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Conservation of Biodiversity

The enormous value of biodiversity due to their genetic, commercial, medical, esthetic, ecological and optional importance emphasizes the need to conserve biodiversity.

There are two approaches of biodiversity conservation:

In situ conservation (within habitat): This is achieved by protection of wild flora and fauna in nature itself. E.g. Biosphere Reserves, National Parks, Sanctuaries, Reserve Forests etc.

Ex situ conservation (outside habitats): This is done by establishment of gene banks, seed banks, zoos, botanical gardens, culture collections etc.

In Situ conservation:

This is the process of protecting an endangered plant or animal species in its natural habitat, either by cleaning up the habitat itself or marking it for exclusive living, or by defending the species from the predators. The benefit of in-situ conservation is that it maintains recovering population in the surroundings where they have developed their distinctive properties.

- In India we have protected area network of biosphere reserves to conserve and manage the representative ecosystems, like wetlands, mangroves, and coral reef.
- We have 7 major Biosphere reserves 85 National parks and 448 Wildlife Sanctuaries with the objective to save and restoring viable population of large mammals such as tiger, lion, crocodile elephant etc.

They totally cover 4% of the geographic area.

The Biosphere Reserves conserve some representative ecosystems as a whole for long-term in situ conservation. In India we have:

Nanda Devi (U.P.),
Nokrek
(Meghalaya),
Manas (Assam),



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Sunderbans (West Bengal),
Gulf of Mannar (Tamil
Nadu),
Nilgiri (Karnataka, Kerala, Tamil
Nadu), Great Nicobars and Similipal
(Orissa)

A **National Park** is an area dedicated for the conservation of wildlife along with its environment. It is also meant for enjoyment through tourism but without impairing the environment. Grazing of domestic animals, all private rights and forestry activities are prohibited within a National Park. Each National Park usually aims at conservation specifically of some particular species of wildlife along with others.

Some major National Parks of our country are enlisted in the Table 2 below:

Some important National parks in India

Name of National Park	State	Important Wildlife
Kaziranga	Assam	One horned Rhino
Gir National Park	Gujarat	Indian Lion
Bandipur	Karnataka	Elephant
Periyar	Kerala	Elephant, Tiger
Sariska	Rajasthan	Tiger

Wildlife sanctuaries are also protected areas where killing, hunting, shooting or capturing of wildlife is prohibited except under the control of highest authority. Some major wildlife sanctuaries of our country are shown in table 3.

Table 3 Some Important Wildlife Sanctuaries of India

Name of Sanctuary	State	Major Wild Life
Ghana Bird Sanctuary	Rajasthan	300 species of birds (including migratory)
Sultanpur Bird Sanctuary	Haryana	Migratory birds
Mudamalai Wildlife Sanctuary	Tamil Nadu	Tiger, elephant, Leopard
Vedanthangal Bird Sanctuary	Tamil Nadu	Water birds
Wild Ass Sanctuary	Gujarat	Wild ass, wolf, nilgai, chinkara



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For plants, there is one gene sanctuary for Citrus (Lemon family) and one for pitcher plant (an insect eating plant) in Northeast India.

Ex Situ Conservation:

This type of conservation is mainly done for conservation of crop varieties. In India, we have the following important gene bank/seed bank facilities:

National Bureau of Plant Genetic Resources (NBPGR) is located in New Delhi. Here agricultural and horticultural crops and their wild relatives are preserved by cryo-preservation of seeds, pollen etc. by using liquid nitrogen at a temperature as low as – 196 degree Celsius. Varieties of rice, turnip, radish, tomato, onion, carrot, chilli, tobacco etc. have been preserved successfully in liquid nitrogen for several years without losing seed viability.

National Bureau of Animal Genetic Resources (NBAGR) located at Karnal, Haryana. It preserves the semen of domesticated bovine animals.

National Facility for Plant Tissue Culture Repository (NFPTCR) for the development of a facility of conservation of varieties of crop plants/trees by tissue culture. This facility has been created within the NBPGR.

For the protection and conservation of certain animals, there have been specific projects in our country

e.g. Project Tiger,
Gir Lion Project,
Crocodile Breeding Project,
Project Elephant,
Snow Leopard Project etc.



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