

Unit II:

Major Continents, Plates, Mountain, Plateau, Plains, Deserts and Islands

Major Continents:

There are 7 major continents in the earth they are

1. **Asia**
2. **Europe**
3. **Australia**
4. **North America**
5. **South America**
6. **Africa**
7. **Antartica**

NorthAmerica

North America, the third-largest continent, extends from the tiny Aleutian Islands in the northwest to the Isthmus of Panama in the south. The continent includes the enormous island of Greenland in the northeast. In the far north, the continent stretches halfway around the world, from Greenland to the Aleutians.

Young mountains—including the Rockies, North America’s largest chain—rise in the West. Some of Earth’s youngest mountains are found in the Cascade Range of the U.S. states of Washington, Oregon, and California.

In between the mountain systems lie wide plains that contain deep, rich soil. Much of the soil was formed from material deposited during the most recent glacial period.

North America contains a variety of natural wonders. Landforms and all types of vegetation can be found within its boundaries. North America has deep canyons, such as Copper Canyon in the Mexican state of Chihuahua. Yellowstone National Park, in the U.S. state of Wyoming, has some of the world’s most active geysers. Canada’s Bay of Fundy has the greatest variation of tide levels in the world. The Great Lakes form the planet’s largest area of freshwater.

Greenland, off the east coast of Canada, is the world’s largest island. Despite its name, Greenland is mostly covered with ice. Its ice is a remnant of the great ice sheets that once blanketed much of the North American continent. Greenland is the only place besides Antarctica that still has an ice sheet.

South

America

South America is connected to North America by the narrow Isthmus of Panama. These two continents weren’t always connected; they came together only three million years ago. South America is the fourth-largest continent and extends from the sunny beaches of the Caribbean Sea

to the frigid waters near the Antarctic Circle.

South America's southernmost islands, called Tierra del Fuego, are less than 1,120 kilometers (700 miles) from Antarctica.

The Andes, Earth's longest terrestrial mountain range, stretch the entire length of South America. Many active volcanoes dot the range.

In northern South America, the Amazon River and its tributaries flow through the world's largest tropical rainforest. In volume, the Amazon is the largest river in the world. More water flows from it than from the next six largest rivers combined.

South America is also home to the world's highest waterfall, Angel Falls, in the country of Venezuela. Water flows more than 979 meters (3,212 feet)—almost a mile. South American rainforests contain an enormous wealth of animal and plant life. More than 15,000 species of plants and animals are found only in the Amazon River basin.

Europe, the sixth-largest continent, contains just seven percent of the world's land. In total area, the continent of Europe is only slightly larger than the country of Canada. However, the population of Europe is more than twice that of South America. Europe has more than 40 countries and many of the world's major cities, including London, the United Kingdom; Paris, France; Berlin, Germany; Rome, Italy; Madrid, Spain; and Moscow, Russia.

Most European countries have access to the ocean. The continent is bordered by the Arctic Ocean in the north, the Atlantic Ocean in the west, the Caspian Sea in the southeast, and the Mediterranean and Black Seas in the south. Early Europeans learned the river systems of the Volga, Danube, Don, Rhine, and Po, and could successfully travel the length and width of the small continent for trade, communication, or conquest.

Mountains

- Nearly 27% of the world's land surface is covered by mountains.
- It is from the mountains that up to 80% of the planet's fresh surface water come from.

Classification of mountains

The mountains, on the basis of their mode of formation, can be classified as:

1. Fold Mountains
2. Block Mountains
3. Volcanic Mountains/ Accumulated Mountains
4. Residual Mountains/ Relict Mountains

Fold Mountains

- Mountain ranges mainly consisting of uplifted folded sedimentary rocks are called Fold Mountains.
- They are formed due to the **force of compression** arising from the endogenic or internal forces.
- **Synclines** (trough) and **anticlines** (crest) are part of Fold Mountains.
- The Himalayas in Asia, the Alps in Europe, the Rockies in North America, and the Andes in South America are the most prominent fold mountains of the world.
- Since these mountain ranges were formed during the most recent mountain building period, they are also known as **Young Fold Mountains**.

Block Mountains

- Block Mountains are also formed by the internal or endogenic earth movements which cause the **force of tension** and faulting.
- The down-lifting or uplifting of land in between two parallel faults results in the formation of Block Mountains.
- A block mountain is also called as **Horst** and the rift valley formed as a result of faulting is called **Graben**.
- **Examples:** The Sierra Nevada in North America, Black Forest Mountains in Germany etc are typical examples of Block Mountains.

Volcanic Mountains or Accumulated Mountains

- The mountains formed by the accumulation of volcanic materials are called as Volcanic Mountains or Mountains of accumulation.
- **Examples:** Mount Mauna Loa in Hawaii Island, Mount Popa in Myanmar, Fuji Yama in Japan etc are some examples.

