

Unit 5: Applied Ecology

Concept of Sanctuary, National Park, Biosphere Reserve

Wildlife of India is an important natural heritage and tourism attraction. **National Parks, Biosphere Reserves and Wildlife Sanctuaries** which are important parts of tourism attraction protect the unique wildlife by acting as reserve areas for threatened species. Wildlife tourism means human activity undertaken to view wild animals in a natural setting. All the above areas are exclusively used for the benefit of the wildlife and maintaining biodiversity.

Protected areas in India include National Parks, Wildlife Sanctuary, Reserve Forest, Conservation reserves, Marine reserves, Community reserves and Biosphere reserves. Indian states territories are bestowed with a plethora of flora and fauna. National Parks and Wildlife Sanctuaries are protected areas declared by Government with the primary objective to preserve wildlife, save flora & fauna and restore the natural ecological balance. The main purpose of Government to declare any area as National Parks and Wildlife Sanctuaries under protected areas is to preserve wildlife, save flora & fauna and restore the natural ecological equilibrium.

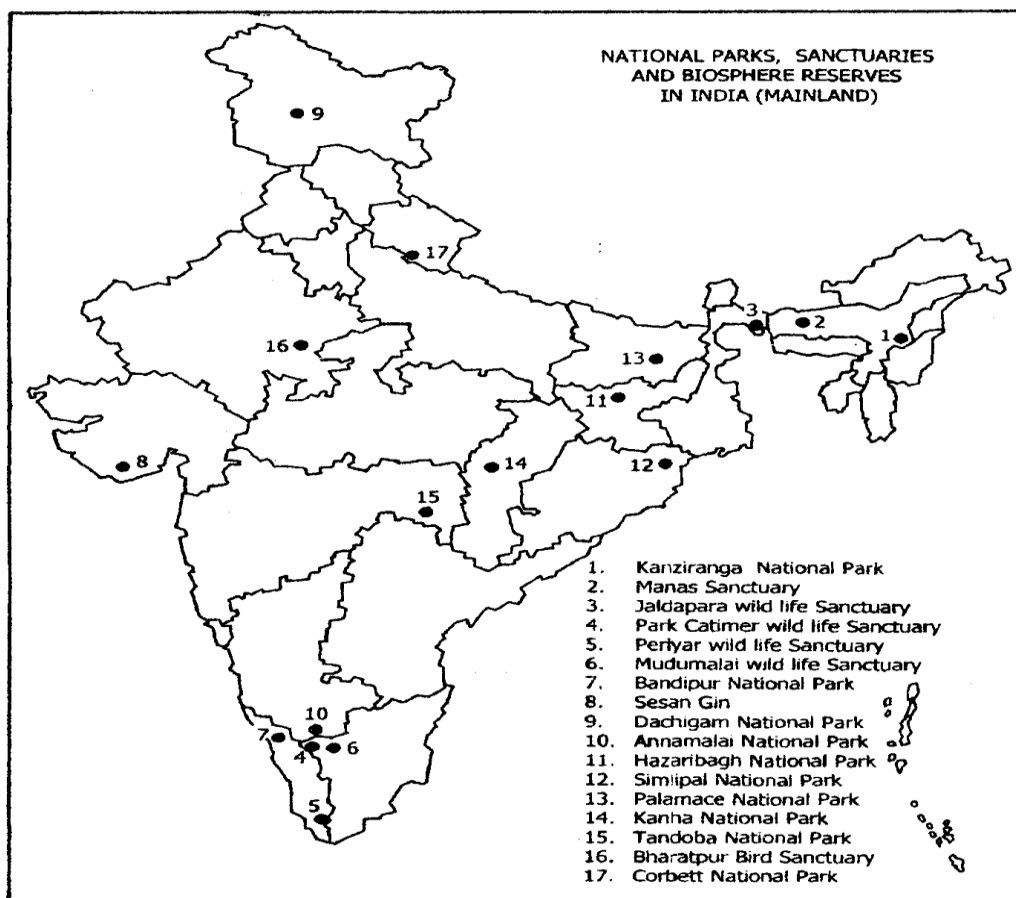


Fig.: Map of India showing some of the important National Parks, Sanctuaries and Biosphere Reserves.

India has closely followed the concept and definition of national park as formulated by the **International Union for Conservation of Nature (IUCN)** in 1969. The report of Expert Committee of **'Indian Board of Wildlife' (IBWL) 1970** defines the national park as:

A National Park is an area of adequate natural, biological and geomorphological interest, designated and created by legislation as such, to be preserved in perpetuity as a national heritage. The term 'National Park' shall apply to an area with the following characteristics.

1. Where one or several ecological features are not altered by human occupation or exploitation of the area, and where the plants and animals and the terrain are of special scientific, educative and re-creative interest, or of distinctive character;
2. Where adequate steps have been taken to prevent or eliminate human exploitation or occupation of the area and to protect the biological, territorial and aesthetic features which have led to the establishment of the National Park;
3. Where visitors are allowed to enter under special conditions for inspirational, educative, cultural and creative purposes; and
4. Where no grazing of livestock is allowed.

In National Parks, human activity is not allowed. Also, the grazing of livestock and private rights are not permitted. The species that are mentioned in the Schedule of the Wildlife Act are also not allowed for hunting or capturing purposes. No person can remove, exploit, or destroy any wildlife from a National Park. No person shall allow to damage or destroy the habitat of any wild animal or deprive any wild animal of its habitat within a National Park. Also, they cannot be downgraded to the status of a 'sanctuary'. Both the Central Government and State governments can declare National Parks. But the alteration of the boundaries of a national park shall be made except on a resolution passed by the State legislature.

The definition of wildlife Sanctuary, as consider at the inaugural meeting of the Indian Board of Wildlife (IBWL) in Mysore in December 1951, goes as:

"An area where killing or capturing of any Species of birds or animals is prohibited except under orders of a competent authority and whose boundaries and characters should be kept Sacrosanct as far as possible."

Later the IBWL (1970) elaborated the definition as under:

"Areas rich in wildlife which cannot be constituted as National Park due to the factors beyond administrative control may be designated as sanctuaries. The

management principles as applicable for national parks are applicable to the sanctuary except that a limited amount of interference by human and limited amount of grazing by cattle is permitted, though the attempt should be to curb it completely as soon as possible".

The programme of Biosphere Reserve was initially under the Man and Biosphere (MAB) programme by UNESCO in 1971. Biosphere reserves programme is intended to conserve representative ecosystems as opposed to only species or habitat conservation. It provides *in-situ* conservation under natural conditions, long-term conservation of plants, animals and micro-organisms. The purpose of the formation of the biosphere reserve is to conserve *in-situ* all forms of life, along with its support system, in its totality, so that it could serve as a referral system for monitoring and evaluating changes in natural ecosystems. The first biosphere reserve of the world was established in 1979, since then the network of biosphere reserves has increased to 425 in 95 countries in the world (MAB - 2003). