

Unit – II

Threats to Biodiversity

By:

Dr. Parveen Kumar

Asst. Professor

Contents

- **Introduction**
- **IUCN categorization**
- **Threats to biodiversity:**
 - Destruction of habitat
 - Hunting for commercial products
 - Over exploitation
 - Collection for zoo and research
 - Introduction of exotic species
 - Control of pests and predators
 - Pollution
 - Other factors
- **Ecological factors**
- **Further readings**

Introduction

Biodiversity – The sum of all the species of plants, animals, fungi, and micro-organisms living on earth in either terrestrial or aquatic habitats



IUCN Categorization

Based on **history of distribution**, **decline in number of individuals**, **nature of habitat**, and **potential value of species**:

- ✓ **Endangered (E) species:** These are represented by fewer individuals because of unfavourable environmental or human factors. If the same continue to operate as before these species would become extinct soon.
- ✓ **Vulnerable (V) species:** These are having sufficient number of individuals. However, in near future, they may represent E species, if unfavourable conditions in environment continues to operate.

Endangered Species



Great Indian Bustard



Rhino



Asiatic Lion

Vulnerable Species



Golden Toad



Black Buck



Lion Tailed Macaque

- **Rare (R) species:** The species with small world population are not at present endangered or vulnerable but are at risk. Such species are usually localized within **restricted geographical areas** or are **thinly scattered over large area**.
- **Threatened (T) species:** This word is used for species which fall in one of the three categories i.e. **E, V, R**.

Rare Species



Nilgiri Tahr



Flying Squirrel



Indian Fruit Bat



Red Panda



Nilgiri Marten

Threats to Biodiversity

- ❑ **Destruction of habitat**
- ❑ **Hunting for commercial products**
- ❑ **Over exploitation**
- ❑ **Collection for zoo and research**
- ❑ **Introduction of exotic species**
- ❑ **Control of pests and predators**
- ❑ **Pollution**
- ❑ **Climate change**

Destruction of Habitat

- Human settlement
- Grazing grounds
- Agriculture
- Mining
- Industries
- Highway and railways
- Drainage
- Dams

Species must either **adapt** to the change, **move** elsewhere or succumb to **predation**, **starvation**, or **disease** and eventually die.



© 2001 Brookdale College - Thomson Learning



World Geography



Hunting for Commercial Products

Wildlife is killed for following products:

- Hides and skins
- Tusks
- Fur and meat
- Pharmaceuticals
- Perfumes and cosmetics
- Decoration

Black rhino (Africa): Horn, Spotted cats: Fur, Musk deer: Musk (Medicinal value), Elephant: Ivory, Gharial and crocodile: Skin, Jackal: Fur.

CITES: Convention on International Trade in Endangered Species of Flora and Fauna (1975)

Indian species: Fin Whale, Musk deer, Green Turtle, Salt water Crocodile, Desert Monitor Lizard, Bengal Monitor lizard





Over Exploitation

- Excess harvesting of marine organisms such as **fishes**, **molluscs**, **sea-cows**, and sea-turtles has resulted in extinction of these animals.



Collection for Zoo and Research

- Animals and plants are collected throughout the world for zoos and biological research in science and medicine.
- ✓ **Primates** – Monkeys and chimpanzees



Introduction of Exotic Species

- Native species are subjected to competition for food and space due to introduction of exotic (**outside**) species.

Control of Pests and Predators

- **Pesticides** kill non-target organisms and affect balanced ecosystems.

Pollution

- **Pollution** alters the natural habitat. Water pollution is specially injurious to the biotic components of estuary and coastal ecosystems.
- **Toxic wastes** entering water bodies disturb the food chain and aquatic ecosystems.
- **Pesticides** affect plants and animal species severely.

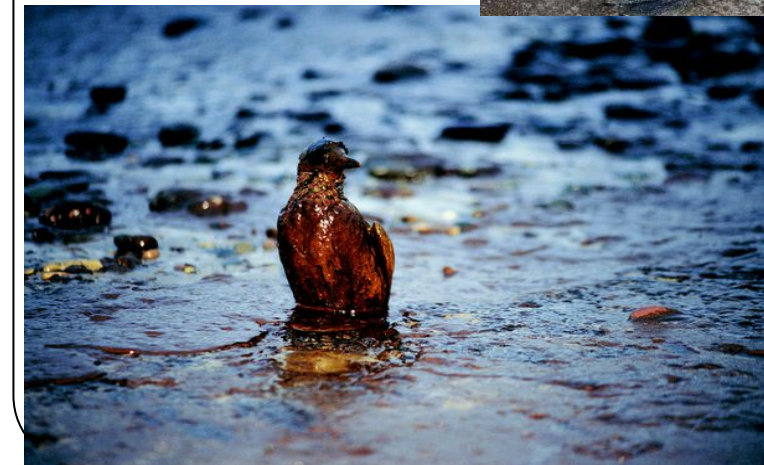




From the Arctic to Antarctica, ocean debris is killing marine wildlife—but we still have the power to stop plastic pollution.

The photograph depicts the bird, an albatross, covered in plastic debris. The bird was found dead on a beach in California, where it likely ingested the material or became entangled in it. Photo by David H. Johnston.

a Plague of Plastics



Other Factors

- **Climate change**
- **Natural disasters**
- **Fire**
- **Flood – Natural and Man made**
- **Drought**
- **Landslides**
- **Severe storm**
- **Heat and cold waves**



Ecological Factors

Ecological factors are contribute in species extinction as below:

- **Distribution range:** The smaller the range of distribution, the greater the threat of extinction.
- **Degree of specialization:** The more specialized an organism is, the more vulnerable it is to extinction.
- **Position of the organism in the food chain:** The higher the organism is in food chain, the more susceptible it becomes.
- **Reproductive rate:** Large organisms tend to produce fewer off-springs at widely spaced intervals.

Further Readings

- Causes of loss of biodiversity,
<https://www.saveearth.info/loss-of-biodiversity/>



Thank you for attention!!!

1. The two core threats to biodiversity are:

- a) Human population growth and climate change
- b) Human population growth and unsustainable resource use
- c) Exotic species and climate change
- d) Unsustainable resource use and exotic species

2. Which one of the following is the cause for man-wildlife conflicts?

- a) Reduction in the availability of natural food resources
- b) Increase in the forest area
- c) Adequate rainfall
- d) Curiosity of wildlife animals that leads for the invasion to outside the forest area

3. The Jim Corbett National Park is famous for notable man-eaters.....

- a) Leopard
- b) Lion
- c) Tiger
- d) Bear

4. The National aquatic animal of India is:

- a) Sea horse
- b) River dolphin
- c) Blue whale
- d) Gangetic shark

5. Which species may be more affected by climate change:

- a) Polar bear
- b) Tiger
- c) Great Indian Bustard
- d) Blue bull