

# 7

## Conservation of Plants and Animals

### TOPICS COVERED

7.1 Deforestation: Causes and Consequences    7.2 Conservation of Forests and Wildlife

### IMPORTANT POINTS TO REMEMBER

- A wide variety of plants and animals are found on this Earth. Different organisms inhabit different habitats.
- All living organisms in their natural habitat comprise wildlife.
- Biodiversity is defined as the variety of plant and animal life found in an area.
- Deforestation is one of the major causes for the loss of habitat and change in population of a species (organisms that are capable of interbreeding). It is done for various reasons and has far reaching consequences.
- In order to save biodiversity, government has created Wildlife sanctuaries, National parks and Biosphere reserves.
- Project Tiger was one such initiative by the Indian government to protect tiger population in our country.
- Plants and animals found in a particular area are termed as its flora and fauna, respectively.
- Due to large scale destruction of habitats and indiscriminate killing of animals, a number of species of plants and animals have become extinct and some are endangered.
- Red Data Book keeps a record of all endangered plants and animals.
- We should save, reuse and recycle paper to save trees, energy and water.

### 7.1 DEFORESTATION: CAUSES AND CONSEQUENCES

**Biodiversity:** It refers to the existence of a wide range of plant and animal life found in an area.

- (a) The plants and animals found in a particular area are termed as its flora and fauna respectively.
- (b) The flora and fauna are very important renewable natural resources. Therefore, they should be managed carefully.

**Threat to Biodiversity:** One of the major threats to biodiversity is loss of habitat due to overpopulation, deforestation, pollution, climate change etc.

**Deforestation:** Clearing of forests to use its land for other purposes is called **deforestation**.

*Causes:* Forests are cleared by humans for

- procuring land for cultivation
- Building houses and factories

- Making furniture or using wood for fuel
- Construction of roads, railways and mining etc

Natural disasters like forest fires, severe droughts, volcanic eruptions, earthquakes, landslides, floods etc also lead to deforestation.

### **Consequences**

- *Increase in temperature of the earth:* Plants use carbon dioxide during photosynthesis. Cutting of trees increases the percentage of carbon dioxide in air that traps the heat rays reflected by the earth (greenhouse effect), thus increasing earth's temperature. This is known as global warming.
- *Lowering of ground water table-leading to floods:* Roots of trees bind the soil and thus helps in absorption of water. Deforestation makes the soil loose so that water holding capacity of the soil reduces. The movement of water from the soil surface into the ground (infiltration rate) is reduced and the water table is disturbed. Rainwater is then not absorbed and runs away taking loose soil with it (soil erosion) which deposits at the bottom of water bodies. It increase the level of water and cause floods.
- *Change in physical properties of soil-leading to desertification:* Deforestation changes the physical properties of soil like texture, nutrient content etc. Cutting of trees leads to soil erosion. Removal of top layer of soil exposes the lower, harder and rocky layers. This soil has less humus and so it is less fertile. Gradually, the fertile land gets converted into a desert. This is called desertification.
- *Loss of habitat:* Forests are the natural habitat for a wide variety of animals. Deforestation disturbs their natural habitat and also causes reduction in the range of food materials available to them. So, the number of animals reduces, causing ecological imbalance.

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## **Exercise 7.1**

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### **I. Very Short Answer Type Questions (1 Mark)**

1. What is biodiversity?
2. *Fill in the blanks:*
  - (a) Flora and fauna together form the \_\_\_\_\_ of a region.
  - (b) Deforestation destroys \_\_\_\_\_ of animals and hence affects wildlife.
  - (c) \_\_\_\_\_ helps in maintaining the ground water level.
  - (d) Deforestation causes loss of habitat of number of animals that leads to \_\_\_\_\_ imbalance.
  - (e) Increase in \_\_\_\_\_ has a drastic effect on the depletion of forests.

### **II. Short Answer Type Question-1 (2 Marks)**

3. List any two causes of deforestation.

### **III. Short Answer Type Questions-2 (3 Marks)**

4. How does deforestation harm the environment? Discuss any three consequences.
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## ANSWERS

1. Biodiversity is defined as the variety of plant and animal life found in an area.
2. (a) Biodiversity (b) habitat (c) Forests (d) ecological (e) population
3. Causes of deforestation
  - (a) Procuring land for cultivation
  - (b) Building houses and factories
  - (c) Making furniture or using wood for fuel
  - (d) Construction of roads, railways, mining etc

Natural disasters like forest fires, severe droughts, volcanic eruptions, earthquakes, landslides, floods etc also leads to deforestation.

