

Geographic Regions of North America



North America is divided into eight distinctive geographic regions based on topography (land forms), climate, and vegetation. How do the political divisions of the continent contrast with these regions?

The Appalachian Region

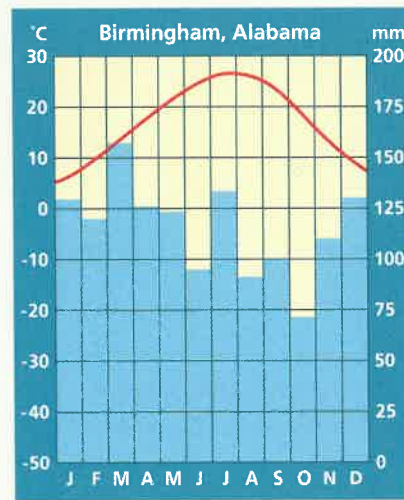
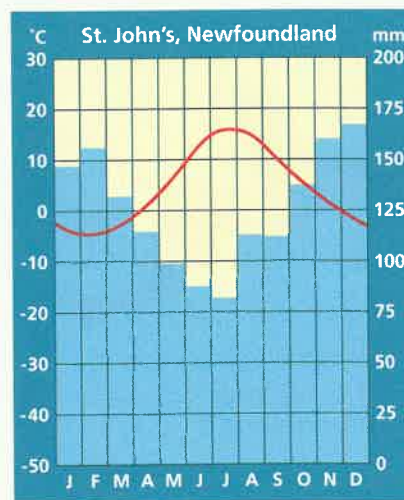
The Appalachian region consists of a mountainous area that separates the Atlantic coast of North America from the Interior Plains. While not extremely high, this mountain range is wide and rugged in places.

Did You Know?

Fold mountains like those in the Appalachian Range are formed when two tectonic plates push together. Over millions of years, the rock layers of the crust crumple and form folds.



Topography	Vegetation	Climate
<ul style="list-style-type: none"> • Fold mountains formed 300 million years ago • Mountains significantly eroded over time • Deep river valleys • Some navigable rivers (St. Lawrence, Hudson) 	<ul style="list-style-type: none"> • Dense mixed forests • Fertile river valleys • Mountain soils are thin and rocky 	<ul style="list-style-type: none"> • Winters cold in the north; mild in the south • Summers generally hot and humid • High rain and snow fall



Compare and contrast the amount of snowfall typically received by St. John's and Birmingham.

The Appalachian region has rich deposits of coal, which lie in shallow seams near the tops of the mountains. Knowing that this type of resource extraction happens in this area, what benefits and problems might arise?



How would the Appalachian mountains act as a barrier to the early colonization of North America by Europeans?



High-altitude plateaus called "dolly sods" are found in the Allegheny Mountains in the Appalachian Range. Animals and plants found here thrive in cold, high altitudes.



The cold Labrador Current and the warm Gulf Stream on the Grand Banks encourages growth of marine organisms, providing rich feeding grounds for fish.



The Coastal Plains Region

The Coastal Plains region consists of a series of lowlands that run south from Maine to Florida and west into the Gulf of Mexico. This region can extend 50 to 500 kilometres inland.

Hurricanes affect the Coastal Plains region every year. These large storms are formed when warm air rises over tropical bodies of water. Warm air at high altitudes draws cooler air up quickly from below, causing wind and thunderstorms. These storms then join together in large, circular bands, which spin and grow. Hurricanes can move north along the east coast of North America, slowing down only over land or when they reach cooler waters.



Topography

- Flat, low-lying land
- Over half the region is less than 30 metres above sea level
- Many streams, rivers, marshes, and swamps
- Mississippi River deposits rich sediments in the delta region of the Gulf of Mexico

Vegetation

- Wet areas encourage aquatic plants, grasses, and mangroves
- Inland pine forests
- Agriculture often requires draining of swamps

Climate

- Cold, snowy winters in the north
- Mild to warm winters in the south
- Hot humid summers
- Hurricanes from late summer to early winter

This housing development was originally swampland. What effect do such developments have on local ecosystems? What challenges would this type of environment present for Aboriginal peoples and early European explorers?