Residual Mountains or Relict Mountains

□ Some portions of the mountains remain unweathered while its surrounding area gets eroded constantly. This results in the formation of **Residual or Relict Mountains**.

□ **Examples:** Hills like Nilgiri, Palkonda, Parasnath and Rajmahal and Mountains like the Aravalli, the Vindhya, and the Satpura are some of the examples of Relict Mountains in India.

Plateaus

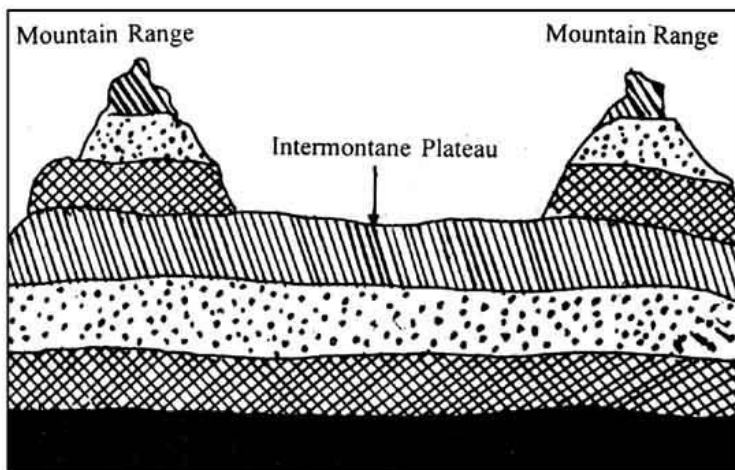
- A plateau is an elevated area with a more or less levelled land on its top. It has a large area on its top and a steep slope on its sides.
- They are also called as **high plains or tablelands**.
- The plateaus cover about 18% of the earth's land surface.

Classification of plateaus

On the basis of their geographical location and structure of rocks, the plateaus can be classified as:

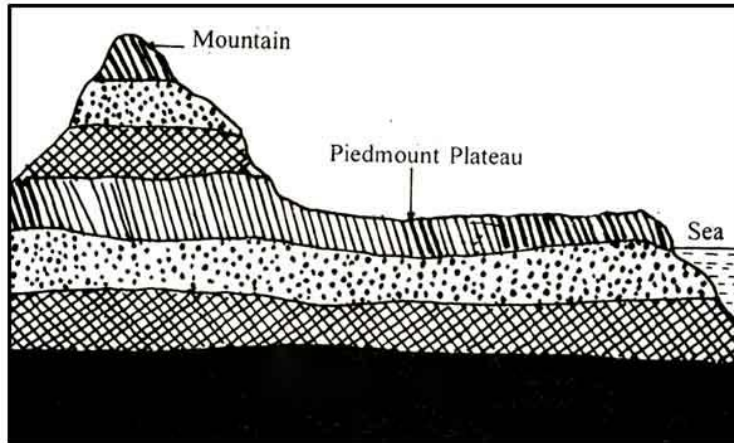
1. Intermontane Plateaus
2. Piedmont plateaus
3. Continental plateaus
4. Volcanic plateaus
5. Dissected plateaus

Intermontane Plateaus



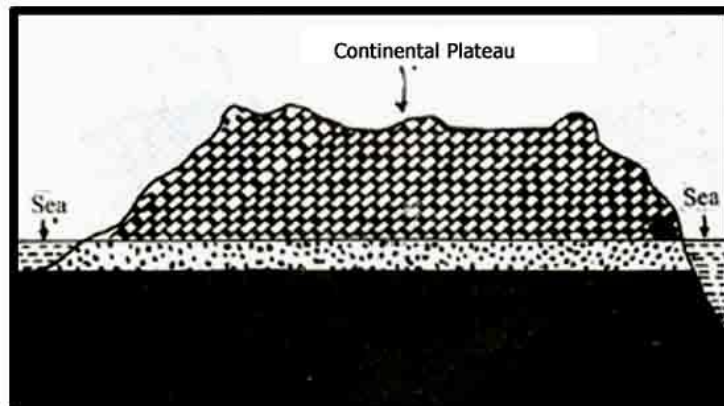
- The plateaus which are bordering the mountain ranges (generally fold mountains) or are partly or fully enclosed within them are the intermontane plateaus.
- The word 'intermontane' means 'between mountains'.
- Intermontane plateaus are the highest in the world.
- They have nearly horizontal rock layers which are raised to very heights by vertical movements of the earth.
- **Examples:** The Plateau of Tibet is an example of the intermontane plateau which is surrounded by the fold mountains like the Himalayas, the Karakoram, the Kunlun and the Tien Shah.

