

CONSERVATION OF PLANTS & ANIMALS

4

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▶ BIODIVERSITY

- Variety of all living organisms present on earth is called 'Biodiversity'
- Maximum biodiversity occurs in a forest. Forests are home of several kinds of plants, animals & microorganisms.
- The number & types of plants, animals & microorganisms. The number & type of animals & plants depends on the soil & climatic conditions of forest region.

▶ DEFORESTATION

Large scale cutting of trees is called deforestation. It results in loss of habitats of several plants, animals and microorganism living in that area.

◆ **Causes of Deforestation :**

Trees are cut in the forest on a large scale to clear the land for some useful purposes listed below :

- Procuring land for agricultural use.
- Procuring timbers for building houses, roads, railway tracks, dams, etc.
- Procuring land for setting up industries and mining
- Procuring land for setting up special economic zones (SEZ)
- To obtain forest products like wood, food, rubber, honey, resins, etc.

◆ **Consequences of Deforestation :**

The consequences of deforestation on the environment are very serious. Some of the harmful effects are given below

● **Reduced Rainfall :**

Water cycle gets disrupted due to deforestation. The area gets less rainfall which may create drought-like situations.

● **Induces More Soil Erosion :**

The top soil is easily carried away by wind or water in the absence of tree cover, thus increases soil erosion. It is called desertification

- **Imbalance of Atmospheric Gases :**

Deforestation disturbs the balance between carbon dioxide (CO₂) and oxygen (O₂) level in the atmosphere. It results in increase in the concentration of CO₂ which leads to global warming.

- **Change in Climate :**

Deforestation brings about change in climate and increases pollution level on the earth.

- **Natural Calamities :**

Deforestation increases the chances of natural calamities such as floods, droughts, and-slides, cloudburst, etc.

- **Destruction of Natural Habitat :**

Cutting of trees on a large scale destroys the natural habitat of several plants, animals and microorganisms.

- **Scarcity of Forest Products :**

Clearing of trees from forests results in shortage of forest products.

- **Reducing Water Table**

In the absence of tree cover, rainwater cannot infiltrate into the ground to charge the aquifer. It leads to the lowering of ground water level in the absence of replenishment.

- ◆ **Conservation of Forests :**

The following steps should be undertaken to conserve them

- Massive afforestation work should be undertaken to cover large areas of land with appropriate trees.
- Falling of trees in the forest should be banned.
- Every piece of barren land should be planted with trees.
- Weeds, damaged trees, crowded trees, diseased trees, etc, should be removed.
- Forest fire must be prevented.

- Forest nurseries should be established on a large scale

➤ WILD LIFE

Plants, animals and microorganisms which live in nature or are present in their wild natural habitat constitute wildlife.

- ◆ **Causes of Extinction and Depletion of Wildlife :**

- **Indiscriminate Hunting :**

Several species have become extinct due to their hunting by man for food, pleasure and animal products.

- **Destruction of Natural Habitat :**

Man has destroyed the natural habitats of wildlife for his settlement, cropping, plantation, mining and raising of dams, overgrazing by domestic animals, etc.

- **Introduction of Exotic Species :**

Man not only destroys the natural habitat, but also sometimes changes the structure of the biotic community of a place by introducing exotic species of his interest. Such species compete with the native species for food and spaces and may threaten the later with extinction.

- **Forest Fires :**

Setting the forest on fire not only kills the useful animals but also causes large scale destruction of the plant life.

- **Overexploitation of Natural Resources :**

Several animals and plants are valuable sources of food and other materials. Fish, Prawns and crabs constitute an important part of human food. Man has, however, over-exploited these resources. Overfishing in sea is causing a grave situation and the picture is not encouraging with respect to fresh water fishing.

- **International Trade of Animal Products :**

The legal or illegal export or plant and animal products from the developing countries to the affluent countries is an important international trade and has brought several animal and plant species to extinction.

- **Legal lapse :**

The failure of enforcement of the existing laws of wild life management is yet another reason for the rapid depletion of wildlife.

- **Human Ignorance :**

Man is mainly responsible for depletion and extinction of wildlife on the earth. This is largely due to ignorance of the common man regarding the value of wildlife and the probable consequences of the disappearance of wildlife to man himself.

➤ **FLORA & FAUNA**

In a biosphere reserve, you find some animals and plants which normally you may not find in any other area. They constitute its flora and fauna.

- ◆ **Flora :**

- The different types of plants belonging to that area are termed flora. For example sal, teak, mango, jamun, silver ferns and creepers of that area constitute the flora of the area.

