

# What Is an Ecosystem?

The Khutzeymateen [K'TZIM-a-deen] Valley (**Figure 1**) is a large, undisturbed area of wilderness in one of British Columbia's coastal rain forests. The valley is a traditional hunting and fishing area for the Gitsiis people. It is an area of high rainfall, with rugged mountains, creeks, and a large river than runs down to the ocean. “Khutzeymateen” is a Tsimshian [SIM-she-an] word that means “a confined space for salmon and bears.” The Khutzeymateen Valley is home to more than 50 grizzly bears. In 1994, it became the first grizzly bear sanctuary (protected area) in Canada. It is also home to salmon, beavers, wolves, otters, birds, insects, trees, shrubs, and many other living things. All these living things depend on the environment for survival.



**Figure 1**

Khutzeymateen Provincial Park provides a protected area for grizzly bears.

## ► LEARNING TIP

Important vocabulary words are highlighted. These are words you should learn and use when you answer questions. These words are also defined in the glossary at the back of this book.

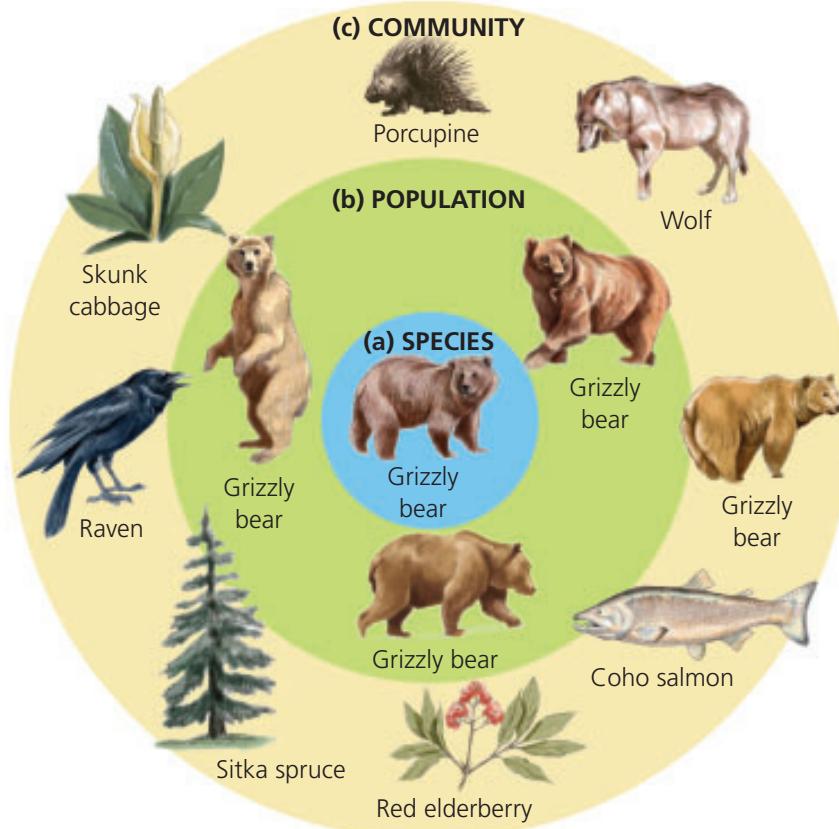
## ► LEARNING TIP

It is easier to remember scientific terms if you understand the root words. The Greek word *micro* means “small.” Therefore, micro-organisms are simply small organisms. Can you think of other science words that start with “micro”?

# The Living Environment

The Khutzeymateen Valley has both living and non-living parts. The living parts, such as plants and animals, are called **organisms**. Some of the organisms, such as bacteria and the tiniest algae, are too small to be seen with your eyes only. Organisms that are too small to be seen without the help of a microscope are called **micro-organisms**.

Each different type of organism—plant, animal, or micro-organism—is known as a species. Grizzly bears are a **species** (**Figure 2(a)**). All the members of one particular species in a given area, such as the Khutzeymateen Valley, are called a **population**. For example, all the grizzly bears in the Khutzeymateen Valley form a population (**Figure 2(b)**). When two or more populations of different species live in the same area, they form a **community** (**Figure 2(c)**). The community in the Khutzeymateen Valley includes populations of grizzly bears, coho salmon, red elderberry, Sitka spruce, and ravens.



**Figure 2**

A nested circle diagram shows how parts fit into a whole. Each species is part of a population, and each population is part of a community.

# The Non-Living Environment

The non-living parts of the Khutzeymateen Valley include the sunlight, rain and snow, soil, creeks and rivers, mountains, and temperature (**Figure 3**). These non-living parts of the environment provide many of the things that the organisms need to survive. Plants need soil, water, and sunlight. Animals need water, shelter, and an appropriate temperature range.



**Figure 3**

What non-living parts of the Khutzeymateen Valley can you identify in this photo?

The living parts of the Khutzeymateen Valley interact with each other and with the non-living parts of their environment. A grizzly bear eating red elderberries is an interaction between two living parts of the environment. Rain washing away soil is an interaction between two non-living parts of the environment. Sitka spruce trees using sunlight to grow is an interaction between a living part of the environment and a non-living part. The network of interactions that link the living and non-living parts of an environment is called an **ecosystem**.

## CHECK YOUR UNDERSTANDING

1. List some living parts of the Khutzeymateen Valley on one side of a page in your notebook. List some non-living parts on the other side of the page. Draw lines to show interactions between the living and non-living parts of the ecosystem.
2. Choose a wild animal species in the Khutzeymateen Valley ecosystem. Draw and label a nested circle diagram like **Figure 2** to show this species in its population and community. Label your diagram using the terms “species,” “population,” and “community.”
3. Describe an interaction between two living parts of the environment and two non-living parts.

## LEARNING TIP

Do not guess. Look back through the section to find the answers. Even if you remember the answer, it is a good idea to go back and check it.