

25– 06 – 2023

News: Tundra diversity decline seen with sea ice disappearance

Koepfen Climatic Classification

- Koepfen's classification is based on quantitative values of temperature and precipitation.
- It recognises location and points out the differences that exist between the east and west coast and between the coastal regions and interiors.
- The types of climate have been defined in terms of numerical values.
- The major divisions are denoted by capital letters and small letters are added to indicate other small sub-divisions. The small letter generally conveys special features of the climate.
- Koepfen completed his classification scheme at two stages.
- First, he identified five major groups of climate and represented by capital letters A, B, C, D and E.
- Another capital letter H has been also included to represent the climate of highlands.
- These five major groups of climate have been further sub-divided into a number of climatic types on the basis of temperature and precipitation differences and by adding small letters.

Polar Cold Climates (E)

- Polar climates are those in which the mean temperature of the warmest month is below 10°C.
- These are thus characterised by the absence of a warm period and by long cold conditions.
- This climatic group has been sub-divided into two types—the Tundra Climate in which the warmest month has a temperature above freezing point but is less than 10°C; and the Ice-caps climate in which the warmest month has temperature below 0°C.

The Tundra Climate (Et)

- The Tundra Climate (Et) is found almost exclusively in the Northern Hemisphere occupying the coastal fringes of the Arctic Ocean and many Arctic islands and the ice-free shores of Iceland and Greenland.
- Winters are severe but summers are cool.
- Annual temperature ranges are high.
- Precipitation is in small amount.
- Temperature of the warmest month does rise above 0°C, but never above 10°C.
- As such, the ground may be free from snow, but for a short period.

- The 10°C summer isotherm thus marks the equator ward limit of the Tundra as well as the Pole ward limit of tree growth.
- Only sparse vegetation is possible which comprises grasses, mosses and lichens.

Plants in the Tundra

- There are thousands of species of plants in the Arctic tundra.
- The plants tend to be small and close to the ground. This protects them from strong winds and cold temperatures.
- Some plants that grow in the tundra include lichen, short shrubs, sedges, grasses, flowers, birch trees and willow trees.
- Cushion plants, which, also grow in the tundra, are types of plants that grow low to the ground in tight places. They are called cushion plants because they are soft and cushiony.

Fauna in the Tundra

- Animals that live on the tundra must be able to adapt to very cold temperatures.
- They must also be able to raise their young during the very short summer months.

- Animals found in the tundra include the musk ox, the Arctic hare, the polar bear, the Arctic fox, the caribou, and the snowy owl.
- Many animals that live in the tundra, like the caribou and the semipalmated plover, migrate to warmer climates during the winter. Others, like the arctic ground squirrel, hibernate during the winter months.
- There are very few reptiles and amphibians found in the tundra because the temperatures are so cold.