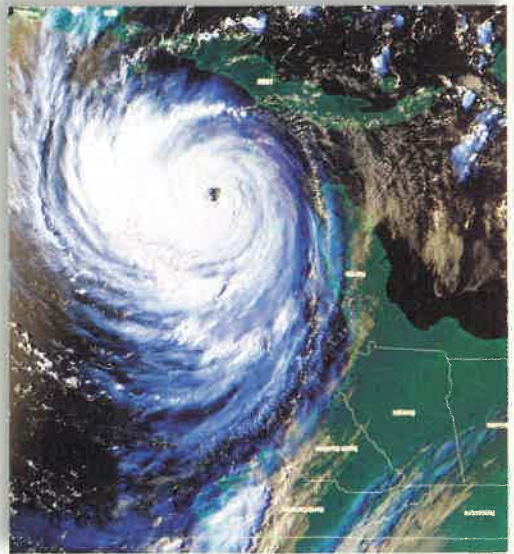
Although low-lying and prone to flooding, the Mississippi delta also has a high rate of economic development. Why do you think this is so?



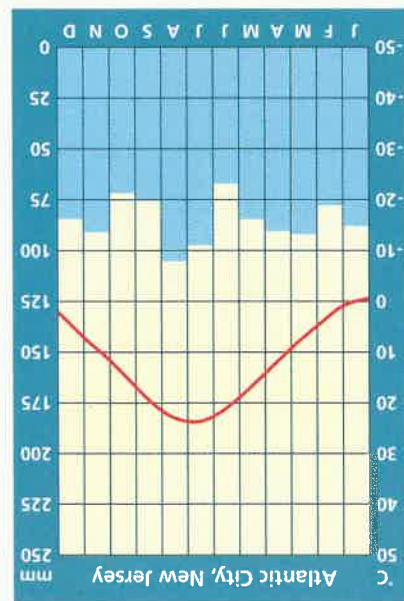
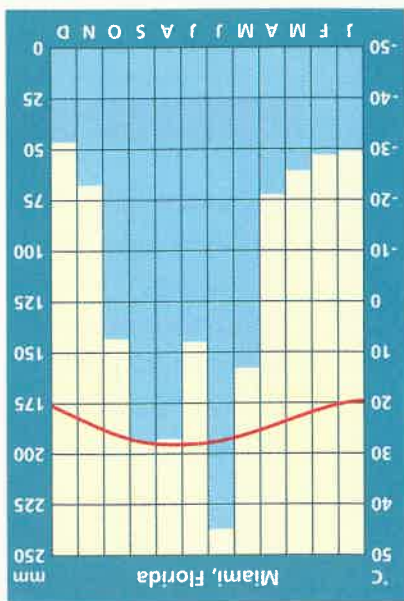
Hurricanes bring extensive rainfall, flooding, and winds that can exceed 250 kilometres per hour. This neighbourhood in New York was destroyed by Hurricane Sandy in 2012.



Hurricanes spin in a distinctive spiral formation.



Briefly describe differences in climate between the northern and southern Coastal Plains.



The Great Lakes–St. Lawrence Lowland Region

This is the smallest geographic region in North America, but also one of the most highly populated. The region was formed by the deposition of soil and rock from glaciers during the last Ice Age about 25 000 to 10 000 years ago. It has some of the most fertile soils in North America.

Did You Know?

Glaciers are very thick layers of ice that move slowly across the land. The combined weight (millions of tonnes) and movement of a glacier scrapes the land beneath. This creates mounds of debris made up of soil and rock. As the glacier melts, the debris is washed away. This process formed the rich soil deposits of the Great Lakes–St. Lawrence Lowland region.



Topography

- Flat plains and rolling hills
- Many river valleys
- Soils are extremely fertile

Vegetation

- Extensive broadleaf forests
- Some stands of coniferous trees
- Region ideal for mixed agriculture

Climate

- Cold, snowy winters
- Humid summers, but cooled due to influence of the Great Lakes

The Niagara Escarpment is a prominent feature of the Great Lakes–St. Lawrence Lowlands region.

