

# 9.3

## Why Do People Explore Extreme Environments?

### LEARNING TIP

Before you read section 9.3, see if you can answer the question in the title at the top of the page. As you read, check to see if your answer was correct.

Why would anyone want to go to the cold polar regions, hot deserts, deep oceans, dangerous volcanoes, or even space? After all, these are harsh places for humans to live. But as long as humans have existed, they have gone on **explorations**, or voyages into unknown territory to investigate new frontiers and to search for new discoveries. Let's look at some of the reasons people explore extreme environments.

### Exploring to Find New Places to Live

As populations grew, ancient peoples explored to find new places to live. They also explored to find food, water, and other resources. Today, people explore to learn about the world and the universe, rather than to find a new place to live. However, some scientists and politicians talk about having a human colony on the Moon or Mars some day.

### TRY THIS: LOOK AT KWADAY DAN TS'INCHI

**Skills Focus:** observing, inferring

Ancient peoples faced danger when they travelled away from their home settlements. In 1999, the frozen remains of a male Aboriginal, from about 500 years ago, were discovered in a glacier in British Columbia. The discovery was named Kwaday Dan Ts'inchi, which means "long ago person found" in the Southern Tutchone language. Scientists and members of the Champagne and Aishihik First Nations are studying the remains and the items that were found with him. These items include a carved walking stick, a knife-like tool in a hide and fur sheath (**Figure 1**), a fur robe, a woven hat, a bead on a thong, and dried salmon.

1. Look at the list of items that were found near the frozen remains of the long ago person. What do you think he was doing? What are some of the dangers he might have faced?
2. Why would dried salmon be a good thing to carry?
3. What can we learn from the man's possessions?



**Figure 1**

This knife-like tool was found with Kwaday Dan Ts'inchi, along with the hide and fur sheath that held it.

## Exploring to Understand Our Past

We explore extreme environments to learn about our history, the history of other living things, and the history of Earth itself. For example, deep-sea divers look at the remains of shipwrecks (**Figure 2**). Paleontologists [PAY-lee-on-TALL-uh-jist] look for fossils of extinct creatures. Archeologists [ARE-key-ALL-uh-jist] study ancient civilizations to understand how people lived in the past. Scientists study the layers of ice in Antarctica to learn how Earth's atmosphere has changed over time.

## Exploring to Find New Plants and Animals

When explorers travelled to new lands, they often found plants and animals that were different from the plants and animals at home. Today, we explore extreme environments to discover new species of plants and animals. For example, scientists have discovered new species of corals and sponges on the ocean floor (**Figure 3**). Scientists have also discovered life in volcanic vents, in hydrothermal vents on the ocean floor, and in desert rocks.



**Figure 2**

A diver explores a shipwreck off the coast of Florida.



**Figure 3**

Scientists hope that species of sponges and corals, newly discovered on the ocean floor, may be used to develop medicines to treat human diseases.



## ▶ LEARNING TIP

Some terms in this unit, like *fossil fuel* and *insulator*, are used in other units in this book. Use the index at the back of the book to find other mentions of a word. Or look the word up in the glossary if it is defined in another unit.

## Exploring to Find Resources

The ocean beds contain vast reserves of fossil fuels, such as natural gas and oil (**Figure 4**). We use fossil fuels to power our cars, heat our homes, and produce electricity. Because the current reserves of fossil fuels are running out, scientists are looking for new reserves. Ocean exploration has led to the discovery of fossil fuel reserves beneath the ocean floor. The Arctic is another environment that is being explored for its fossil fuel reserves.



**Figure 4**

Semi-submersible oil rigs, like this one in Hibernia, are used to drill for oil in the ocean floor.

## Exploring to Understand and Protect Our World

In the past, explorers searched for new lands and easier sea routes. Today, people explore to understand and protect our world. For example, scientists have been able to track elephants moving through the Sahara Desert using satellite images (Figure 5). They have learned that these elephants survive the hot, dry desert by moving from one watering hole to the next at just the right time. Scientists can use this knowledge to protect the elephants.



**Figure 5**

By tracking the movements of these elephants through the desert, scientists can learn how to protect them.

### **CHECK YOUR UNDERSTANDING**

1. Why did ancient peoples explore?
2. Use a Venn diagram to compare the reasons why ancient peoples explored with the reasons why people explore today.
3. Give an example of how satellite images can help scientists protect endangered animals.
4. Work with a partner to brainstorm a list of explorations you know about from previous learning. In each case, try to identify the reason for the exploration.