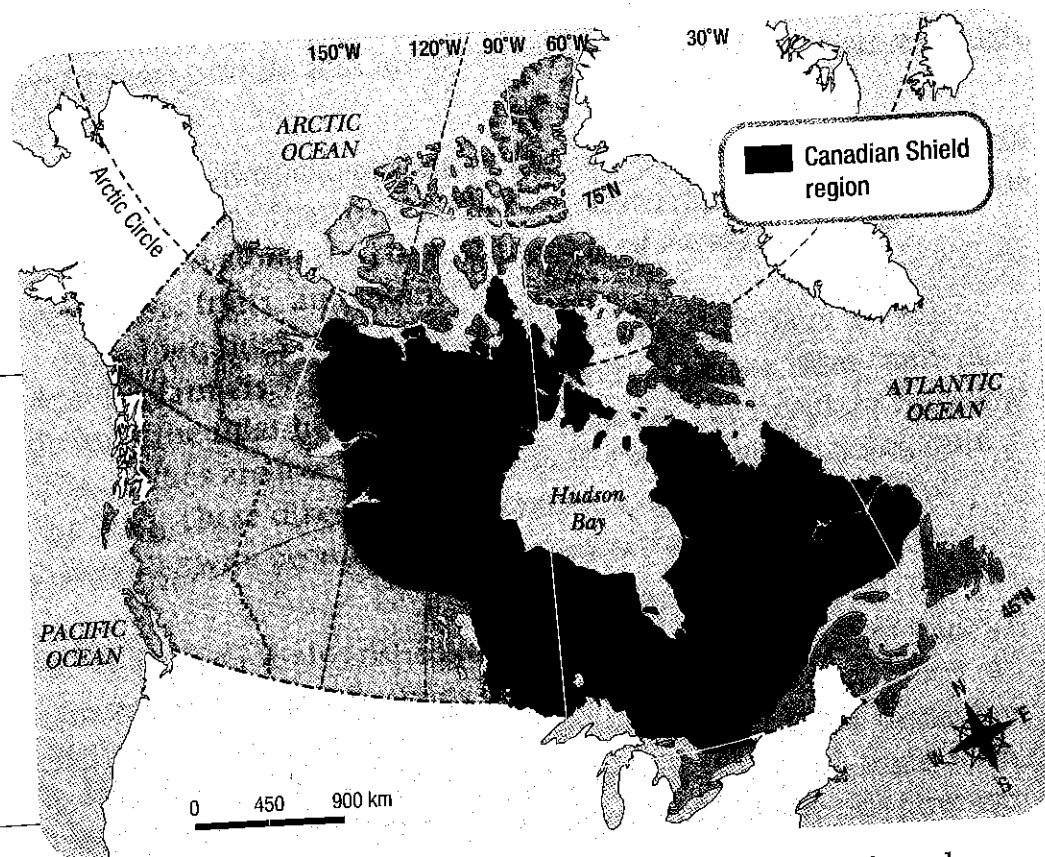


# The Canadian Shield Region —a Resource Storehouse

## Predict

What would it be like to live in a land of rock with a wealth of natural resources?

This is the Canadian Shield region. Parts of which territories and provinces are in this region? Based on this map, between what two lines of latitude does most of the region lie?



The Canadian Shield region is the largest region in Canada. It covers over half the area of Canada, but it has only 10 per cent of the total population.

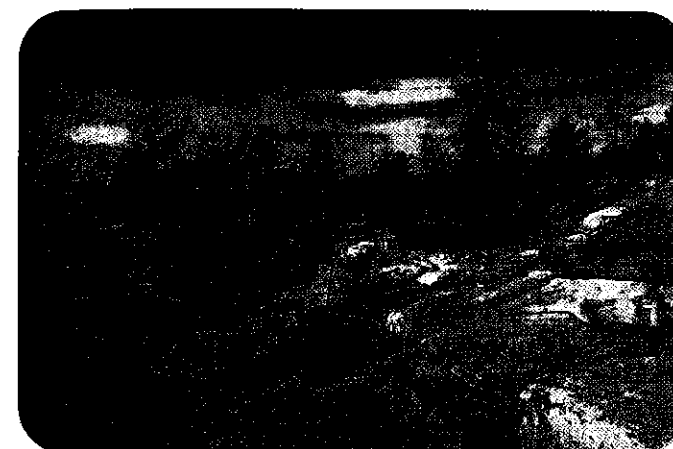
The Canadian Shield region contains a wealth of natural resources, which is why it is referred to as a "storehouse." A storehouse is a place where things are kept. Why do you think people use this description for the Shield region?

## Chapter Focus

- What makes the Canadian Shield region unique?
- How do people use the large network of rivers and lakes?
- How does the climate shape ways of life?
- What is life like in a region rich in natural resources?
- What are some challenges in managing resources?

## What Makes the Canadian Shield Region Unique?

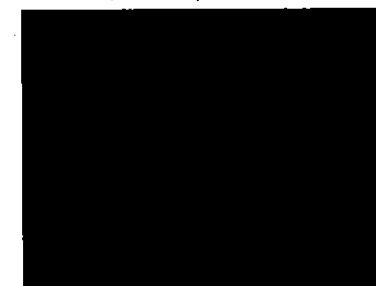
The Canadian Shield region is unique for its vast exposed area of ancient rock. Many millions of years ago, this region was a mountainous area with much volcanic activity. Over the ages, glaciers, water, and wind wore away these mountains. Today, most of the region is plateaus and uplands. A **plateau** is a high, flat area that is surrounded by mountains or cliffs.



The rockiness of the Shield region can be seen in this photograph of Killarney Provincial Park, just north of Georgian Bay, Ontario.



There are also lowlands in this region. The largest of these is the Hudson Bay Lowland. It is also a wetland. A **wetland** is an area of wet, marshy land. Wetlands help filter pollution and stop erosion.