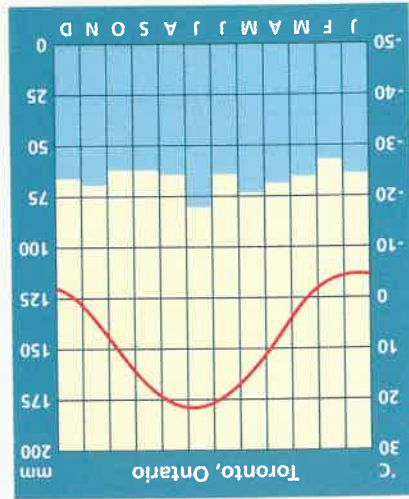
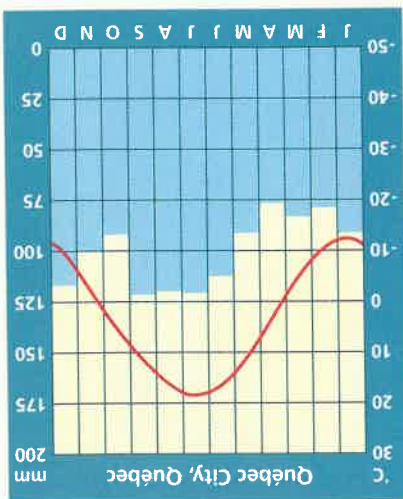


The majority of Canada's population lives in this region. What effects does this concentration of people have on natural ecosystems?



Fields and farms along the St. Lawrence River in Québec.

Briefly describe the annual precipitation pattern for this region, based on the data in the climate graphs.

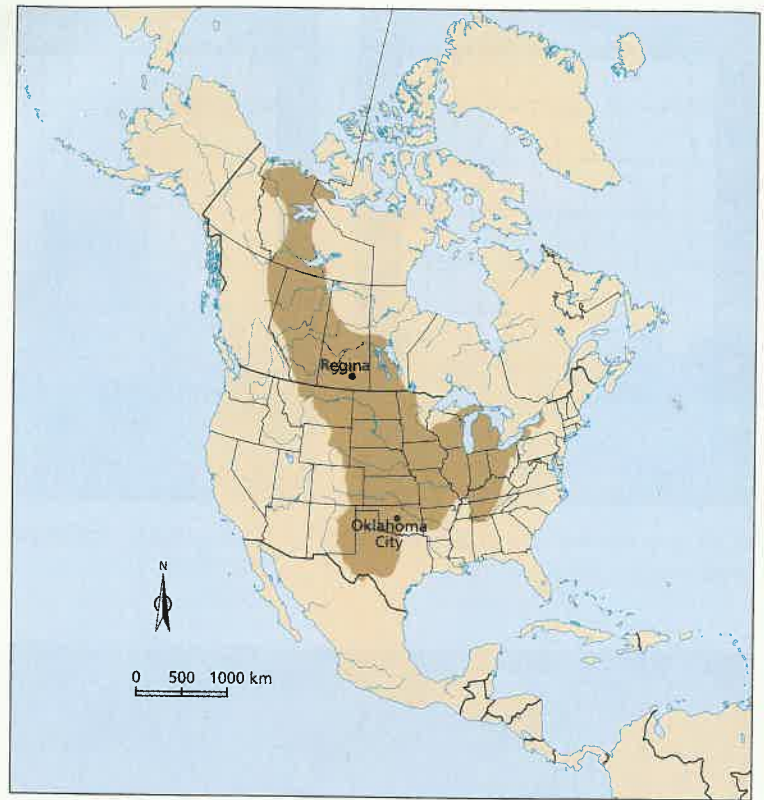


The Interior Plains Region

The Interior Plains region dominates the central part of North America. While much of the region was originally grassland, the northern part of this region consists of gently rolling hills covered with boreal forest.

