

MODULE 27 – ENDANGERED COMMON PLANT AND ANIMAL SPECIES

OBJECTIVES

By the end of the session the students shall be able to learn about:

1. The most common plants and animals of India.
2. What are endangered species.
3. Different categories of threatened species.
4. Endangered common plant species.
5. Endangered common animal species.
6. IUCN and Red Data Book.

SUMMARY

This film deals with endangered plant & animal species which pose a great threat to biodiversity. IUCN has done a great service by publishing red data book to warn different countries about threatened species under different categories. Some important endangered species of plants & animals have been listed. It is the bounden duty of the govt. as well as elite of every country to protect the biodiversity for a safe & bright future.

TRANSCRIPTION

Introduction:- Increasing human population increases human resources but becomes a curse for natural resources as it needs more food and other natural resources for its survival. The result is that the natural resources are getting depleted day by day. Forests are cut & converted into residential colonies where cement and concrete jungles are erected in the form of multistoried buildings. Mining activities, urbanization, industrialization, construction of dams, construction of roads directly disturbs the nature and natural resources. Uncontrolled use of chemical fertilizers like NPK “Grow more” and urea have polluted air, water as well as soil. The result is that several plant & animal species have become endangered. Poaching of wild life by man for fur, feathers, flesh and fun has eliminated several species of wild animals in nature. In the second half of twentieth century it was realized that plants and animals are interdependent and for the existence of man ecological balance and maintenance of biodiversity is essential. Disturbance in ecological balance is a great threat to biodiversity resulting in extinction of natural plant & animal species. Such species which are facing the danger of extinction are called endangered species. We know very little about the species diversity of our country. Most of us have an idea about the plight of a few prominent large mammals like Tiger and furniture utility plants like Teak, but we have to take care of the threat to lesser known species of animals & plants. India's wild life has to be conserved for future generations too.

Some common species of plants in India:-

1. **Teak:-** A common tree of deciduous forest, valued for excellent furniture. It was cut down during the British period. British selected reserve forest for teak cultivation. These days Teak tree is grown extensively by the forest department.
2. **Figs:-** The Peepal, Banayan, Goolar and other species of Ficus are popularly known as figs. They bear fruits throughout the year in large numbers and they are considered as keystone species because they support a major part of food web. During the time of food scarcity these fruits are eaten by monkeys, birds, bats & other vertebrates. Thus Figs play a vital role in controlling the relative abundance of several animals. Removal of Figs will disturb the functioning of other species.
3. **Tamarind:-** The most common roadside tree in south India and other parts of India. Its life has been estimated up to 200 years. The tree is preferred for its sour fruits used in pickle, sauce, Rasam & Sambhar. It is also a good shade tree. Its sour taste is due to tartaric acid.
4. **Flame of the forest:-** A common deciduous tree popularly known as Flame of the forest. The bright red flowers are full of nectar which attract monkeys and nectar dependent birds. Leaves are used to prepare Indian plates and cups. It is also a source of lac because lac secreting insect Tachardia Lacca is reared upon it.
5. **Orchids:-** Orchids are valued for their beautiful flowers. In India there are about 1500 species of orchids out of which 700 are in staggering stage due to their over exploitation by man.
6. **Lotus:-** It is an aquatic plant with a large flower at the tip of a long stalk. It has several petals- Pink, violet or white in colour. It is the national flower of India.
7. **Bamboo:-** It is the tallest grass used to construct huts and prepare light weight furniture, baskets and musical instruments. Assam is well-known for bamboo cultivation. It is food for elephants and herbivores like Deer. The best quality of ledger paper is prepared from it.