## SKILLS at Work

Start a Venn diagram comparing the Canadian Shield region to the Great Lakes–St. Lawrence Lowlands region. Add to the diagram as you learn more.



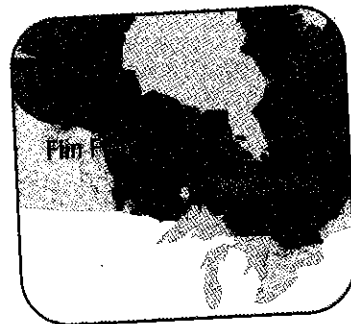
There are two mountainous areas in the Canadian Shield region. They are the Laurentian Mountains in Québec and the Torngat Mountains in Labrador.

## Pause

1. How are the Canadian Shield and the Great Lakes–St. Lawrence Lowlands regions different from each other in size and population?
2. By looking at the photographs on this page, explain what some of the challenges would be in creating settlements in this region.

## Living on the Land

The Canadian Shield region is either bare rock or has a thin layer of soil. Living on rock can create difficulties that are not found in other regions of Canada. For example, constructing roads and buildings can be a challenge. The rock also makes it difficult to put in underground pipes, which are needed for services, such as water and sewage.



Flin Flon, Manitoba, solved the problem of digging sewer lines by running its lines above ground. Boxes were built around the lines and used as sidewalks. The boxes were once filled with wood shavings to keep the lines from freezing, but today the water running through the pipes is heated.

The town of Moosonee, Ontario, is built near one of the biggest muskeg areas in Canada. The soft muskeg makes it difficult to build roads. The only roads around Moosonee are in town. In winter, the muskeg freezes over to form a winter road to northern communities. However, for the rest of the year, to get into or out of the town, people must travel by water or air. How do you think air and water transportation affect the prices of goods and travel? Why?



### Pause

1. What differences do you see between the Canadian Shield region and the Great Lakes-St. Lawrence Lowlands region?
2. Do you think farming is a main industry in this region? Why?

## How Do People Use the Large Network of Rivers and Lakes?

Because of the rock base of the Canadian Shield, water has been trapped in the many craters and gouges left by the glaciers. There are millions of lakes, ponds, rivers, and streams in this region. When flying over the region, you can see long, narrow lakes and ridges that show the direction that the glacier moved as it scooped out the Earth. Streams and rivers, speckled with rapids and waterfalls, twist and turn along the valleys.

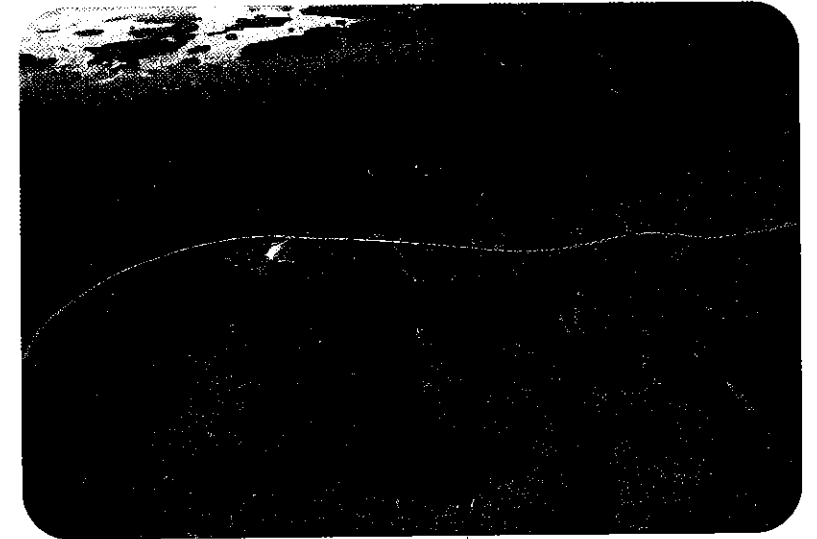
At one time, these lakes and rivers were the highways. Aboriginal peoples and European fur traders used them for transportation. Today, and throughout the past century, these rivers have been a source of hydroelectric power. This power source has played a major role in the development of the region.

In this 1918 photograph, a Dene Sųliné (de-nay soong-lin-ay) man and woman are duck hunting on Garson Lake, northern Saskatchewan. First Nations peoples, including the Dene Sųliné, knew well the network of rivers and lakes. When European explorers came to this region, many First Nations people acted as guides for the explorers.



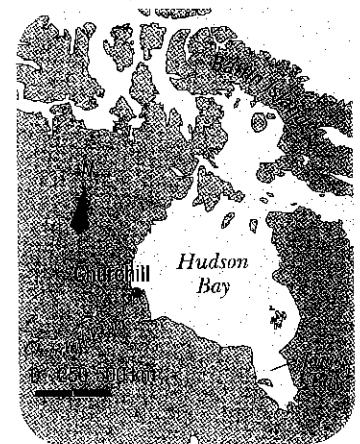
### Hudson Bay and James Bay

Explorers and traders sailed deep into central Canada by way of Hudson Bay and James Bay. These two bays are the largest bodies of water in the world that freeze over in the winter and become ice-free in the summer. Towns on Hudson Bay, such as Churchill, Manitoba, began as fur trading posts. Goods going to or coming from Europe sailed into these posts. Today, there are no roads into Churchill, but goods are shipped there by air or rail. Barges or ships then carry the goods to communities in the north and around the world. This makes Churchill an important northern seaport.



There is a large system of rivers and lakes in the Canadian Shield region. Pictured here is Lake of the Woods, Ontario. How do you think this region's water system made it easier to travel in this region in the past? How might it have made it more difficult?

### Two Important Bays



## Samuel Hearne and the Coppermine River



Samuel Hearne carried a map of the region with him. When he first set out, the map was blank except for the outline of the west coast of the Hudson Bay and the little bit of land around it. Hearne filled in the map as he and his companions walked through the bush.