boreal forest a northern forest area dominated by pine, fir, and spruce trees

tundra an ecosystem where the growth of trees is limited by cold temperatures and short growing seasons



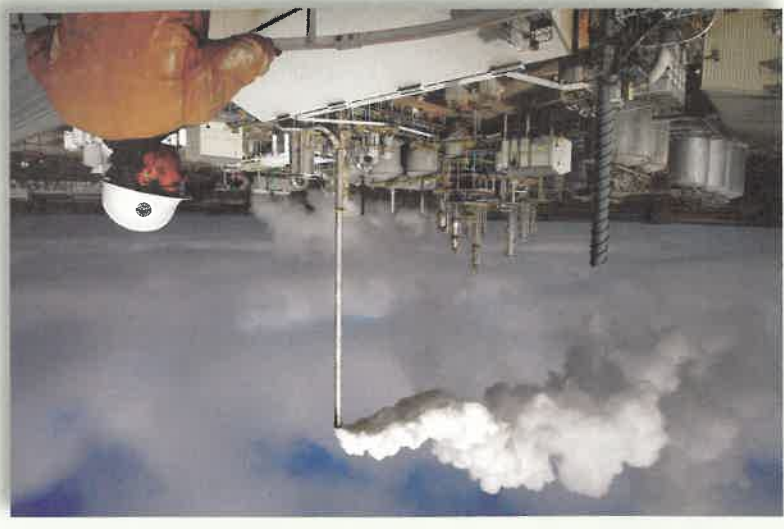
Topography	Vegetation	Climate
<ul style="list-style-type: none">• Was the bed of a shallow sea 100 million years ago• Low rolling hills cut with river valleys• Open plains	<ul style="list-style-type: none">• Mostly grassland with isolated stands of trees• Some mixed forests to the east• Boreal forest and tundra in the north	<ul style="list-style-type: none">• Cold, dry winters• Hot summers• Arid to semi-arid conditions• Most precipitation falls in the summer• Tornado activity



Canada's grasslands are now only one-quarter of their original size due to farming and human settlement.

Corn is traditionally grown in this region. It provides food for humans, fodder for livestock, and oil. Recently, much of the corn crop in Canada and the United States has been raised for use as biofuel. What are the benefits and problems associated with such a switch?

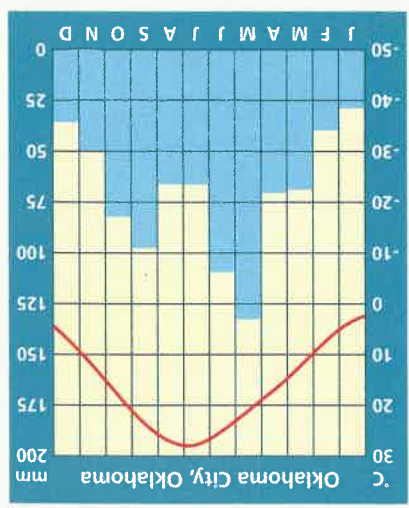
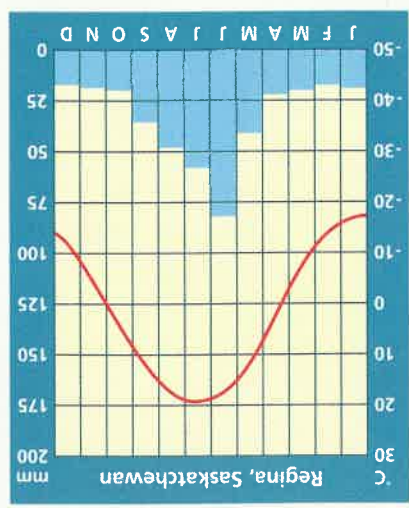
In the American Midwest, the collision of dry, cold air from the Rockies and warm, moist air from the Gulf of Mexico frequently causes tornadoes. With wind speeds of up to 650 kilometres an hour, tornadoes can be extremely destructive.



Why is this region suitable for farming and ranching?



