

Weather, Climate And Adaptations Of Animals To Climate

8

UNIT-III : THE WORLD OF THE LIVING

IN THIS CHAPTER

- *Climate*
- *Adaptation*
- *Hibernation*

INTRODUCTION



The conditions in the atmosphere such as clouds, rain, sunshine and wind. They are changed day-by-day, weak-by weak etc. This is called weather of the place. The weather is such a complex phenomenon that it can vary over short periods of time. It can happen sometimes that it is sunny and it starts raining heavily.

The climate of any place is the average pattern of weather throughout the year. It does not change day by day. It is almost fix throughout the year.

The climate of Rajasthan, Chennai is warm while that in Srinagar, Darjeeling, Shimla is cold.

There are some factors which affect the climate of the place.

- Climate depends on whether winds are hot as cold, dry or humid.
- Amount of moisture in the air.
- Height above sea level, it becomes cooler as we go higher above the sea level.
- Mountain affect winds and rainfall and hence climate is also affected.
- Amount of sun rays also affect the climate.

Do You Know ?

Some scientists believe that dinosaurs once roamed around on the earth and died out and became extinct because they could not adapt to the changing climate.

ADAPTATION

The climate of a place affects the plants, animals and people living there in many ways. Animals, plants and people are adapted to survive in the conditions in which they live. Animals living in very hot and very cold climate must posses special features to protect themselves against the extreme heat or cold. Features and habits that help animals to adapt to their surroundings are a result of the process of evolution.

Adaptations to Hot Climate

- Animals keep themselves warm by many ways.
- Animals living in warm climates, hide themselves in daytime under shady places and come out at night to look for food.
- They have long legs and tails and very large ears. The ears have blood vessels near the surface. The air blowing across the ears cools the blood which in turn cools the body.
- The tropical region has generally a hot climate because of its location around the equator. In the coldest month the temperature does not go below 14°C and during hot months the temperature may cross 45° . Days and nights are almost equal in length throughout the year.

An important features of this region is the tropical rainforests. Tropical rainforests are found in Western Ghats and Assam in India.

Generally monkeys, apes, gorillas, lions, tigers, elephants, leopards, lizards, birds and snakes live in these forests they are highly suitable for supporting an enormous number and a variety of animals.

There are large number of variety of animals that live in these forests.

Therefore, it is intense competition for food and shelter.

Many animals live on the trees. Red-eyed frog has developed sticky pads on it feet to help it climb trees on which it lives.

Monkey has long tail for climbing branches. Their hands and feet are such that they can easily hold on to the branches. They live on the trees.

As there is tough competition for food some animals are adapted to get food not easily reachable. A good example is of bird toucan which possesses a long, large beak. This helps a toucan to reach the fruits on branches which are otherwise too weak to support its weight.

Many tropical animals have sensitive hearing, sharp eyesight, thick skin and a skin colour which helps them to camouflage by blending with the surroundings.



Red-eyed frog



Monkey on the tree



Taucan



Lion and tiger



This helps him to protect from predators. For example, the lion tailed macaque lives in the rainforests of western ghats. Its most outstanding feature is the silver white mane, which surrounds the head from the cheeks down to its chin. It is a good climber and lives most of the time on the trees. It eats mainly fruits but also eat seeds, young leaves stems, flowers and buds. This beard ape also reaches for insects under the bark of the trees.

It gets sufficient food on the trees so it rarely comes down on the ground.



Elephant



Beard ape

Elephant also live in tropical rainforest. It has adapted to the conditions of the rainforests in many remarkable ways. Its long trunk has nose which has strong sense of smell. The trunk is also used by it for picking up food, moreover, its tusks are modified teeth. Large ears of elephant help it to hear even the sound which is very faint.

They also helps the elephant to keep cool in the hot climate of the rainforest.

Adaptations to Cold Climates

All birds have feathers. Feathers protect their bodies from cold. They also migrate to warmer climates in winters. All reptiles such as snake, lizard, etc keep their bodies warm by absorbing solar radiation during the day. They hide at night to keep themselves warm seals that live in cold climates have a thick deposit of fat. It is called blubber that protects them from the cold.