### CONNECT

Have you ever used a map to find your way somewhere? What challenges do you think there would be to travelling somewhere without a map? How would you find your way? What are some ways that people can find directions without a map?

In the mid-1600s, no European had travelled into the Canadian Shield west of Hudson Bay. When Dene Sųliné traders came to Fort Prince of Wales on Hudson Bay, they brought copper. (See the map on page 141 for the location of Fort Prince of Wales.) They told of a river, the Coppermine River, where the copper was found. An English explorer, Samuel Hearne, went to find this river.

Hearne and his companions set out on foot. Hearne failed on this first journey, and again on a second. However, on a third attempt, he and a Dene Sųliné leader named Matonabbee (mat-a-nob-ee) successfully walked to the Coppermine River and then back to Fort Prince of Wales. The journey took the two men more than two and a half years, during which they often faced severe weather and starvation. Hearne carried with him a blank map, which he filled in as he and Matonabbee travelled.

### Pause

1. Why do you think Hearne might have been interested in mapping this region?

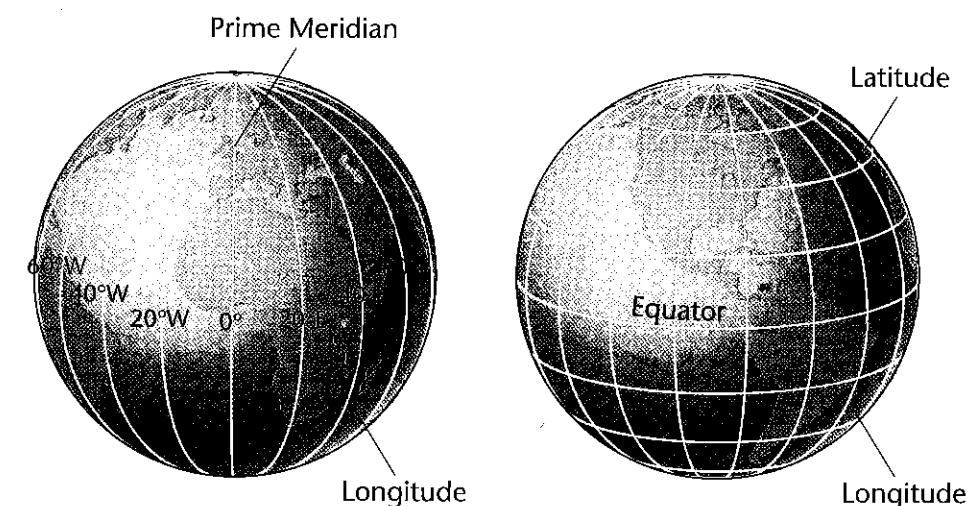
## Thinking Like a Geographer

### Using Latitude and Longitude

What do you know about using grids to locate something on a map? Latitude and longitude are the names of grid lines on a map. When Samuel Hearne was sent to find the Coppermine River, he was told to "observe the longitude and latitude of the river's mouth." Mapmakers, such as Hearne, use longitude and latitude to identify the exact location of places.

We know that latitude refers to horizontal lines on a map or globe. (See Chapter 1, page 21.) They allow us to measure how far a place is north ( $^{\circ}$ N) or south ( $^{\circ}$ S) of the equator. Lines of **longitude** are the vertical lines running north-south in the diagram of the Earth. Like latitude, these are imaginary lines.

The  $0^{\circ}$  latitude line is the equator. The  $0^{\circ}$  longitude line is called the **Prime Meridian**. The lines of longitude to the right and left of the Prime Meridian help us measure distances east or west of the Prime Meridian. These lines are expressed in degrees east ( $^{\circ}$ E) or degrees west ( $^{\circ}$ W).



Once you know the lines of latitude and longitude of a place, you can locate it on a map.

### You Be the Geographer

1. Look at the map of the Canadian Shield region on page 54. Between which two lines of longitude and latitude does most of this region lie?
2. Locate Alberta's capital city in an atlas. Based on the atlas that you are using, between what lines of latitude and longitude is the city located?



# How Does the Climate Shape Ways of Life?

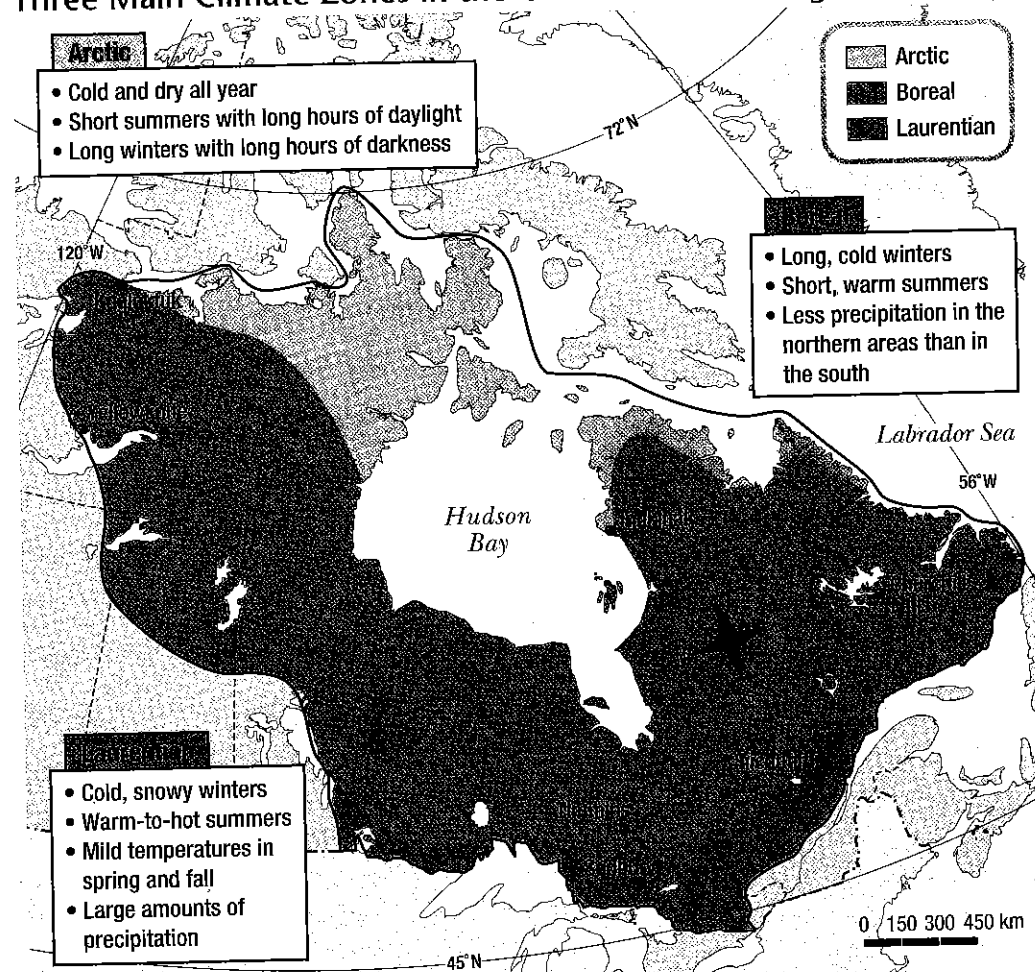
The Canadian Shield region is very large, and the climate varies widely. It is for this reason that geographers often divide this region into smaller areas that share the same climate. These smaller regions are called climate zones. There are three climate zones in the Canadian Shield: Arctic, Boreal, and Laurentian.