Some common Animal species in India

Mammals

Mammals are animals which possess mammary glands. They give birth to young ones & suckle them by their breast milk in young age. In India the most common mammals are deer species. They are all herbivores & include:

- a. Sambhar:- They live in small family groups in hilly forest areas. It is dark brown in colour with large thick antlers each having 3 branches.
- b. Cheetal:- These are spotted deer which live in large herds in forest clearings where it feeds on grass. The body of Cheetal is rust brown with white spots. Each antler has 3 branches.
- c. Hangul deer:- Found only in Kashmir the antlers have 6 branches.
- d. Barasingha:- It is swamp deer with wide hoofs which enable this beautiful animal to live in marshy and low lying areas of the foothills. Each antler has 6 or more branches. It is declared as state animal of M.P.
- e. The barking deer:- It is a small herbivore whose call sounds like bark of the dog. It has short antler with only 2 branches.

- f. The black buck:- This is the only true antelope found in India. It lives in large herds. The males are black on top and cream below. They have beautiful spiral horns that form a v shape.
- g. The Chinkara:- It is also known as Indian Gazelle. It is a small animal, pale brown in colour with beautiful curved horns.
- h. The Chausingha:- It is a rare type of deer. It is the only animal in the world with 4 horns.
- i. Neelgai:- A large animal with white markings on legs and head. It has short strong spike like horns. The males are blue grey in colour.
- j. The Indian wild ass:- It is endemic to little Rann of kutch.
- k. The one horned rhinoceros:- It was once very common throughout Gangetic plains but is now restricted to Assam.
- l. The Tiger:- It is the best known predator of Indian forests. It has golden and black stripes which hide it in the forest undergrowth. It preys on herbivores such as sambhar and cheetal as well as domestic animals. It kills only 3 or 4 times a month. Its number has declined due to poaching for its superb skin and for the supposed magical value of its teeth claws and whiskers Chinese are using its bones for medicinal value.
- m. The snow leopard:- It is a typical predator of the Himalayas but now is very rare. It is poached for its beautiful skin which is pale grey, with dark grey ring like markings.
- n. The wolf:- It is a carnivore which prefers domestic sheep as its prey, that's why the shepherds constantly devise ways to kill them hence they are now a threatened species.
- o. Lion tailed macaque:- It is a small monkey found in Southern western ghats & Annamalai ranges. It is black in colour, has long hair, a grey mane & tassel at the end of its tail that looks like a lion's tail. It is now rare.

Birds

- 1. The Great Indian Bustard:- It is a large brown stately bird with long legs. It feeds upon locust & grass hopper. It is now considered to be a threatened species.
- 2. Vulture:- These are large flying birds well known for their sharp vision. They are scavengers of nature because they feed upon dead bodies of animals. Their number has decreased due to diclophenac. Govt. should ban this drug if population of vultures is to be restored.
- 3. Ducks and Geese:- These are birds with webbed feet and shining feathers. They are losing their habitat due to water pollution by detergents. In such water the waxy coating of their feathers gets dissolved and they are unable to swim.

Reptiles

These are creeping animals such as Lizards, Snakes, Turtles, Tortoise, Crocodile & Gharial. Most of these are threatened due to trade in reptile skins. Crocodile is the largest reptile of India while Gharial (Alligator) is fish eating crocodile endemic to India. Crocodile and alligators are poached for their priced skin and so are highly threatened.

Amphibians

These include Frog, toad, Indian Bull Frog, Tree Frog found in the hot spots of north east & western ghats. Their population is affected by green house effect.

Insects

Honey bees & Butterflies are the most common pollinators. Due to spray of insecticides the population of these insects has decreased. This has affected fruit production and survival of such plants which are pollinated by them. Farmers are advised to keep sugar syrup or Jaggery syrup in their orchards to attract honey bees.

Marine Life

Marine animals include fishes, crabs, prawns whales sharks and dolphins. Fishes are seriously affected by pollution and over harvesting. Mahasher, a fish about 1 meter long, is now endangered. Whale and Dolphins once found in plenty in Indian Ocean are now threatened by extinction.

Endangered Plant species

Threats to biodiversity are ultimately associated with the extinction of a species. According to Peter H. Reven of USA, extinction of one plant species results in the extinction of 20 to 30 species of plants, insects & higher animals.

