

The Prairie Ecozone



Glossary Words!

- Potholes
- Slough
- Drought
- Badlands
- Grasslands
- Shelterbelt
- Windbreak
- Chinook



Landscape



- The Prairie land is very distinct
- From above, the land appears flat. However, a closer view reveals depressions in the soil (potholes) that are left behind by glaciers.
- Many depressions have become wetlands which support a variety of plant life and wildlife, and help filter chemicals from farming so they don't end up in water supplies.

Landscape



- Other aspects of the Prairie landscape include:
 - River valleys
 - Hills and eroded badlands (an unusual landscape created by the erosion of soft sedimentary rock.)
 - Gently rolling grasslands
 - A mixture of different grasslands
 - SEE: Impressions of the Prairie Ecozone (p128)

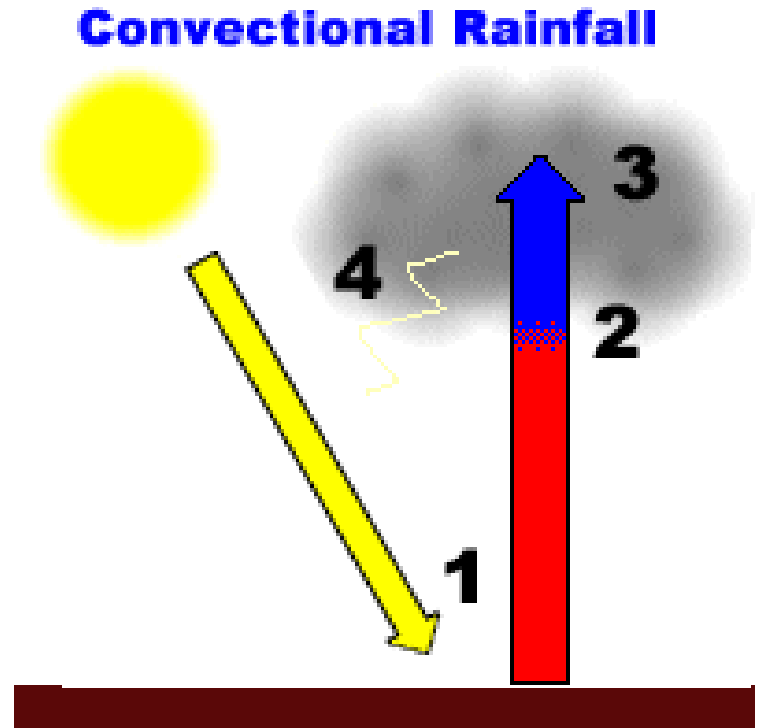
Climate



- The Prairies have a **continental climate**. This is because:
 - They are located in the centre of the continent.
 - The Rocky Mountains to the west act as barriers against rain bearing winds.
 - Dry arctic air masses move in from the north, making the winters long and cold.
 - They are far from the moderating effects of bodies of water.

Convictional Rainfall

- This type of rainfall commonly occurs in the Prairie ecozone, especially during the hot continental summer.
1. Land heats up in the sun, which heats up the air above it.
 2. Warm air rises.
 3. This warm air cools and changes to a liquid and clouds form.
 4. Rain then falls from these clouds.



Vegetation



- Wet and rich nutrient filled areas lead to fertile soil
- Tall grasses grow in wet areas, while shorter grasses grow in drier areas.
- Drought resistant plants such as sagebrush and short grasses grow in drier areas.
- 90% of the Prairie landscape is used for agriculture.

Issue: Disappearing Grasslands



- Less than half of the prairie's original wetlands, potholes/sloughs remain.
- Many have been drained and cleared for farming and urban development.
- This development has led to the disappearance of many of the wildlife in the area.
- Human activities, such as building dams for irrigation, hydroelectricity and flood control, have forever changed the river systems of the prairies.

Grasslands (p.134)

NATURAL VEGETATION TYPE	AMOUNT REMAINING AS A % OF ORIGINAL LAND-COVER	SOIL TYPE	TYPICAL SPECIES OF PLANTS	ENDANGERED SPECIES
Shortgrass prairie	24%	Brown soils	- Short grasses - Sagebrush - Cactus	Swift fox
Mixed-grass prairie	18%	Rich dark-brown soils	- Knee-high grasses - Spear grass - Blue gamma	Burrowing owl
Tall grass prairie	1%	Rich dark-brown and black soils	- Above-your-head tall grasses - Golden Indian grass - Big bluestem	Fringed orchid

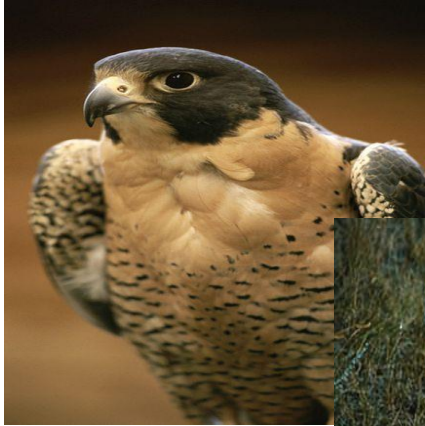
▲ **FIGURE 3.36** This chart shows the three main types of grasslands in the Prairie ecozone. Forty per cent of these patches are smaller than 16 hectares (40 acres). A natural grassland must be at least 80 hectares (200 acres) in size to maintain a balance within the ecosystem and a large enough habitat for most wildlife.

Wildlife



- Plains bison were once plentiful in the prairie ecozone.
- Overhunting in the late 1800's drastically decreased their numbers, virtually wiping them out.
- Today, plains bison are protected in national parks, where their numbers are growing.

Wildlife



- An abnormally large number of animals have disappeared from this ecozone. Many are extinct, extirpated (extinct from certain areas), endangered or threatened because of habitat loss.
- This includes:
 - The grizzly bear (disappeared from area)
 - The swift fox (disappeared from area)
 - The peregrine falcon (endangered in the area)
 - Whooping crane (endangered in the area)

Human Activity



- The gently rolling land of the prairies is suitable for food production
- The grasslands have fertile soil and a long enough growing season for a variety of crops.
- The rivers can be dammed for irrigation and hydroelectricity
- Oil and gas deposits in sedimentary rock are excellent for the mining industries.

Threats



- Modern farmers have almost wiped out keystone species (those that help maintain the function of the ecozone) in the area (swift fox, prairie dogs) much like early settlers almost wiped out the bison population.
- Extensive agriculture uses land and destroys wildlife habitats
- Farming overworks the soil and reduces nutrients
- Wastes from farms and urban areas pollutes the waters.

Threats



- Oil and gas development creates pollution and contributes to greenhouse gas emissions, which eventually changes the climate.
- Dams and reservoirs built for power, flood control and irrigation alter rivers and wildlife habitats.
- Conservation efforts and government regulations aim to restore some wildlife and grasslands.