## SKILLS at Work

Which settlement on this map is closest to 120°W? Which settlement on this map is closest to 56°W? Using the 120°W and 56°W lines, estimate what degree west you think Timmins is. Go to an atlas or to the Internet to find out how close you were.



## Three Main Climate Zones in the Canadian Shield Region



This map shows the three main climate zones of the Canadian Shield region. Which zone is the largest? Which zone would you say has the coldest winter? Which would you say has the warmest? Use what you know about latitude to help you explain your understanding. (See also Chapter 1, page 21, to help you.)

## Living with the Climate

### Kids Speak

“My favourite time of year is fall because this is when I can go hunting with my dad. Fall and spring are times for harvesting and hunting in Métis communities. The winters here are cold. My mom and grandmother make mitts, coats, and moccasins from animal hides. They are really warm. My mom made me a parka that has a wolf tail around the hood. When I pull it up around my face, I can be out in the coldest weather and still be warm. My mom and aunts sell some of the clothing they make over the Internet.”



Cameron

Norway House, Manitoba

## Recreational Activities

Tourism is important to many places, including Kenora, Ontario. Visitors come not only because of the area's beauty, but also because of the many different outdoor activities that they can do in each of the four seasons of the year.

### Your One-Stop, Year-Round Outdoor Fun!



#### Bare Rock Lodge

Endless summer activities...

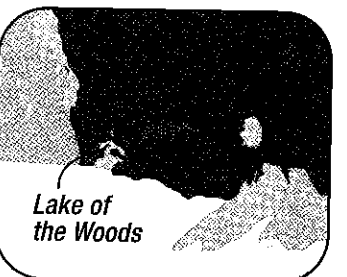
- fish for northern pike, lake trout, walleye, and more
- swim, water ski, jet ski, sail, kayak, canoe
- hike, bike, bird watch

Being out in the cold and loving it!

- ice fish
- ski, snowboard, toboggan, snowshoe
- snowmobile

James and Margaret Teasdale  
(807) 555-2368  
teasdale@barerocklodge.ca

PO Box 123  
Kenora, Ontario  
www.barerocklodge.ca



Lake of the Woods

The climate in each season provides the chance to do many different activities. A group of grade 5 students researched the different activities that Kenora offers. To present the research, they created a pamphlet for an imaginary resort. What does this pamphlet tell you about some ways of life in Kenora?

## Pause

1. How does climate affect people's quality of life in the Canadian Shield?

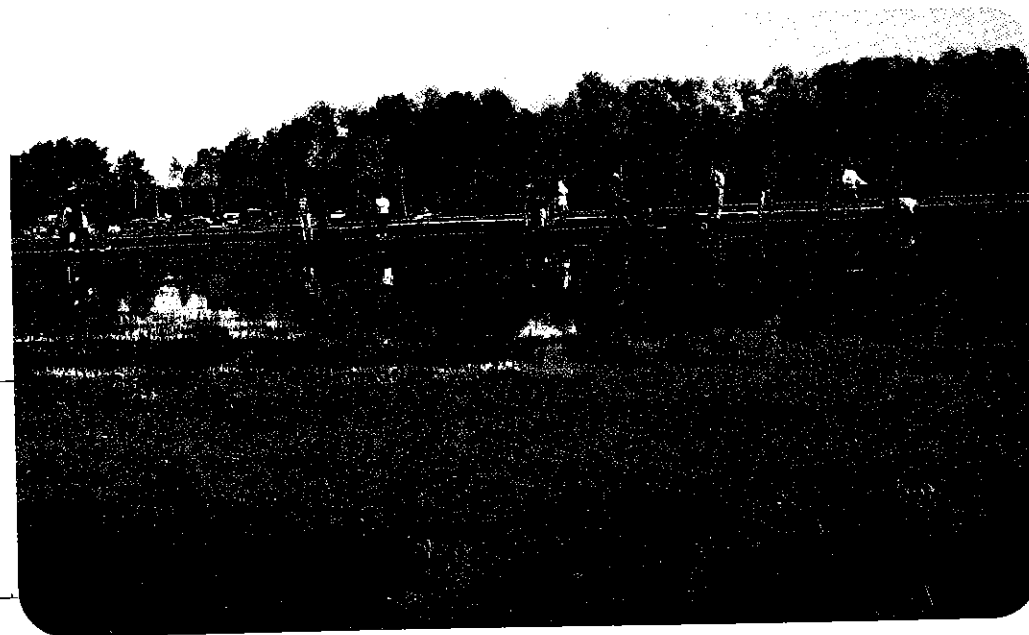
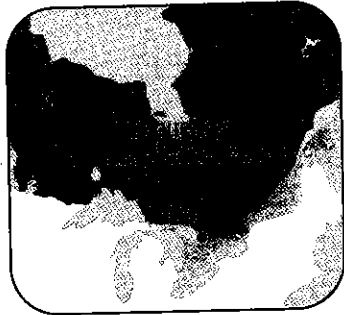