A semi-arid climate is generally defined as receiving less than 500 mm annual precipitation. Based on this definition, are either of these two places semi-arid? What are the challenges of farming in a semi-arid climate?

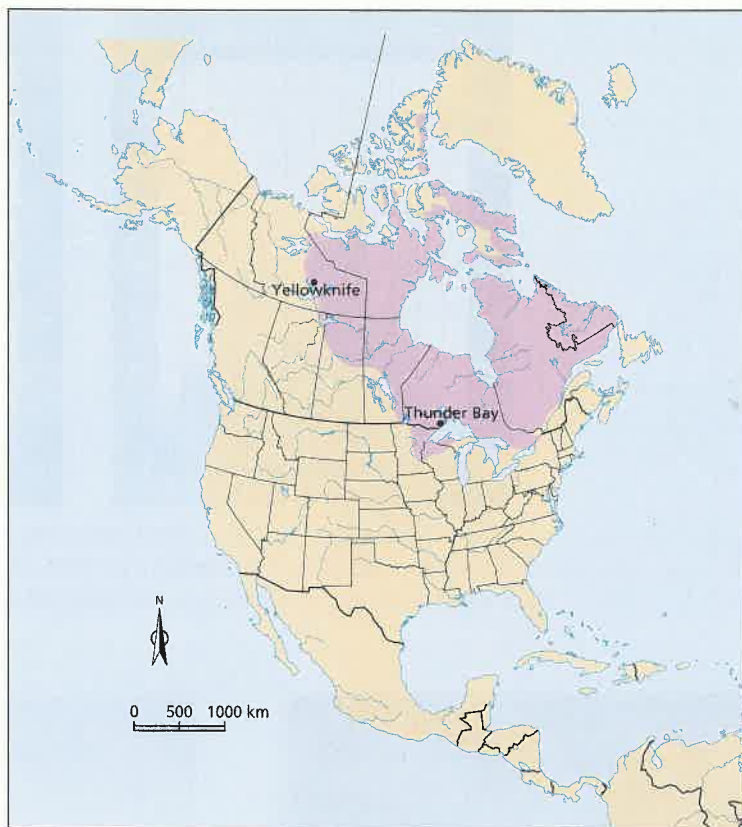


The Canadian Shield Region

Two billion years ago, the Canadian Shield region was a range of volcanic mountains. Erosion, especially from glacial activity (see page 332), has almost completely worn these mountains away. This region is a vast storehouse of valuable minerals.

Did You Know?

The word *muskeg* comes from a Cree word, *maskek*, which means "low-lying marsh." Areas of muskeg are made up of decaying plants, mosses, small trees, and small bodies of water. This ecosystem is an ideal home for beavers.



Topography

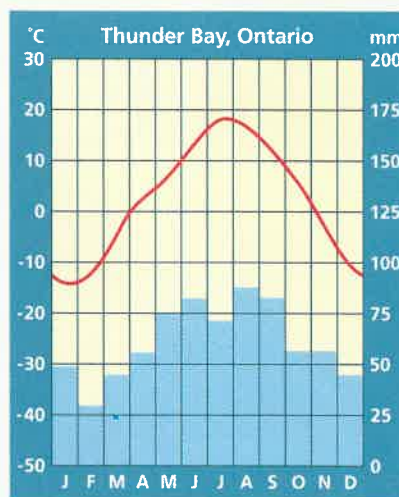
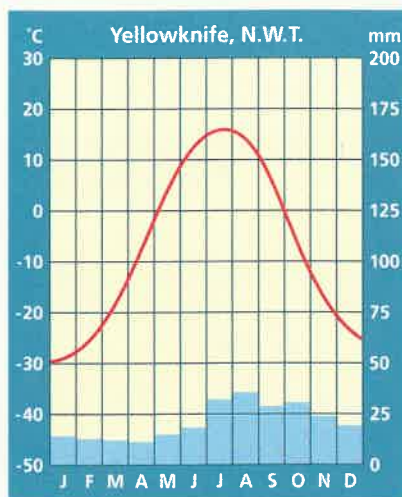
- Bare rock interspersed with lakes, rivers, and muskeg
- Large deposits of nickel, gold, silver, copper, and other minerals

Vegetation

- Boreal forest
- Tundra dominates northern part of region
- Extensive muskeg swamps

Climate

- Long, very cold winters
- Short, cool summers
- Short growing season



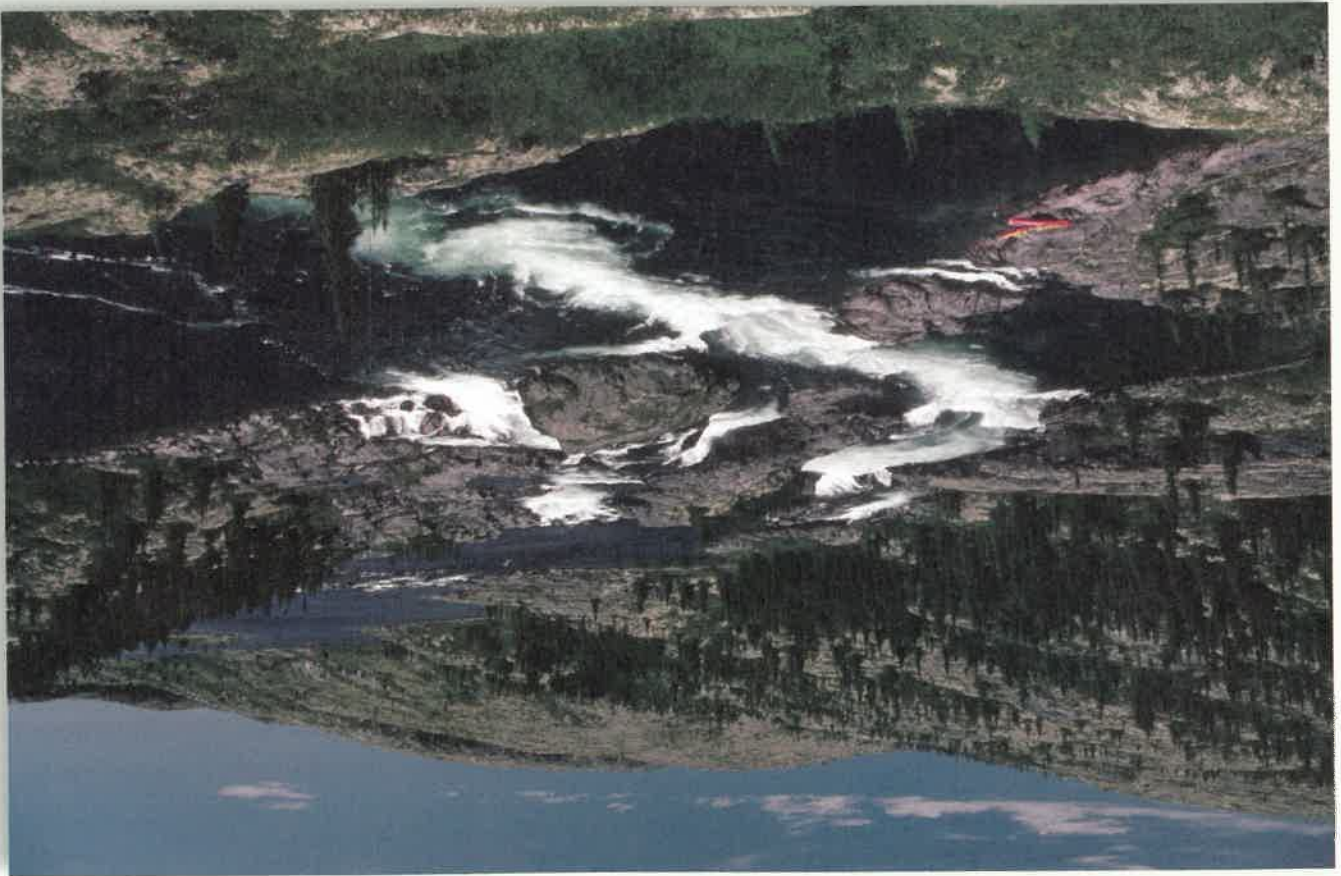
Using data from the graphs, explain why these two locations are generally unsuitable for agriculture.