- ◆ **Fauna :**

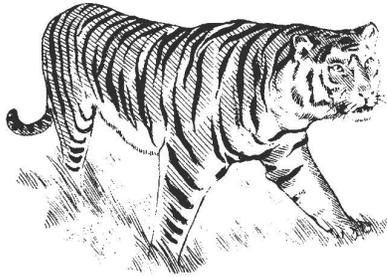
- On the other hand all animals found in that area constitute its fauna, For examples, jackal, bull, wild dog, leopard, species of frogs, insects and others constitute its fauna.
- Besides creating protected areas, sometimes special breeding programmes are carried out to increase the number of a particular species. For example, breeding of crocodiles in Chennai (Madras crocodile trust bank) has been able to produce more than 8000 crocodiles from just 10 crocodiles.

- ◆ **Threatened, Endangered and extinct species :**

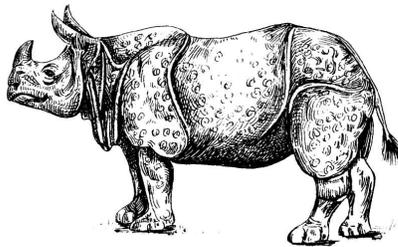
Because of large-scale habitat destruction large number of plants and animals have disappeared and become extinct and many other are waiting to disappear. Before we move further, let us try to know the categories under which these animals are placed. The International Union of Conservation of Nature and Natural Resources (IUCN) have classified the rare animals on the basis of

- Present and past distribution
- Decline in the number of populations in course of time.
- Abundance and quality of natural habitats
- Biological and potential value of the species
- **Extinct :** A plant or animal species which once existed and flourished on the earth, but got exterminated and can no longer be seen on earth.
- **Endangered :** Any species in danger of extinction and whose survival is unlikely if the causal factors continue operating is called endangered species.
Examples: Tiger, elephant, rhinoceros, Indian wild ass.
- **Vulnerable :** The species which are likely to move into the endangered category in the near future, if the causal factors continue operating are called vulnerable.
- **Rare :** Species with small population that are not at present endangered but are at risk of becoming so because of their smaller population.
Examples: Pig tailed Macaque, Snow leopard, Hornbill.

- **Threatened** : Species belonging to any of the categories—endangered, vulnerable or rare are termed threatened. The terms defined above have been provided by IUCN—International Union of Conservation of Nature and Nature Resources. IUCN has listed the threatened species of plants and animals in a book called the ‘Red data book’



Tiger (*Panthera Tigeris*)



Rhinoceros (*Rhinoceros unicornis*)

➤ NATIONAL PARKS

- A national park is characterized by an area reserved for the betterment of wildlife where foresting, grassing or cultivation is prohibited. It protects the flora and fauna of the reserved area. Private ownership is not allowed in a national park.
- In all, these are 97 national parks in India.
- Important National Parks in India

Name of the National Park	State
Jim Corbett National Park	Uttarakhand
Kanha National Park	Madhya Pradesh
Palamau National Park	Jharkhand
Tadoba National Park	Maharashtra
Simlipal National Park	Orissa

➤ SANCTUARIES

- A wildlife sanctuary is aimed at protecting the wild animals.
- In a wildlife sanctuary, cutting of trees for timber and other forest products is permitted to private operators with specific instructions to ensure that the well being of wild animals does not suffers.

➤ BIOSPHERE RESERVES

A biosphere reserve is designed to provide protection to the wild flora and fauna, the domesticated animals and plants, as well as to the traditional life styles of the tribals of the area

Important Biosphere Reserves in India :

- Nilgiri Biosphere Reserve
- Nanda Devi Biosphere Reserve
- Uttarakhand Biosphere Reserve
- Nokrok Biosphere Reserve
- Sundarbans Biosphere Reserve

➤ ZOOLOGICAL PARK

- Zoos are places where animals and birds are protected by keeping them in special cages or enclosures for public exhibition. the animals are fed and cared regularly by zoo authorities.

➤ RED DATA BOOK

- It is a source book which keeps a record of all endangered animal and plants. Separate data books for plants, animals and other different species are being maintained.
- The data books provide useful information about the animals or plant species which are endangered

➤ MIGRATION

- Migration is a regular periodic two way movement of birds and some other animals from their place of residence to some other place along well defined routes. It is usually linked to seasonal factors such as increase or decrease in day lengths, in springs and autumn etc.

➤ NATIONAL FOREST POLICY

- The national forest policy framed in 1952 by government of India aimed to cover one third of total land area of the country under forests.
- In 1980, the national policy was revised and named as Forest Conservation Act. This act aimed at preservation and conservation of national forests and meeting the basic needs of the people

