The Work of Moving Ice Wind and Sea Waves: Objectives, Snow – Fields, Glacier

- We Have Already Learnt in The Previous Lesson About the Gradational Role of Running Water and Underground Water. In Addition to These Two Agents, Moving Ice, Wind, And Sea-Waves Are Also Powerful Agents of Gradation. These Three Agents Also Perform the Threefold Function of Erosion, Transportation, And Deposition.
- They Are Removing the Weathered Material, Transporting It from The Elevated Ground and Are Depositing the Same into Low Lying Areas. This Process Also Tends to Grade or Level Off All the Irregularities on The Surface of The Earth in The Areas of Their Operation.

Objectives

The Major Objectives of This Chapter Are:

- To Define Glacier, Snowline, Snowfield, Continental, And Valley Glaciers
- To Explain the Formation of Main Erosional and Depositional Features Produced by Glaciers with The Help of Diagrams
- To Differentiate Among the Various Types of Moraines
- To Explain the Features Formed by The Wind with The Help of Diagrams
- To Explain the Various Relief Features Formed by Sea Waves with The Help of Diagrams

Snow - Fields

- In Regions Where the Temperature Always Remains Below the Freezing Point, Precipitation Occurs in The Form of Snowfall. Wherever the Rate of Snow Melting or Its Evaporation Is Lower Than the Rate of Snowfall in A Year, The Snow Accumulates into Great Mass of Ice. Permanently Snow-Covered Regions of This Type Are Known as Snowfields.
- They Occur in Polar Regions and on High Mountainous Areas. They Are Always Found Above the Snow Line. Snow Line Is an Imaginary Line Above Which There Is Permanent Snow. The Height of The Snowline Is Not Uniform and Is Affected by Latitude, Amount of Snowfall, Direction of Winds, And Slope.

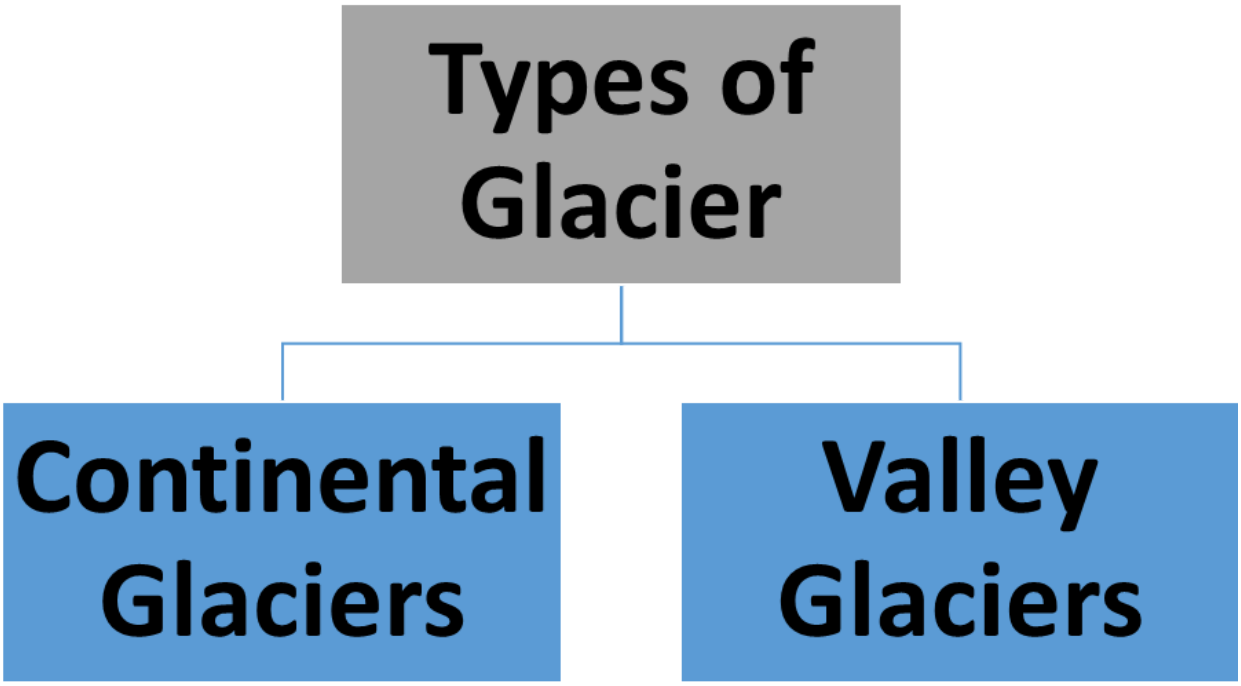
Glacier

- In Region Experiencing Snowfall, The Snow Keeps on Accumulating in Layers One Above the Other. Its Overlying Pressure Is So Great That Snow in Lower Layers Becomes Granular, Hard and Compact.
- The Pressure Also Quickens the Melting of The Snow, Which on Refreezing Starts Turning into A Granular Ice. It Is the Pressure of The Overlying Layers Which Makes This Solid Mass of Ice Mobile.
- This Great Mass of Ice Moving More Under Its Own Weight Is Termed A Glacier. Its Velocity Is Very Low, And It Moves From A Few Centimetres to Few Metres in A Day.

Types of Glaciers

On the Basis of Their Location or Area of Origin, Glaciers Are Divided into Two Types as Follows:

- **Continental Glaciers**: A Thick Ice Sheet Covering Vast Area of Land Is Known as A Continental Glacier. The Thickness of Ice in Such Regions Goes Up to Thousands of Metres. Continental Glaciers Build Up at The Centre and Move Outward in All Directions. They Are Found Mainly in Antarctica And Greenland. The Precipitation in These Regions Occurs in The Form of Snow and It Gets Accumulated Year After Year Because of Relatively Slower Rate of Melting.
- **Valley Glaciers**: When A Mass of Ice from The High Mountainous Regions Starts Moving Down into The Pre-Existing Valleys, It Is Known as A Valley Glacier or A Mountain Glacier. The Shape of The Valley Glaciers Depends on The Valley It Occupies. Where the Valley Is Broad, The Glacier Spreads Outwards and Where the Valley Is Narrow, The Glacier Contracts.
  - The Siachen Glacier in Karakoram Range Is the Longest Glacier in India Which Is 72 Kilometres Long. The Gangotri Glacier in Uttarakhand Is 25.5 Kilometres Long.



There Are Many Smaller Glaciers Varies From 5 To 10 Kilometres in Length Found in Other Parts of The Himalaya. The Rivers of Ganga And Yamuna, Originate from Gangotri And Yamunotri Glaciers Respectively.