Extinction is of three types:-

1. **Natural Extinction:-** Due to change in the climate some species disappear and others which are more adapted to the changed conditions take their place. Natural extinction is a slow process. This has occurred in the geological past. Trees like *Lepidodendron*, *Bothrodendron*, *Sigillaria* which dominated in carboniferous period of Paleozoic era (80 million years back) have become extinct in nature.
2. **Mass extinction:-** Mesozoic era (6 million years back), popularly known as the age of Dinosaurs in Zoology and age of cycads in Botany, is an example of mass extinction. Due to catastrophe Dinosaurs the most dominant reptiles became extinct. Several cycads also became extinct e.g. *Paleocycas*. Some cycads could survive due to efforts of man e.g. *Cycas circinalis*. Such species which survive due to efforts of man are called Living fossils. The film Jurassic Park deals with Dinosaurs.
3. **Anthropogenic Extinction:-** Disappearance of the species of plants & animals due to human activities is called anthropogenic extinction. This is a great danger to biodiversity because it occurs within a short period of time e.g. extinction of Cheetah and extinction of Dodo, a non flying bird and *Calveria major*. It is in the second half of the 20th Century that the importance of threats to biodiversity was realised and International Union for Conservation of Nature and Natural Resources or the "World Conservation Union" was organized at Morges in Switzerland to look after the loss of biodiversity.

The number of plant species in different categories in India is as under:-

1. Critically endangered.....44
2. Endangered.....113

3. Vulnerable.....	87
4. Lower risk.....	73
5. Data deficient.....	14

Total.....331

At world level there are 5611 threatened species of plants belong to the above 5 categories that means India accounts for 17% the threatened species of plants at world level.

Some examples of threatened plant species of India are as under:-

1. Eulophia mackinnonii.
2. Ligusticum alboalatum
3. Heracleum jackuemonii.
4. Phlebophyllum jeyporensis
5. Tectona grandis
6. Ficus benghalensis
7. Shorea robusta
8. Rauolfia serpentina
9. Cinchona ledgeriana
10. Colchicum autumnale
11. Santalum album
12. Plantago ovata
13. Cannabis sativus
14. Euphorbia royleana
15. Urtica dioica
16. Thymes serpyllum
17. Fraxinus floribunda
18. Sapindus saponaria
19. Pterospermum acerifolium
20. Nepenthes khasiana.

Endangered common animal Species:-

At world level there are 5485 species of animals considered to be threatened (critically endangered, endangered, vulnerable lower risk and data deficient)

In India the category wise number of threatened animal species is as under:-

1. Critically endangered.....	18
2. Endangered.....	54
3. Vulnerable.....	143
4. Lower risk.....	109
5. Data deficient.....	31

Total.....355

That means threatened species of animals in India are almost 7%.

Some examples of threatened species in India are :-

1. Mammals :- Tiger, Elephant, Rhino, Pigmyhog, Red Panda, Black buck, Indian wild ass, Kashmir stag (hangul), golden langur, musk deer, hyena, sambhar, sloth bear, Lion tailed macaque.

2. Birds:- Siberian white crane, Mountain quail, great Indian Bustard and florican, vulture, peacock, peahen.
3. Amphibians:- Frog & Tree frog.
4. Reptiles:- Flying lizard, chameleon, skunk, star tortoise, Travancore tortoise, crocodile, gharial, green sea turtle, python.
5. Marine animals:- Whale, shark, Dolphin.