## Short Growing Season

The Canadian Shield region's climate makes for a short growing season. This, combined with the rocky landscape and thin soil, means there is almost no farming in this region. However, some farming in the Laurentian climate zone exists. The growing season there is longer than in the Shield's other climate zones.

Two crops that grow well in the climate and soil of the Laurentians are blueberries and cranberries. The Saguenay-Lac-Saint-Jean area in Québec is known for its blueberries. In late summer and early fall, farmers harvest the berries and freeze most of them for shipment to other parts of North America and to Europe.

Bala, Ontario, has the province's largest cranberry farm. The Wahta Mohawks own and run this farm.



Visitors go to Bala in the fall to take part in its yearly cranberry festival. They can tour the marshes where the cranberries are grown and watch the harvest.

Another crop that is grown in some parts of the Canadian Shield region is wild rice. Wild rice is not actually rice, but a type of grass that grows in marshy areas. The Anishinabe people of the region call it "man-o-min," meaning "delicacy of the Great Spirit." It is their traditional food and it grows well in the marshlands. The wild rice from this region is sold throughout North America.

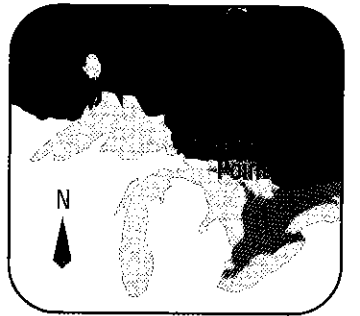
### Pause

1. The most populated communities of the Canadian Shield region are found in the Laurentian climate zone. Why do you think this might be?

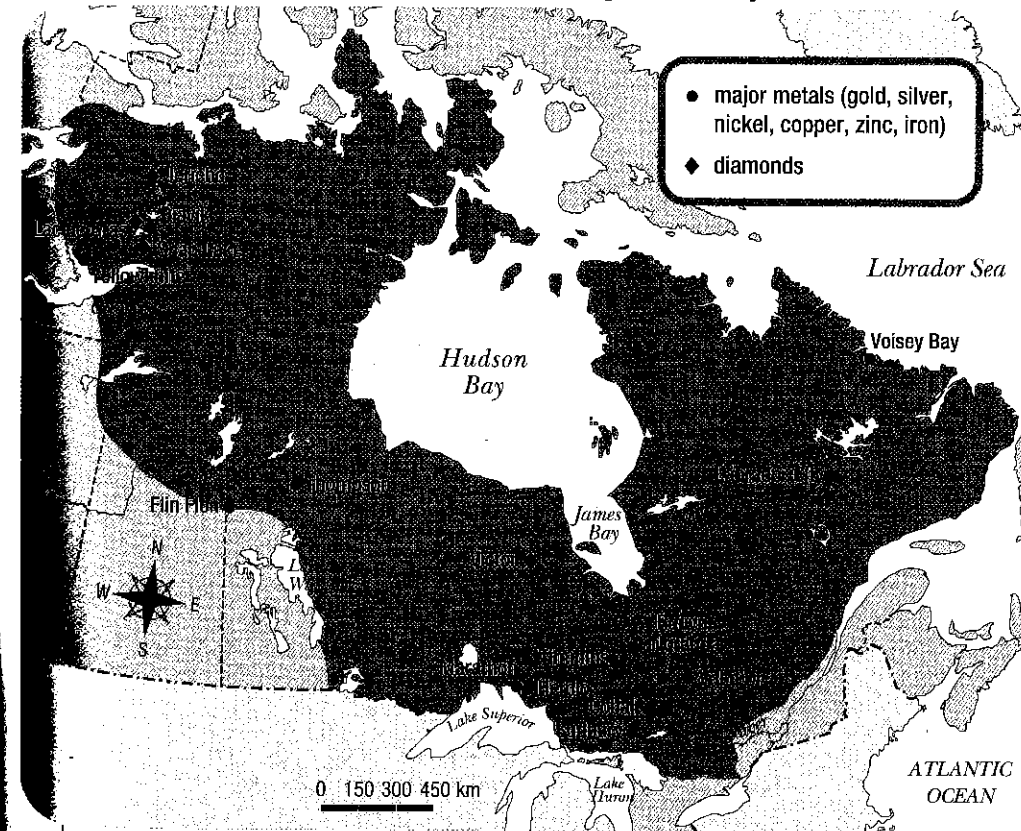
## What Is Life Like in a Region Rich in Natural Resources?

The Canadian Shield region is a storehouse of natural resources. The people who live in this region have used these resources for thousands of years. Archeologists have found evidence that the Kitlnermiut (killi-ner-miut) mined copper in Nunavut more than 3000 years ago. There is also evidence that the Anishinabe mined copper at Mamainse Point on Lake Superior 6000 years ago. Silica, a white or colourless crystal, was also mined in several areas in this region. There are mine sites that date back 8000 years. People used these materials to make items such as tools, weapons, and ornaments. These items were also used in trade.

Today, the Canadian Shield region is one of the world's leading mining regions. About 80 communities in this region depend on mining operations. Many people have come to this region to work in mines. Others have come to provide goods and services to the miners.