Muskeg is commonly found in the Canadian Shield.



Sudbury, Ontario is dominated by the Inco smelter and its 380-metre-tall Superstack, the second-tallest chimney in the world. The Superstack is designed to reduce, through its height, the emission of gases like sulphur dioxide into Sudbury. What would be the effect of such a chimney on a larger area?

The Canadian Shield consists primarily of exposed rock and boreal forest. What might have attracted the first European explorers to this landscape?



The Western Cordillera Region

The Western Cordillera consists of two mountain ranges dominating western North America: the Rocky Mountains, which consists of fold mountains, and the Coast Range, which consists of both fold and volcanic mountains. Both mountain ranges are the result of plate tectonic activity between the North American and Pacific Plates.

Did You Know?

The Rocky Mountains were once part of the same ancient seabed that formed the Interior Plains. Fossilized seashells have been found at the tops of these mountains.



Topography

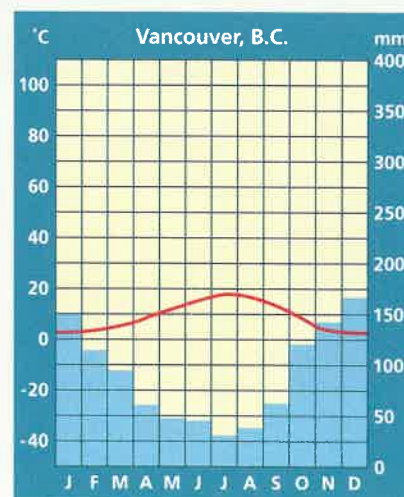
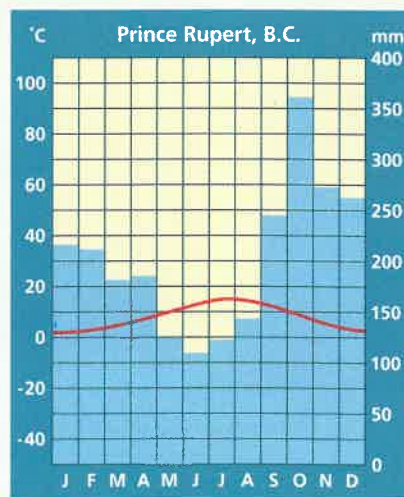
- High, rugged mountain ranges
- Deep river valleys
- Rocky Mountains form the continental divide: rivers west of the Rockies flow west

Vegetation

- Windward slopes have dense coniferous forests
- Leeward slopes are drier and are dominated by smaller forests and grasses
- Alpine tundra

Climate

- Cool winters along the coast; colder winters inland
- Cool summers on the coast, warmer summers inland
- Very high precipitation in some coastal locations



Tropical rainforests have what is termed a wet and a dry season. Is this true of the temperate rainforest of the British Columbia coast? Explain.



The Rocky Mountains are about 70 million years old. What effect have the Rockies had on traditional transportation routes in western North America? How did this affect Aboriginal peoples and European explorers?



The coast of British Columbia is home to the largest temperate rainforest in the world. Some trees are centuries old.



An oil pipeline from Alberta's oil sands to Kitimat, B.C. has been proposed. Large supertankers would be required to navigate coastal waters such as these. What are the risks of such a proposal? Do the benefits outweigh the risks? Discuss.

The Intermountain Region

The Intermountain region consists of a series of high plateaus that lie between the Coast Range and the Rocky Mountains. This region lies within the rain shadow of the mountains. As a result, it is a very dry area with sparse vegetation.

Did You Know?

Rain-shadow environments exist throughout the world. They include the Tibetan Plateau in central Asia, the Atacama Desert in Chile (the driest desert on Earth), and the Midlands of Tasmania, in Australia.