4. Consequences of deforestation (any three)
  - (a) *Increase in temperature of the earth:* Plants use carbon dioxide during photosynthesis. Cutting of trees increases the percentage of carbon dioxide in air that trap heat rays reflected by the earth (green house effect) thus increasing earth's temperature. This is known as global warming.
  - (b) *Lowering of ground water table leading to floods:* Roots of trees bind the soil and thus help in absorption of water. Deforestation makes the soil loose

so the water holding capacity of the soil reduces. The movement of water from the soil surface into the ground (infiltration rate) is reduced and the water table is disturbed. Rainwater is then not absorbed and runs away taking loose soil with it (soil erosion) which deposit at the bottom of water bodies. It increases the level of water and cause floods.

- (c) *Change in physical properties of soil leading to desertification:* Deforestation changes the physical properties of soil like texture, nutrient content etc. Cutting of trees leads to soil erosion. Removal of top layer of soil exposes the lower, harder and rocky layers. This soil has less humus and so it is less fertile. Gradually, the fertile land gets converted into a desert. This is called desertification.
- (d) *Loss of habitat:* Forests are the natural habitat for a wide variety of animals. Deforestation disturbs their natural habitat and also causes reduction in the range of food materials available to them. So, the number of animals reduces, causing ecological imbalance.

## 7.2 CONSERVATION OF FORESTS AND WILDLIFE

### Conservation of Forest

- Forest resources should be used rationally and economically.
- They should be protected from accidental fires.
- Felling of trees should be made a punishable offence.

### Afforestation and Reforestation

- Planting trees on a large scale is called **afforestation**. Central and state governments have taken up several afforestation programmes to restore the forest cover and forest wealth.
- Reforestation is restocking of destroyed forests by planting new trees. The trees planted should generally be of the same species .
- It is necessary to create general awareness among the people for forest conservation through media and mass movement.

### Recycling of Paper

- Paper is manufactured from trees. It takes about 17 grown trees to make one tonne of paper. This implies that paper industry is a major cause for

deforestation. Therefore, we should save paper. We can cut down on paper consumption by:

- Using paper sheets carefully, not wasting them unnecessarily and not tearing papers.
- By reusing the used paper.
- By recycling of paper.

Reusing and recycling of paper not only save trees but also saves energy and water used in paper manufacturing.

- The **Forest Conservation Act** empowers the government to protect our forests.

### **Wildlife**

- Animals also form an integral part of the food chain. They are an important source of food, clothing, medicine etc and are hunted not only for necessity but also for pleasure. Animals are being hunted so indiscriminately that many of their species have become either extinct or endangered.
- The species that are on the verge of extinction are called **endangered species**, e.g. Indian rhinoceros, Asiatic lion, lion-tailed macaque, crocodile etc.
- The species that no longer survive on the earth are extinct species, e.g. Dodo, dinosaur, mountain quail, Sikkim stag etc.
- The species of plants and animals found exclusively in a particular area are called **endemic species**. Wild mango and sal are endemic flora and bison, flying squirrel are endemic fauna of Panchmarhi Biosphere Reserve.
- **Red Data Book** contains a record of all those species of plants and animals that are endangered.
- **Migration:** Large scale movement of animals over large distances to escape harsh climatic conditions, in search of food or for breeding is called migration. This movement follows a seasonal pattern. Example of such animals are Arctic tern, monarch butterfly, Siberian crane, flamingo etc

### **Wildlife Conservation**

*Creation of Protected Areas:* Protected areas are undisturbed habitat for wildlife. These include national parks, wildlife sanctuaries and biosphere reserves.

- *National parks:* It is a protected land-area preserved in natural conditions to provide natural habitat to wildlife. Forestry, grazing, cultivation and free entry of people is not allowed in national parks, e.g. Jim Corbett National Park.
  - *Wildlife Sanctuaries:* A sanctuary is a protected land-area reserved for conservation of wild animals and birds. Hunting is strictly prohibited there. For example, Periyar wildlife sanctuary.
  - *Biosphere Reserves:* It is a specified land-area in which multiple use of land is permitted for preserving biodiversity and culture of that area. A biosphere reserve may also contain other protected areas like national parks and wildlife sanctuaries, e.g. Panchmarhi biosphere reserve, which includes Satpura National Park and two wildlife sanctuaries – Bori and Panchmarhi.
  - Satpura National Park is the first Reserve Forest of India. The finest Indian teak is found there.
  - *Wildlife Conservation Act:* It prohibits hunting of endangered species and aims to protect natural habitat of animals.
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## Exercise 7.2

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### I. Very Short Answer Type Questions (1 Mark)

1. Define conservation.
2. What is a species?
3. Why is hunting of tigers banned?
4. (a) If the population of an animal reduces to zero, it will become \_\_\_\_\_.  
(b) If a species is naturally found only in a specific region it is said to be an \_\_\_\_\_ species.