### Major Mining Centres in the Shield Region Today



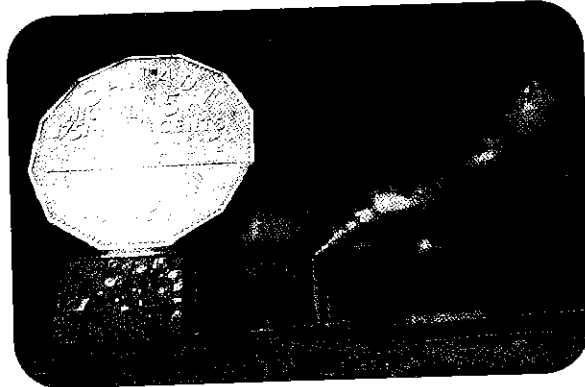
This map shows the major minerals found in the Shield region.

### SKILLS at Work

What are the major minerals found in the Shield region? Where are diamonds mined? Use the legend to help you.



## Sudbury and the "Big Nickel"



This nine-metre-high five-cent coin, the "Big Nickel," is a famous landmark in Sudbury. It is a reminder of the importance of nickel mining to the city and its ways of life.

Where is Sudbury, Ontario? Locate it on the map on the previous page. This city is located in a large oval crater, or basin. Many scientists believe that about 1.8 billion years ago, a meteor crashed into Earth, creating this basin. Around the rim of the basin, people discovered large deposits of nickel and copper. Mines and related industries started and Sudbury became a leading mining city.

However, human activity, such as logging and mining, caused so much destruction to the city's landscape that it looked like something from outer space. People even called the city "moonscape."

In the 1970s, residents, industry, and the government of the city began to work together to clean up the landscape. They replanted trees and other vegetation. Today, the city has become a model city in Canada and around the world for its "green" program.

## Diamonds

August 17, 2006

### Nunavut's First Diamond Mine Opens in Jericho



This worker at the Canada Dene Diamonds factory is cutting a diamond with a sawing machine. How do you think the discovery of new resources affects traditional ways of life?

Canada's diamond industry is a young, but quickly growing industry. A large deposit of the sparkling, valuable gems was found in the Lac de Gras (lak duh grow) area in the Northwest Territories in 1991. By 1998, the area opened its first diamond mine. Others have followed, including the Jericho mine in Nunavut. In 20 years, some people believe that Canada will supply as much as half of the world's diamonds.

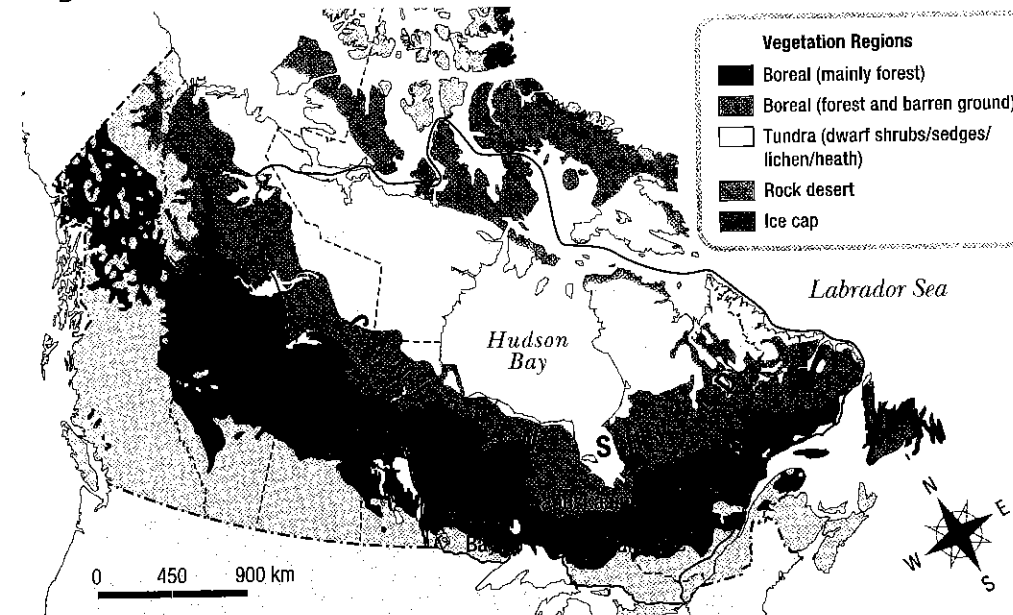
In recent years, a number of factories have been built in the Northwest Territories that cut and polish diamonds. One of these is owned by the Yellowknife Dene First Nation. Some companies engrave images of maple leaves or polar bears onto each stone to identify them as pure Canadian gems—mined, cut, and polished by Canadian workers, and approved by the government of the Northwest Territories.

NEL

## Forest Resources

The region's boreal forest is one of the largest and most important forests in Canada. For generations, First Nations peoples in the region hunted in these forests and used the trees to build canoes, snowshoes, and homes.

### Vegetation Regions of Canada



This map shows the main vegetation zones of Canada. Explain why you think the vegetation changes as you move farther north.

Today, the forests of this region provide many jobs. About half of the trees found in this region are suitable for lumber. Much of the paper and newsprint that we use every day comes from this region. Communities that make their living in forestry include Thunder Bay and Kapuskasing (kap-u-ska-sing) in Ontario and Dolbeau and La Tuque in Québec.



A forestry worker is sawing a log in a forest in Algoma district, east of the Thunder Bay area.

NEL

## Importance of Animals

Animals such as moose, caribou, and deer have been important sources of food, clothing, and shelter for First Nations peoples in the Canadian Shield region. A nutritious food, called pemmican, was made from the meat. **Pemmican** was made by pounding dried meat and mixing it with berries and fat. It is still eaten today.

In the following story, Cree writer Xavier Kataquapit (x-a-veer kat-a-kwa-pit) explains his people's view towards animals.

