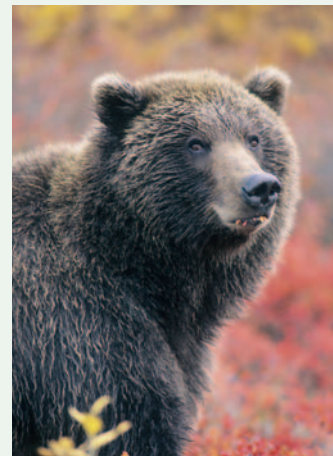
POPULATION DYNAMICS—ABUNDANCE IN SPACE

IN THE NEWS

Grizzly bears in North America represent two views of how humans fit into natural ecosystems. On the one hand, grizzly bears are hunted by sportspeople, whose activities are an important economic benefit to outfitters and other businesses in rural areas of Alaska and western Canada. On the other hand, grizzlies are a conservation icon—the embodiment of a wilderness ideal that many North Americans want to preserve for their children. In 2001–2003, these two views were on opposite sides of a heated public controversy over the abundance of grizzly bears in British Columbia. One side argued that there were at least 14,000 grizzlies in the province, so some hunting could be sustained. The other side maintained that the grizzly bear population was only 6,000, so all hunting should be stopped. The controversy boiled over in newspapers, and both sides put pressure on the government to accurately estimate the abundance of grizzly bears in the province.

One common method for estimating the abundance of a population of animals is the mark–recapture technique, which we will discuss in section 5.1. This method has not traditionally been applied to grizzly bears because they are relatively secretive animals that live at low density in thick forests, so capturing them is difficult. Recently, however, wildlife ecologists have used DNA fingerprinting to identify individual bears based on hair samples. The samples are collected from a barbed-wire fence surrounding a pile of logs soaked in rancid fish oil, which attracts the bears. This variation of the mark–recapture technique allows the ecologists to recapture evidence from specific individuals without ever seeing or handling them.

Population estimates based on DNA fingerprinting indicate that grizzly bears are more numerous in British Columbia than either side in the controversy previously thought—the whole province contains about 15,000 grizzlies. Therefore, it is likely that hunting can continue in areas where the bears are common without threatening the grizzly bear population with extinction.



Female grizzly bear