### II. Short Answer Type Questions-1 (2 Marks)

5. What was the aim of Project Tiger?
6. How are endangered species different from extinct species?
7. Ashish stopped his friend, Arun, from buying an ivory decorative item. His mother had told him that buying such things promotes poaching of animals. State any one value displayed by Ashish.
8. Differentiate between a zoo and a wildlife sanctuary.
9. List any two reasons for migration.

### III. Short Answer Type Questions-2 (3 Marks)

10. List any three ways to conserve forests.
11. Why should paper be saved? List any two ways by which you can save paper.

### ANSWERS

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| <ol style="list-style-type: none"><li>1. Wise and judicious use of resources.</li><li>2. Organisms of the same kind that can interbreed.</li><li>3. Tiger is an endangered animal. Thus, its hunting is illegal.</li><li>4. (a) extinct, (b) endemic</li><li>5. Project Tiger is aimed at conserving, maintaining and increasing the dwindling tiger population in our country.</li><li>6. The species that are on the verge of extinction are called endangered species, e.g. Indian rhinoceros, Asiatic lion, lion-tailed macaque, crocodile etc. The species that no longer survive on earth are extinct species, e.g. Dodo, dinosaur, mountain quail, Sikkim stag etc.</li><li>7. Environment consciousness, social responsibility, caring attitude towards animal life.</li><li>8. Zoo is a place where some animals are protected in an artificial habitat for public view. Wildlife sanctuaries are used to protect and conserve wildlife in their natural habitats.</li></ol> | <ol style="list-style-type: none"><li>9. Inhospitable climatic conditions, scarcity of food, for breeding.</li><li>10. Ways of Forest conservation: (<i>Any three</i>)<ol style="list-style-type: none"><li>(a) Forest resources should be used rationally and economically.</li><li>(b) They should be protected from accidental fires.</li><li>(c) Felling of trees should be made a punishable offence.</li><li>(d) <i>Afforestation</i>: Planting trees on a large scale is called afforestation.</li><li>(e) <i>Reforestation</i>: It is the restocking of destroyed forests by planting new trees. The trees planted should generally be of the same species.</li><li>(f) It is necessary to create general awareness among the people for forest conservation, through media and mass movement.</li></ol></li><li>11. Paper is manufactured from trees. It takes about 17 grown trees to make one tonne of paper. This implies that paper industry is a major cause for deforestation. Therefore, we should</li></ol> |
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save paper. We can cut down on paper consumption by:

- (a) Using paper sheets carefully, not wasting them unnecessarily and not tearing papers.
- (b) By reusing the used paper.
- (c) By recycling of paper.
- Reusing and recycling of paper not only save trees but also saves energy and water used in paper manufacturing.

### Did You Know?

- Silviculture is the practice of controlling growth, composition and quality of forests to meet diverse needs.
- World Forest Day is celebrated on 21st March every year.
- Chipko movement is a tree hugging movement born in the 1970s in Garhwal region, UP (now, Uttrakhand). People embrace trees and form a circle around them to prevent them from cutting.
- Besides Project Tiger, our government has also launched Project Crocodile and Project Elephant for the conservation of animals.
- There are two main categories of conservation:
  - (a) In situ conservation involves conservation of natural resources in their natural habitat. For example, national parks, wildlife sanctuaries, biosphere reserves etc.
  - (b) Ex situ conservation involves conservation of natural resources outside their natural habitat. For example, botanical gardens, zoo, seed banks etc.

### HOTS & VALUE BASED QUESTIONS

1. What is Project Tiger? Why was it launched? **(HOTS)**
2. Why do birds migrate? **(HOTS)**
3. What measures are being taken by multinationals and banks to reduce the use of paper? **(HOTS)**
4. During a nature walk, children were advised by their parents not to litter. What values are being inculcated in them? **(VBQ)**
5. Instead of accepting gifts on her birthday, Ria requested her friends to plant saplings in the local park. Why is it a thoughtful gesture? List any two values shown by Ria. **(VBQ)**

### ANSWERS

1. Project Tiger is an initiative undertaken by the government of India. Project Tiger aimed at conserving, maintaining and increasing the dwindling tiger population in our country.
2. To escape harsh climatic conditions, in search of food or for breeding.
3. Emphasis on paperless transactions (net banking, e-mails etc). *(Any two)*
4. Conservation of environment, concept of hygiene, preserving nature in its actual form etc.
5. It is only because of plants that all living organisms survive. It is plants only that give out oxygen that all life forms use to obtain energy. Planting of saplings will increase greenery of the area and reduce pollution. Environment consciousness, considerate, non materialistic attitude, social obligation etc.