Caribou is an important animal to Aboriginal peoples of this region, including the Dene Sųtıné and Inuit. They use every part of the caribou. They use the meat for food, skin for clothing and tents, bones for needles, sinews for thread, and antlers for tools.

## Take Only What You Need

When I lived up north in Attawapiskat (at-ta-wa-pis-kat), wildlife was all around me on a regular basis. My brothers and I were educated on how to hunt and gather food from a very young age. At the same time we also learned how to respect the land and the animals that live there. One of the first lessons we experienced was to hunt and gather only what we really needed. There is an ancient belief amongst Cree hunters that if you gather more than what you would use or if you killed anything you didn't need then you were committing a serious offense against nature. Any kind of offense meant you brought bad luck to yourself and your future chances for good hunting.

It is confusing for someone like myself with my upbringing to understand sport or recreational hunting. The idea of going hunting just for the fun of it is something I just can't connect with....

Hunting to my people in the north is not a sport, it is a way of life....

There actually is a very old and traditional word that sums up this idea of taking just what you need when you need it and showing respect to the land and its creatures. It is "Pah-Sh-Tah-Moo-N...."

Excerpts from "Take Only What You Need" by Xavier Kataquapit, *Under the Northern Sky*, October 31, 2006.

The region's fur-bearing animals have been important to the growth of many communities, such as Sept-Îles in Québec and Thunder Bay in Ontario. People in these communities made a living hunting, trapping, and trading furs. Animals continue to provide resources for the hunting and trapping industries.

Today, animals have become an important part of the tourism industry. Eco-tourism is a growing industry in the region. Visitors come to see the unique wildlife and learn more about the environment.

Tourism is very important to the people in this region. When tourists visit, they spend money in local businesses, such as hotels, restaurants, and tours. This puts money back into the communities and creates many jobs.



Eco-tourists in Churchill watch polar bears from a boat. Some people disagree with eco-tourism because it brings animals into contact with people and changes their natural environment. Others, however, believe eco-tourism is a good idea as it allows people to learn about and appreciate animals in their natural habitat.

## Pause

1. What does Xavier Kataquapit's story tell you about his people's view towards animals?
2. In what ways can we show care and concern for land and resources?

## Pause

1. Should eco-tourism be encouraged? Why?
2. If you were to make rules about tourism, what rules would you make that would protect both the industry and the environment?

## What Are Some Challenges in Managing Resources?

One of our most valuable resources is our forests. Many people disagree about how forest resources are being used. In particular, they disagree with clear-cutting. **Clear-cutting** is a logging method where all the trees in a block of forest are cut down at once. Even though forestry companies may replant trees, they cannot replace rare or unique kinds of trees. What is your view on logging and clear-cutting?

• Clear-cutting is a logging method where all the trees in a block of forest are cut down at once.



A grade 5 class in Thunder Bay is working on an inquiry project. They can use the library computer and post questions to the "Let's Discuss Issues" bulletin board. Other students in the school can log on and discuss the issue. One student, Avril, posted a question asking other students what they thought about protecting our forests.



### Many Views on the Uses of Forests

Avril: Should we stop logging or clear-cutting in this region to protect our forests?

Mark: We should stop logging. Forests are important because the trees replace carbon dioxide in the air with oxygen, which people need to breathe. Forests help control erosion and prevent flooding. They add nutrients to the soil to make it more fertile.

Pamela: We cannot stop cutting down trees. The forest industry is very important to our town. It provides many jobs. We need these jobs.

Justin: Forestry destroys animals and plants. When we destroy Mother Earth, we destroy ourselves. It is time to act and stop the destruction of our forests.

Ramesh: We can't just stop cutting trees. Where would we find material to make things such as houses and paper?

Su-Ling: We can find a solution that allows forestry to continue while also protecting our forests. My dad works in a forestry company. He says that workers plant new trees in areas that have been logged. Once these trees have grown, the company will return, cut them down, and plant new trees again. This process is called **reforestation**. I think this is a great way to protect our forests for future generations.

### Pause

1. What points of view, or ideas, do the students on this page have about logging and clear-cutting? List the arguments on this page that support the forestry industry and those that are against it. Why is making laws for natural resource industries sometimes a difficult issue?

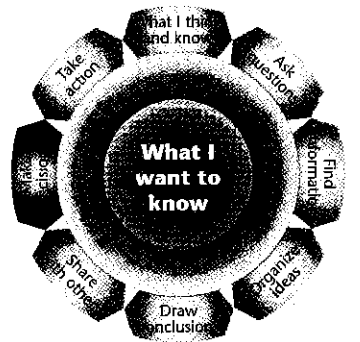
## Should Dams Be Built?

The Canadian Shield region's many rivers are used to produce hydroelectricity. The electricity is needed for homes and businesses. It is sold to other provinces and to the United States. The hydroelectric plants provide jobs for many people in this region.

