

## PHYSICAL FEATURES

Europe is a land of varied physical features. The continent can be divided into four major physical divisions:

- \* The Northwestern Highlands
- \* The North European Plains

- \* The Central Uplands
- \* The Alpine System

## The Northwestern Highlands

These highlands extend from Finland, through Sweden, Norway and the British Isles up to Ireland. They are also known as *Caledonian mountains* or *Scandinavian Highlands*. Caledonia was the Roman name for Scotland, and it was in Scotland that these mountains were first studied. These mountains were formed millions of years ago by repeated uplifting and erosion and are amongst the oldest mountains in Europe.

A distinguishing feature of the Northwestern Highlands are the **fiords**. Fiords are the valleys formed by glaciers, which have been submerged by sea. In Norway and Scotland, the Valleys were cut out into the sea; when the ice melted away, these valleys were filled with sea-water to form steep-sided saltwater inlets called *fiords* or *fjords*. These



*Fjords in Norway*

fjords provide good harbours along the western coast of Europe. Fjords are especially common along Norway's coast. The action of glaciers has also created many lakes in the highlands. Besides, there are many small swift rivers which flow down the eastern slopes of the highlands into the sea. These rivers have funnel-shaped mouths, known as **estuaries** which have made the coastline indented (a coastline that is broken by several inlets or creeks).

The Northwestern Highlands are rich in metallic minerals like iron-ore and copper but lack in fossil fuels like coal, petroleum and natural gas. This region is not suitable for farming due to the coarse soils, which have low fertility.

### **The North European Plains**

It is a stretch of flat land that lies towards the south of the Northwestern Highlands. It extends from the Ural mountains in the east to the Atlantic coast in the west. It also includes the Southern part of Britain. These plains are triangular in shape with a broad base in the east and narrow apex in the west.

The North European Plains are bound by the Alpine Highlands in the south, the White sea and the Northwestern Highlands in the north and the Ural mountains in the east. Its westward extension is in the British Isles.

The North European Plains are low, flat, and gently rolling. They are one of the most fertile

areas of Europe due to the fertile soils deposited by a number of rivers. Therefore, agriculture is the major activity in these plains. The important plains in this region include *the Plains of Andalusia* in Spain, *the Hungarian Plain* and *the Plains of Lombardy* in Italy.

Most of the south-eastern Europe comprises the *temperate grasslands*, which extend from Europe into Asia and are called the **Steppes**.

A number of navigable rivers like *Rhine*, *Seine*, *Volga*, *Danube*, *Dnieper* and *Don* flow through the North European Plains. Due to flat relief and availability of enough water throughout the year, these rivers help in the development of inland waterways.

A large number of lakes, formed by the action of glaciers are found in the northern parts of the lowlands. The greatest of these is *Lake Ladoga* in Russia, which is also the largest freshwater lake in Europe.

Some parts of the North European Plains have rich deposits of fossil fuels like petroleum, coal and natural gas. The North sea oil deposits, which are considered to be an extension of the deposits in the North European Plains, form an important source of oil in the area.

### **The Central Uplands**

The Central Uplands lie between the North European Plains and the Alps, stretching from the Atlantic coast of Spain in the west, through



*Rhine River*



**Mt. Elbrus**

France, Germany and Poland. They comprise a belt of mountains, hills and plateaus. The mountains of the region are not very high, with their height not exceeding 1600m above the mean sea level.

The major uplands of this region are the *Meseta* in Spain, the *Massif Central* and the *Vosges* in France, the *Black Forests* in Germany, the *Ardennes* in Belgium and some low ranges in the Czech and Slovak Republics. This region has two broad river valleys formed by the rivers, *Rhine* and *Rhone*, which flow through this region. These rivers are well-connected by a canal, forming an important inland waterway.

### **The Alpine Mountain System**

The Alpine Mountain System refers to the chain of rugged mountains which stretch from the Atlantic Ocean in the west to the Caspian Sea in the east. The Alps form the centre of this system. The Alps is the name for one of the great mountain ranges of Europe dominating Central Europe, including parts of France, Italy, Switzerland, Liechtenstein, Austria, Germany and Slovenia. The highest peak in the Alps is *Mont Blanc*, on the Italian-French border. From the Alps, the mountain ranges branch out in all directions.

Towards the west lie the *Pyrenees* between Spain and France; the *Cantabrian* mountains and the *Sierra Nevada* in Spain; and the *Apennines* which run southwards through the Peninsula of Italy. On the eastern side of the Alpine system, lies the *Caucasus* mountains, between the Black

Sea and the Caspian Sea. *Mt. Elbrus*, the highest mountain peak of Europe is a dormant volcano. The *Carpathian mountains* run in the northwest-southeast direction in the countries of Romania, Ukraine and Poland, whereas the *Balkan mountains* run in east-west direction in Bulgaria.

These mountains ranges have high peaks, steep slopes and long narrow river valleys. They are young fold mountains which have been formed by the compressional forces developing below the earth's crust. Between these mountain ranges, large plains have been created by the material deposited by rivers. Since these plains are surrounded by mountains, they are called *Intermontane Plains*. These include the Plains of Lombardy in Italy, the Great Hungarian Plain and the Plains of Walachia in Romania.

Besides, the Alpine system of mountains has a number of important basins such as the *Po Valley* in the northern Italy and the *Ebro* and *Andalusian Basins* alongside the mountains of Spain. Since these basins can utilise waters from the mountains for irrigation, these basins are of great agricultural importance. Despite their elevation, the Alps are crossed by many passes and most of the highways and rail lines now pass through the Alps.

The Alps have been densely settled for thousands of years. The word 'Alp' in fact, means an 'upland pasture', which indicates the importance that dairying has in this region.

### **Rivers of Europe**

Most of the major rivers of Europe originate in the Alps or in the Central European mountain systems. These include the *Rhine*, *Rhone*, *Seine*, *Po*, *Danube*, *Elbe* and *Vistula*. Rivers of Eastern Europe, flowing mostly to the south, include the *Dneiper*, *Donets* and *Volga*. All the rivers of Eastern Europe, except those in the Mediterranean region, have enough water due to even distribution of rainfall throughout the year. These rivers are an important source of water and hydroelectricity. They also carry enough water to permit transportation all the year round.

Some of the major rivers of Europe are:

- \* **Volga:** It is the longest river of Europe which flows through Russia before joining the Caspian Sea.

- \* **Danube:** It is the second largest river and the only east-flowing river of Europe. It originates in the Black Forest Mountains. It flows in Middle Europe through Austria, Czech Republic, Hungary and the northern part of Serbia and Montenegro and Romania. It is the only river in the world which touches or crosses eight countries.
- \* **Rhine:** It flows in the Rift Valley through Switzerland, Liechtenstein, Austria, West Germany and the Netherlands. It is the busiest waterway of Europe.
- \* **Rhone:** It flows through Lake Geneva of Switzerland.
- \* **Siene:** It is the main river of northern France which flows through Paris.

- \* **Thames:** It is the most important river of England.

### Lakes

There are more than five lakh natural lakes in Europe. Most of these lakes were found by glaciation during the Ice Age. *Lake Ladoga*, the largest fresh water lake in Europe is located in Russia. The other important lakes are *Lake Onega* in Russia, *Lakes Constance* and *Geneva* in Switzerland, *Lake Como* in Italy, *Lake Vanern* and *Vattern* in Sweden and *Lake Saima* in Finland; In fact, Finland alone has more than 5000 lakes and is therefore known as the '*Land of a Thousand Lakes*'.