EXERCISE # 1

A. Single Choice Type Questions

- Q.1** The Red Data Book gives an account of -
(A) Endangered plants
(B) Extinct animals
(C) Endangered plants and animals
(D) None
- Q.2** Limited private operations are permitted in -
(A) National Parks
(B) Wildlife sanctuaries
(C) Zoological parks
(D) Biosphere reserve
- Q.3** The great Indian bustard is a -
(A) Rare species
(B) Endangered species
(C) Vulnerable species
(D) Endemic species
- Q.4** Which one of the following is an example of rare species ?
(A) Indian elephant (B) Musk deer
(C) Duck (D) Python
- Q.5** All the plants found in a particular area are termed as -
(A) Flora (B) Fauna
(C) Trees (D) Garden
- Q.6** Consequences of deforestation is -
(A) Reduced rainfall (B) Desertification
(C) Global warming (D) all of these
- Q.7** Which steps should be taken for the conservation of forests ?-
(A) Ban on felling of trees
(B) Prevention of forest fire
(C) Plantation on barren land
(D) All of these
- Q.8** The “Sangai” of Manipur is a
(A) Great pied hornbill
(B) Back-necked crane
(C) Brow antlered deer
(D) actionated python
- Q.9** Dechigam sanctuary is located in
(A) W. B. (B) M.P.
(C) J. & K. (D) Rajasthan
- Q.10** Sarus is also known as
(A) crane (B) spotbill
(C) plovers (D) flamingoes
- Q.11** Which one of the following pairs of geographical areas show maximum biodiversity in our country ?
(A) Kerala and punjab
(B) Sunderbans and Rann of kutch
(C) Eastern ghats and west bengal
(D) Eastern himalaya and western ghats
- Q.12** The Giant panda feeds mainly on the leaves of
(A) Banana (B) Mulberry
(C) Pomegranate (D) Bamboo
- Q.13** According to IUCN red list. What is the status of red panda (*Ailurus fulgens*)
(A) Extinct species
(B) Vulnerable species
(C) Endangered species
(D) Critically endangered species
- Q.14** Biodiversity Act of India was passed by the parliament in the year
(A) 1992 (B) 1996
(C) 2000 (D) 2002

- Q.15** Hoolock Gibbon (India's only ape) is found in :
- (A) Kanha National Park
 (B) Bharatpur Birds Sancturay
 (C) Kaziranga National Park
 (D) Jim Corbett National Park

- Q.16** Match List I with List II and select the correct answer using the codes given below the lists

List I	List II
A Rhino	1 Thar desert
B Wild ass	2 Karnataka
C Solth bear	3 Mount Abu forests
D Bison	4 Foot hills of Himalaya

- (A) A = 2, B = 3, C = 1, D = 4
 (B) A = 4, B = 1, C = 3, D = 2
 (C) A = 1, B = 2, C = 3, D = 4
 (D) A = 3, B = 4, C = 2, D = 1

- Q.17** Species listed in Red Data Book are
- (A) Threatened (B) Endangered
 (C) Rare (D) All of these

- Q.18** Bandipur National Park is associated with
- (A) Tiger (B) Deer
 (C) Elephants (D) Rhinoceros

- Q.19** Which of the following is not an endangered species ?
- (A) Peacock
 (B) Indian Rhino
 (C) Asiatic lion
 (D) Great Indain bustard

- Q.20** Periyer wildlife Sancturey is located in :
- (A) Kerala (B) Tamil Nadu
 (C) Karnataka (D) Andhra pradesh

- Q.21** Asiatic wild ass is found in
- (A) Ladakh
 (B) Rann of Kutch
 (C) Thar desert
 (D) Garhwal mountains of Himalayas

- Q.22** Which of the following is an endangered species of India ?
- (A) Fox (B) Elephant
 (C) Horse (D) Indian wild ass

B. Fill In The Blanks

- Q.23** Organism in their natural habitat are called _____

- Q.24** A species with very small population all over the world is called a _____ species

- Q.25** _____ is a protected area where wild animals cannot be killed.

- Q.26** There are _____ biosphere reserves in India

- Q.27** The _____ Book gives information about the endangered species

EXERCISE # 2

A. Very Short Answer Types Questions

- Q.1 Name two endangered species of animals.
- Q.2 Write the names of two national parks located in India.
- Q.3 Expand the abbreviation IUCN.
- Q.4 Name two vulnerable species.
- Q.5 How many biosphere reserves have been set up in India?
- Q.6 What information do we get from the Red Data Book?
- Q.7 What are endangered species? Give two examples
- Q.8 Name one migratory bird which comes to India in every summer
- Q.9 What is a wild life sanctuary? Name any two wildlife sanctuaries of India.

B. Short Answer Types Questions

- Q.10 What are the three main causes of deforestation?
- Q.11 What role does wildlife sanctuary play in protecting wildlife?
- Q.12 What steps do you suggest for the conservation of forests?
- Q.13 What is a biosphere reserve?

Q.14 How does destruction of natural habitat affect the wildlife?

Q.15 In what way is a biosphere reserve different from a sanctuary?

Q.16 Why do people go for hunting?

Q.17 What is migration?

C. Long Answer Types Questions

Q.18 What is meant by migration? Name two migratory birds.

Q.19 Write a short note on Project Tiger.

Q.20 Explain how wildlife is responsible for the maintenance of environment

Q.21 State the difference between endangered and endemic species by giving appropriate example

Q.22 What is migration? Explain it with appropriate examples.