

Climatic Regions of the World - Concise Notes

1. Tropical Climates (0°–23.5° Latitude)

- High temperature throughout the year (mean monthly temp above 18°C).
- High solar insolation; small annual temperature range.
- Sub-types:
 - Equatorial (Af) – Heavy rainfall all year (Amazon, Congo Basin).
 - Tropical Monsoon (Am) – Seasonal rainfall with short dry period (South & SE Asia).
 - Tropical Savanna (Aw) – Distinct wet and dry seasons (Sudan, Brazil).

2. Dry Climates (Arid & Semi-Arid)

- Evaporation exceeds precipitation.
- Large diurnal temperature range.
- Sub-types:
 - Desert (BW) – Very low rainfall (<250 mm) (Sahara, Arabian).
 - Steppe (BS) – Semi-arid transitional climate (Central Asia, Sahel).

3. Temperate Climates (Mid-Latitude)

- Moderate temperatures with distinct seasons.
- Influenced by westerlies and cyclonic activity.
- Sub-types:
 - Mediterranean (Cs) – Dry summers, wet winters (Southern Europe, California).
 - Humid Subtropical (Cfa/Cwa) – Hot summers, rainfall year-round or monsoonal (China, SE USA).
 - Marine West Coast (Cfb) – Mild winters, cool summers (W. Europe, New Zealand).

4. Continental Climates

- Large annual temperature range.

- Cold winters and warm summers.
- Found in interiors of continents (Russia, Canada).

5. Polar Climates

- Very low temperatures throughout the year.
- Precipitation mostly in form of snow.
- Sub-types:
 - Tundra (ET) – Short cool summer (Alaska, N. Siberia).
 - Ice Cap (EF) – Permanent ice cover (Antarctica, Greenland).

6. Highland (Mountain) Climate

- Temperature decreases with altitude (Normal lapse rate $\sim 6.5^{\circ}\text{C}$ per 1000m).
- Vertical zonation of vegetation.
- Examples: Himalayas, Andes, Rockies.

Factors Affecting Climate

- Latitude
- Altitude
- Distance from sea (Continentality)
- Ocean currents
- Pressure belts and wind systems
- Relief and topography

Climatic Classification Systems

- Koppen's Climate Classification – Based on temperature and precipitation.
- Thornthwaite Classification – Based on evapotranspiration.
- Trewartha Modification – Improved mid-latitude classification.