GLOSSARY

1. Endangered - Under danger
2. Poaching - Hunting
3. Extinction - No longer in existence
4. Deciduous tree - Shedding leaves
5. Key stone species- Less in number but supporting major part of food web.
6. Scarcity - Shortage
7. Staggering - Jottering
8. Over exploitation - Misuse
9. Herbivores - Dependent on plant
10. Suckle - Feed from breast or udder
11. Antlers - Branched horn of a stag
12. Boggy - Marshy
13. Rhinoceros - Wild buffalo
14. Lion tailed macque- A small monkey having tail similar to lion.
15. Scavanger - Which remove refuse
16. Living fossil - Such plants or animals which have been fossilized in nature but survive due to efforts of man
17. Toxic - Poisonous
18. Falcon - Small hunting Hawk
19. Silviculture - To cultivate forest trees

20. Pharmacology - Action of drug on body part

21. Dinosaur - Extinct large Reptile

22. Skink - A kind of Small Lizard

23. Guano - Manure made from excreta of bird

F.A.Qs.

Q.1. List 5 such activities which directly disturb the nature & the natural resources:

Ans. 1. Mining

2. Urbanisation.

3. Industrialization.

4. Construction of dams.

5. Construction of roads.

Q.2. List of 2 Sources which cause pollution of air, water as well as soil?

Ans.1. Pesticides.

2. Fertilisers.

Q.3 Why poaching of wild life is done?

Ans. To obtain flesh, fur & feathers.

Q.4 What are endangered species?

Ans. Such plants & animals which are facing the danger of extinction are called endangered species.

Q.5 Name some common trees of India.

Ans. Teak, Sal, Tamarind, Flame of the forest.

Q.6 Which state in India is well known for maximum varieties of Bamboo?

Ans. Assam.

Q.7 List some common mammals of India found in wild conditions.

Ans. Sambhar, cheetal, Hangul deer, Barahsingha, chinkara, Neelgai.

Q.8 To which state of India one horned rhinoceros is restricted?

Ans. Assam.

Q.9 What are peculiar features of the skin of Tiger?

Ans. It has golden & black strips.

Q.10 How many times a month the tiger carries on hunting?

Ans. 3 or 4 times.

Q.11 Name a bird which is considered as threatened species.

Ans. The great Indian Bustard.

Q.12 What is native home of snow Leopard?

Ans. Himalays.

Q.13 Name the largest reptile of India?

Ans. Crocodile.

Q.14 Why Crocodile is hunted by man?

Ans. For its Valuable skin.

Q.15 Which insects have deycreased in number due to spray of pesticides.

Ans. Honey bees and Butterflies.

Q.16 Name some marine animals affected by marine pollution.

Ans. Whale, shark & Dolphin.

Q. 17 What is IUCN?

Ans. International Union for Conservation of Nature & Natural Resource.
The headquarter of this organization is at Morges (Switzerland) & it took
after the Conservation of biodiversity.

Q.18 What is the new name of IUCND.

Ans. World Conservation Union.

Q.19 What is “ Red data book”?

Ans. It is the book published by IUCN in which the list of endangered
species of animals & plants is published.

Q.20 List 8 threat Categories.

Ans. 1. Extinct.

2. Extinct in the wild.

3. Critically endangered.

4. Endangered.

5. Vulnerable.

6. Lower risk.

7. Data deficient.

8. not evaluated.

Q.21 Name one plant and one animal which became extinct during
Mesozoic era?

Ans. Plant- Paleocycas

Animal- Dinosaur.

Q.22 Name a plant which is extinct in the wild.

Ans. Ginkgo biloba.

Q.23 Name one plant & one animal species which are critically
endangered.

Ans. Plant- *Berberis nilghiriensis*.
Animal *Sus Salvanius* (Pigmy hog).

Q.24 Name one plant & one animal species classified as endangered.

Ans. Plant- *Bentinckia nicobarica*
Animal- *Ailures fulgens* (Red Panda).

Q.25 Name one plant & one animal species which are vulnerable.

Ans. Plant- *Cupressus Cashmeriana*.
Animal- *Antilope cerviarpa* (Black buck).

Q.26 Name one plant & one animal of low risk category.

Ans. Plant- *Nepenthes Khasiana*
Animal- Vulture.

Q.27 Name a threatened plant & animal which came under the cateroty of data deficient.

Ans. Plant- *Santalum album* or Sandal wood tree.
Animal- Great Indian Bustard. It is a bird.