Polar bears have white fur so they are not easily visible in the snow-white background. They are predators. With the help of this they protect themselves. It also helps them in catching their prey. They also have two thick layers of fur which protect them. They also have a fat skin. Physical activities on warm days is necessary. So the polar bear goes for swimming. It is a good swimmer. Its paws are large and wide, which helps it not only to swim well but also walk with ease on the snow. It



Polar bears

can close its nostrils while swimming under water and therefore it can remain under water for long duration.

It has a strong sense of smell so that it can catch its prey for food. So, all such things help polar bears to live in the cold climate.

Penguins live in cold climate. These are also white and merges with the white background. They also have a thick skin and a lot of fat to protect them from cold. Penguins huddle together when it is very cold to this keeps them warm. Penguins are also good in swimming. Their bodies are streamlined and their feet have webs, which make them good swimmers.



Penguins

Some other animals such as reindeers, foxes, seals, birds, whales etc. live in cold regions.

Fishes can remain under cold water for long time. Birds migrate to warmer place and come back when winter is over.

Siberian crane that comes from Siberia to places like Sultanpur in Haryana and Bharatpur in Rajasthan and some wetlands of north east and some other parts of India.

HIBERNATION

Animals that can not migrate to places with a better climate, hibernate throughout the winter. Hibernation is a state of inactivity among animals. It is different from sleep. With normal sleep, the animal moves a little, has a normal body temperature and the heart beats as usual. During hibernation, the heart beat slows down, body temperature lowers and the animal does not move. This helps the animals to conserve energy.

Hibernation may last for several days or weeks depending on the animal's temperature and time of the year.

Bears, chipmunks, skunks and some bats hibernate. The polar bear hibernates in winter. During hibernation it obtains energy from the blubber stored under its skin.





Know the Keywords :

Weather : A short period of time change that takes place in the atmosphere at a given place and time.

Climate : Weather conditions occurring over a long period of time in a given place.

Adaptations : Ways that make it possible for an animals or plant to live in a particular place.

Hibernation : A state of dormancy or in activity that some animals enter into when it becomes extremely cold.

Point to Remember

- The climate of any place is the average pattern of weather throughout the year.
- The weather is such a complex phenomenon that it can vary over short period of time.
- Animals, plants and people are adapted to survive in the conditions in which they live.
- Animals that cannot be migrate to places with the better climate, hibernate throughout the winter.
- During hibernation, the heart beat slows down, body temperature lowers and the animals does not move.

EXERCISE TIME

A. Answer the following questions :

1. Differentiate between weather and climate.
2. What is hibernation ?
3. Write five adaptations of animals living in the cold climate.
4. What are the special features of a red-eyed-frog ?
5. How do elephant living in the tropical rainforest adapt itself ?

B. Some characteristics of animals are given below. Classify them, wheather it is adapted by polar region animals or tropical rainforests animals :

1. Need to migrate _____
2. Strong tail _____
3. Long and large beak _____
4. White fur _____
5. Fatty skin _____
6. Wide and large paws _____

C. Match the following :

Column 'A'

1. Red-eyed frog
2. Monkey
3. Lion-tailed macaque
4. Toucan

Column 'B'

- (i) long, large beak
- (ii) stick pad
- (iii) beard ape
- (iv) long tail

D. Tick (✓) the correct option :

1. The climate of Rajasthan, Chennai is warm while that in Srinagar, Darjeeling, Shimla is :
(i) cold (ii) hot (iii) none of these
2. Features and habits that help animals to adapt to their surroundings are a result of the process of :
(i) crystallization (ii) evolution (iii) climate
3. Tropical rainforests are found in Western Ghats and Assam in :
(i) South Africa (ii) America (iii) India
4. Some other animals such as reindeers, foxes, seals, birds, whales etc live in the regions :
(i) hot (ii) cold (iii) summer
5. A short period of time change that takes place in the atmosphere at a given place and time is called :
(i) climate (ii) season (iii) weather



Creative Work

- **Collect weather report for ten consecutive days in summer and winter and prepare the comparative chart.**