Topography

- Isolated, high-elevation plateaus cut by river valleys
- Many rivers do not flow out of the region
- Desert conditions

Vegetation

- Area dominated by scrub, isolated grassland and desert plants
- Slopes of some mountains may have thin pine forests

Climate

- Wide range of climate conditions depending on latitude
- Cool winters, hot summers
- Generally little precipitation

The Thompson River Valley in British Columbia shows the very dry nature of this region.



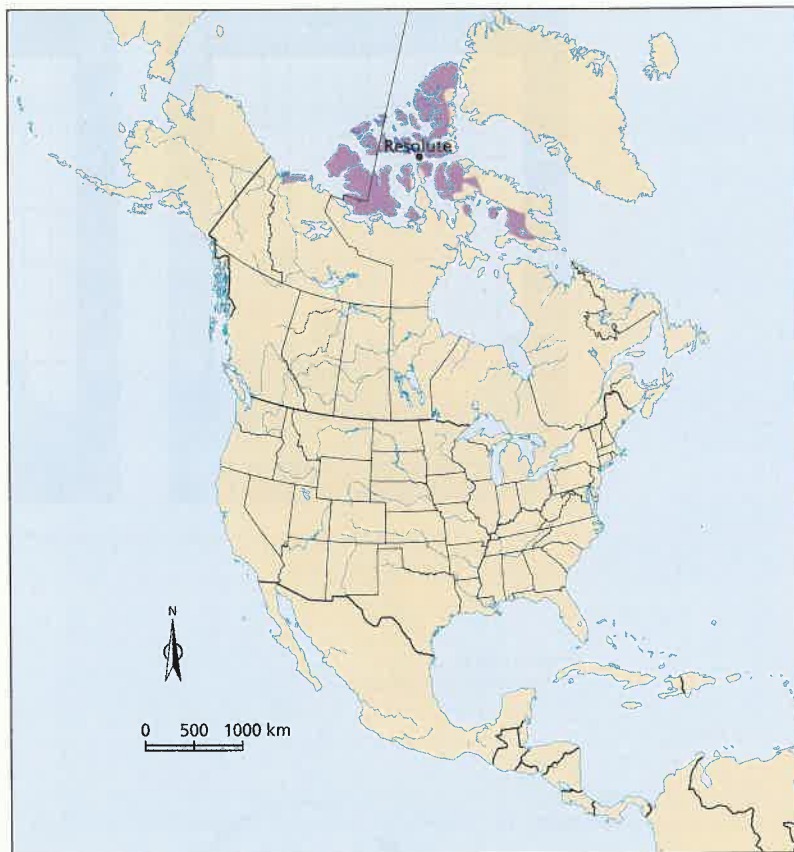
The Arctic Region

The Arctic region is the coldest of all regions of North America, and consists of both lowlands and mountains.

This region contains natural resources such as minerals, oil, and natural gas. However, the fragile nature of the environment and the cold climate make safe resource extraction a challenge.

Did You Know?

The Arctic archipelago (a chain or cluster of islands) consists of 94 major islands and over 36 000 minor islands.



Topography

- Some coastal areas are extremely flat
- Areas such as Baffin Island can also be very mountainous
- Much of the region is made up of an archipelago

Vegetation

- Lichens, mosses, and small shrubs
- Plants are small and stunted and have a very short growing season
- Permafrost means that the ground is permanently frozen to great depths
- Only the top layer of permafrost melts in the brief summer

Climate

- Winters are extremely cold and dry
- Summers are short and cool
- Frosts occur generally ten months out of the year



How did the Inuit adapt to life in the Arctic region?

Because of permafrost, water and sewage must be carried in large above-ground pipes called "utilidors." If such pipes were buried, they would break due to freezing and thawing each year.



The climate of the Arctic has been warming considerably over the past 40 years. Many waterways are now ice-free during the summer months. What effect will a warming Arctic have on human activities in the region?



Using the climate graph data, explain how the Arctic can be considered to be a desert.

