

Conservation of Biodiversity

Biodiversity is one of the important tool for Sustainable development. The enormous value of biodiversity due to their Commercial, medical genetic & ecological importance emphasizes the need to conserve biodiversity.

Conservation:

Definition: The management of biosphere so that it will yield the greatest sustainable benefit to present generation while maintaining its potential to meet the needs of future generation.

Factors affecting biodiversity

- * The marine ecosystems are disturbed due to oil spills and discharge of effluents
- * poaching of wild animals, over exploitation of natural resources, degradation of habitats, affect biodiversity

Need of biodiversity Conservation:

- * It provides immediate benefits to the society such as recreation & tourism.
- * Drugs, herbs, food and other important raw materials can be derived from plants & animals.
- * It preserves the genetic diversity of plants & animals.
- * Ensures the sustainable utilization life supporting systems on earth.
- * It leads to conservation of essential

ecological activity → Life Supporting Systems

Types of biodiversity Conservation

* In Situ Conservation (within habitat)

* Ex Situ Conservation (outside habitat)

In Situ Conservation:

In Situ Conservation involves protection of fauna → flora within its natural habitat, where the species normally occurs is called in situ Conservation.

The natural habitats or ecosystems maintained under in situ Conservation are called protected areas.

ex Biosphere reserves, National parks, Gene sanctuaries

Methods of In Situ Conservation:

Biosphere reserves - 7

National parks - 80

wild life sanctuaries - 420

Botanical Gardens - 120

Biosphere reserves:

Cover large area more than 5000 sq km

It is used to protect species for long time

Nanda Devi

UP

Nokrek

Meghalaya

Manas

Assam

Sundarbans

West Bengal

Gulf of Mannar

Tamil Nadu

Nilgiri

Karnataka

Great Nicobars → Similipal

Orissa

Role of biosphere reserves:

- * It gives long term survival of evolving ecosystem
- * It protects endangered species
- * It has max number of species & communities
- * It is useful for educational & research purpose
- * It remains & functions as an open system & changes in land use are not allowed.

Restriction:

No tourism & explosive activities are permitted in the biosphere reserves.

National park:

A national park is an area dedicated for the conservation of wildlife along with its environment.

Within the biosphere reserves, one or more national parks are also exist.

ex Kaziranga - Assam - One horned rhino

Gir National park - Gujarat - Indian Lion

Periyar - Kerala - Tiger, elephant

Role of a national park

* Used to protect, propagate & develop the wildlife

* Used for enjoyment through tourism, without affecting the environment.

Restrictions:

All private rights & forestry activities are prohibited within a national park

Grazing of domestic animals inside the national park is prohibited.

Wildlife Sanctuaries:

It is an area, which is reserved for the conservation of animals only.

At present there are 492 wildlife sanctuaries in our country.

ex Sultanpur Bird Sanctuary - Haryana - Migratory bird

Vedangal " " Tamil Nadu - Water birds

Mudumalai wildlife " " - Tiger, Elephant

Role of wildlife sanctuaries:

* It protects animals only

Restrictions:

killing, hunting, shooting is prohibited except under the control of higher authority.

Gene Sanctuary:

A gene sanctuary is an area, where the plants are conserved.

ex:

One gene sanctuary for citrus (Lemon family)

" " " " pitcher plant (an insect eating plant)

Other projects for conservation of animals:

For the protection and conservation of certain animals, some special projects are framed in our country.

ex Project Tiger, Project elephant

Advantages:

* Cheap

* Convenient method

* The Species gets adjusted to the natural disasters

Disadvantages:

* A large Surface area of the earth is required
* Maintenance of the habitats is not proper due to shortage of staff \rightarrow pollution.

Ex situ Conservation:

Ex situ conservation involves protection of fauna & flora outside the natural habitats.

Role:

\checkmark It identifies those species which are at more risk of extinction.

\checkmark It involves maintenance \rightarrow breeding of endangered plant & animal species under controlled conditions.

Important Ex situ Conservation:

Botanical gardens, seed banks, zoological gardens.

Methods of Ex situ Conservation:

* National Bureau of plant genetic resources

It is located in New Delhi

It uses cryo preservation techniques to preserve agricultural & horticultural crops.

* National Bureau of Animal Genetic Resources:

It is located at Karnal, Haryana

* National facility for plant Tissue Culture

Repository

It develops the facility for conservation.

of varieties of crop plants or trees by tissue culture.

Advantages:

- * Survival of endangered species is increasing due to special care and attention
- * It is carried out in cases of endangered species, which do not have any chances of survival in the world.

Disadvantages:

- * Expensive method
- * Freedom of wildlife is lost
- * It can be adopted only for few selected

Species