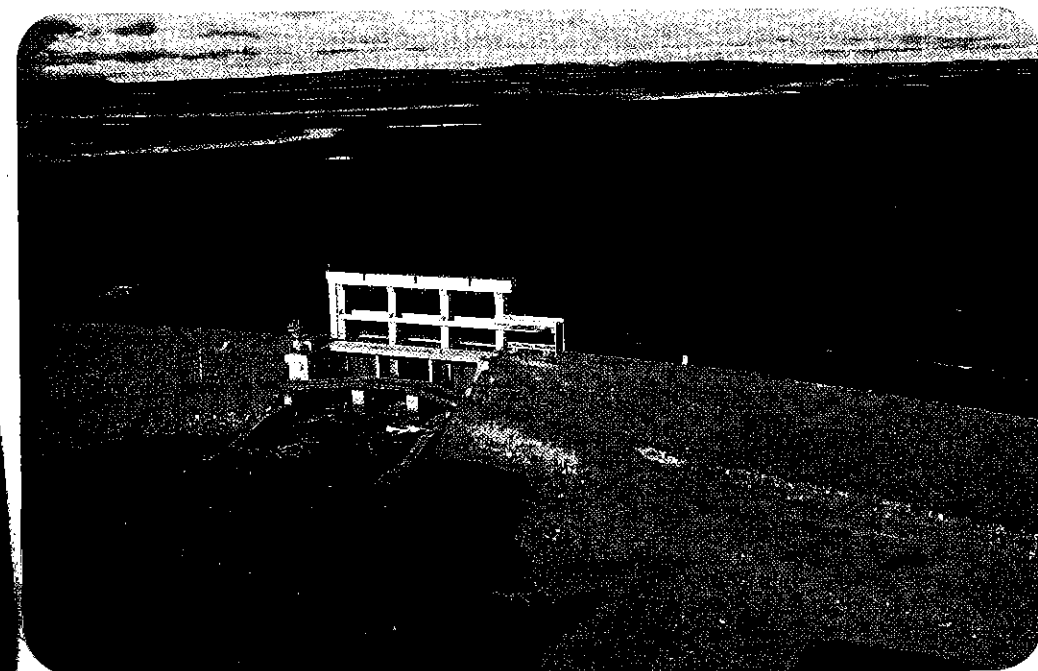
There are, however, debates about the development of hydroelectric dams. Dams need to be built across rivers in order to generate the hydroelectric power. A **dam** is a structure that slows, directs, or stops the flow of water. A lake forms behind the dam.

### What Are Some Advantages of Dams?

- Dams control flooding, protecting land and communities.
- The water that builds up behind dams can be used for irrigation or recreation.
- Dams can also be used as a water supply for towns and cities and for industries.
- Hydroelectric power can be used by nearby communities or sold to other places.
- Building and operating dams creates jobs.



• dam → a structure that slows, directs, or stops the flow of water



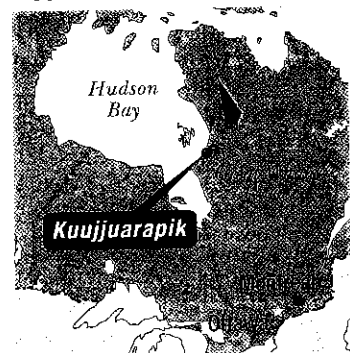
This hydroelectric dam is at Churchill Falls, Labrador. Dams like this are common on many of the rivers in the Canadian Shield region.



## What Are Some Disadvantages of Dams?

When building a dam, the land behind the dam is flooded, destroying forests and wildlife habitat. Farmland and hunting and fishing areas are often lost. Sometimes communities have to be moved. For example, the flooding of the hunting area around James Bay and Hudson Bay to build the James Bay hydroelectricity plant forced many James Bay Cree people to move. Some even had to give up their traditional way of life. Here's a story about why a community stopped a dam project.

### The Story of Kuujjuarapik



Kuujjuarapik (koo-joo-ar-a-pik) is a community of Inuit and James Bay Cree. In 1986, the Québec government announced plans to build a hydroelectric dam on the Great Whale River. The Aboriginal peoples living in the area, including the residents of Kuujjuarapik, protested against the plan. They said that their traditional hunting and fishing grounds would be destroyed by flooding, and by the construction camps, roads, and airports that would need to be built.

The Cree and Inuit believed that the dam not only threatened the environment, but also their ways of life. One woman named Malaya

expressed concern over "country food," which is the food taken from the land. She said, "The country food is going to be destroyed. We don't want the hydro project to start in our community: the animals are going to disappear. Dinosaurs became extinct a long time ago. That will happen with country food, too. Our children and their children might never know animals."

The Cree and Inuit argued that because of the effects of earlier dam projects in Québec, the government had agreed to study the environmental and social effects the dam might have. They took the Canadian and Québec governments to court in 1991, finally winning their case in 1994. The judge in the case, Paul Rouleau (roo-loh), said, "I doubt that anyone can suggest [the Great Whale Project] will not affect both the social and economic future of the [Aboriginal] peoples and will certainly interfere with wildlife and its habitat, resulting in drastic changes to the traditional way of life." The dam was never built.

## ← Looking Back

The Shield region is an enormous region with few people but many valuable resources. There are challenges about the use of resources. How can they be used to add to the quality of life for people outside the region without destroying the quality of life of the people who live in the region and the environment?

On your own, with a partner, or in a small group:

- Review the Predict question at the start of this chapter: *What would it be like to live in a land of rock with a wealth of natural resources?* What predictions did you make? What new things did you learn that you could add to your predictions?
- Choose one of the following to show your understanding of what it is like to live in a rocky region rich in natural resources.
  - \* Create a design for a new Canadian coin or paper money.
  - \* Create an illustrated chart.
  - \* Write an article for your school newsletter.

You may focus on one natural resource of the Canadian Shield region and its effects on ways and quality of life.

## Building the Travel Canada Tour



Revisit the ideas that you have gathered for the *Travel Canada* tour in Chapters 1 and 2. What can you add from the Canadian Shield region? Scan through this chapter again, pausing at sections that discuss tourism. Pay close attention to the content and the visuals in these sections. What ideas do they help you form for the *Travel Canada* tour? Did any one community stand out for you? Why did it stand out? Note down your ideas and save them for later use.

## → Looking Forward

The next region we are going to learn about is the Interior Plains region. This is a region with landforms similar to those of the Shield region, and it has many resources as well. However, unlike the Canadian Shield region, a great part of this region is flat, with fertile soil. How do you think this fertile soil would shape ways of life in the Interior Plains?

## Inquire

1. How should we make decisions about uses of land and natural resources? What should be our main concern: people's traditions, the environment, or jobs? Discuss in small groups.
2. What other questions do you have about the advantages and disadvantages of dams? What are you curious to learn more about? Plan an inquiry. What steps of the inquiry model would you use?