Piedmont Plateaus



- Plateaus which is situated at the foot of a mountain and is locked on the other side by a plain or a sea/ ocean is called as a piedmont plateau.
- The word 'piedmont' means 'foot of a mountain'.
- They are also called as **Plateaus of denudation** as the areas once were high to the level of mountains, have now been reduced to the foot level of the mountain by various agents of erosion.
- **Examples:** The Malwa Plateau is an example of piedmont plateau.

Continental Plateaus



- They are formed either by an extensive continental upliftment or by the spread of horizontal basic lava (less viscous) sheets completely covering the original topography.
- This kind of plateaus shows an abrupt elevation in contrast to the nearby lowland or sea (i.e. more steepness on sides).
- The Continental Plateaus are also known as **Plateaus of Accumulation**.
- **Examples:** Plateau of Maharashtra is an example of the continental plateau.

Volcanic Plateaus

- A **volcanic plateau** is a plateau produced by volcanic activity. There are two main types: lava plateaus and pyroclastic plateaus.
- **Lava plateaus** are formed by highly fluid basaltic lava during numerous successive eruptions through numerous vents without violent explosions.
- **Pyroclastic volcanic plateaus** are produced by massive pyroclastic flows and they are underlain by pyroclastic rocks.

Dissected Plateaus

- A **dissected plateau** is a plateau area that has been severely eroded so that the relief is sharp. Such an area may appear as mountainous.
- Dissected plateaus are distinguishable from orogenic mountain belts by the lack of folding, metamorphism, extensive faulting, or magmatic activity that accompanies orogeny (mountain building).

Plains

- Plains are the most important landforms found on the earth surface.
- A plain is nothing but a low-lying relatively flat land surface with very gentle slope and minimum local relief.
- About 55% of the earth's land surface is occupied by plains.
- Most of the plain have been formed by deposition of sediments brought down by rivers.
- Besides rivers, some plains have also been formed by the action of the wind, moving ice and tectonic activities (Refer exogenic processes).

Classification of plains

On the basis of their mode of formation, plains can be classified as:

1. Structural plain
2. Erosional plains
3. Depositional plains

Structural Plains

- These plains are mainly formed by the upliftment of a part of the sea floor or continental shelf.
- They are located on the borders of almost all the major continents.
- The structural plains may also be formed by the subsidence of areas.

Erosional Plains (Peneplains)

- Erosional plains are formed by the continuous and longtime erosion of uplands.

- The surface of such plains is hardly smooth and hence, they are also called as **Peneplains**, which means almost plain.

Depositional Plains

- These plains are formed by the depositional activity of various geomorphic agents.
- When plains are formed by the river deposits, they are called as **riverine or alluvial plains**.
- The depositions of sediments in a lake give rise to a **Lacustrine Plain or Lake Plains**. The Valley of Kashmir is an example of lacustrine plain.
- When plains are formed by glacial deposits, they are called as **Glacial or Drift Plains**.
- When the wind is the major agent of deposition, those plains are called as **Loess Plains**.

Deserts:

The four main types of desert include

1. hot and dry deserts,
2. semi-arid deserts,
3. coastal deserts, and
4. cold deserts.

In hot and dry deserts, also known as arid deserts, the temperatures are warm and dry year-round. Some famous arid deserts include the Sahara Desert that covers much of the African continent and the Mojave Desert located in the southwest of the United States.

Semi-arid deserts are a bit cooler than hot and dry deserts. The long, dry summers in semi-arid deserts are followed by winters with some rain. Semi-arid deserts are found in North America, Greenland, Europe, and Asia.

Coastal deserts are a bit more humid than other types of deserts. Although heavy fogs blow in from the coast, rainfall is still rare. The Atacama Desert of Chile in South America is an example of a coastal desert.

Cold deserts are still dry but have extremely low temperatures in comparison to the other types of deserts. The Antarctic is an example of a cold desert.

Island:

An island is a body of land surrounded by water.

Continents are also surrounded by water, but because they are so big, they are not considered islands. Australia, the smallest continent, is more than three times the size of Greenland, the largest island.

There are countless islands in the ocean, lakes, and rivers around the world. They vary greatly in size, climate, and the kinds of organisms that inhabit them.

Many islands are quite small, covering less than half a hectare (one acre). These tiny islands are often called islets. Islands in rivers are sometimes called aits or eyots.

Some islands, such as the Aleutian Islands in the U.S. state of Alaska, are cold and ice-covered all year. Others, such as Tahiti, lie in warm, tropical waters.

Tokyo, one of the world's largest cities, is on the island of Honshu in Japan. On another island, Manhattan, rise the towering skyscrapers of the financial capital of the world, New York City.