

CHAPTER 7: Weather, Climate and Adaption of Animal to Climate

Weather, climatic conditions have an effect on our day-to-day life.

➤ Weather report:

- It is a report prepared by the Meteorological Department of the Government by collecting information on temperature, wind, etc.
- The report consists on temperature, humidity and rainfall during the past 24 hours.
- Humidity: it is a measure of the moisture in air.
- Rain gauge: It is a cylindrical instrument with a funnel to collect rainwater, to measure amount of rainfall.
- The temperature, rainfall, humidity is constantly changing from days to weeks.
- Weather: it is a state of atmosphere at a given place with respect to the temperature, humidity, rainfall, wind speed etc.
- The weather reports record the maximum and minimum temperature every day using the maximum and minimum thermometer.
- The maximum temperature can be recorded in the afternoon and minimum temperature is usually recorded early morning
- Changes in the weather are caused by the sun as it is the primary source of energy to all leaving creatures.
- In winters the nights are longer and days are shorter in winter.

➤ CLIMATE:

- Weather patterns are recorded for years to determine climatic condition or changes at a particular place.
- The average weather pattern recorded for a long period is called the climate.

➤ CLIMATE AND ADAPTATION:

- Change in climate lead to adaption in animal and results in evolution.
- Climate also has an effect on the soil.
- The polar region has is located near the north and south pole whereas the tropical rainforest is located near the equator.

(i) The polar regions:

- The poles have extremely cold climate throughout the year and is snow clad at most of the time in the year.
- In winters, the temperature can drop down to below -37°C .
- Animals living in poles have adapted to these extreme conditions.
- Polar bears have white fur to camouflage with snow. It helps them in catching preys as well as protects them from predators.
- The 2 layers of fur and fat under the skin also protects them from extreme cold climate.
- On a warm day, physical activity can lead to overheating in polar bears. The temperature can be brought down by swimming in water.
- The paws are modified to be wide and large which helps to swim and walk in snow.
- They have well developed sense of smell which help them catch its prey

- Penguin is also a white animal which gets a benefit of the snow to hide from the predators.
- Penguins also have a thick skin to protect them from cold climate.
- Penguins have streamlined body and webbed feet to swim.
- The birds cannot tolerate this cold climate so they migrate to warmer region.
- The migratory birds travel a long distance and use landmarks, earth's magnetic field to judge the direction of travel.
- Many fishes and insects also migrate in different season.

(ii) The tropical rainforests:

- these forests are located near the equator due to this reason the climate in these forests is generally quite hot even during the colder months.
- In summers the temperature can get higher than 40°C, at the same time there is good rainfall in these areas.
- The length of day and night is almost same throughout the year.
- In India these forests are found in Western Ghats and Assam, whereas this forest is also found in Southeast Asia, Central America and Central Africa.
- Large Diversity of flora and fauna is found in the rain forest. There is competition for food and shelter
- Animals are well adapted for living on trees e.g., Red-eyed frog has adapted sticky pads on feet which aid in climbing trees.
- The monkeys have adapted long tails to maintain balance on trees.
- Toucan is a bird which has a modified beak which is long, large beak which helps the bird to feed on fruits.
- Other adaptations include sensitive hearing and thick skin in animals like lions and tigers, sharp eyesight, and skin color which helps them to camouflage by blending with the surroundings.
- Elephants:
 - 1) Elephants have adapted to Indian tropical rainforest.
 - 2) The trunk is used as a nose and has sense of smell and collecting food.
 - 3) The tusks are modified teeth which help them in feeding on tree barks.
 - 4) The large ears of the elephant help it hear even minimal sounds in the surroundings.
 - 5) The rainforest has a hot and humid climate
 - 6) The large ears help in maintaining the body temperature.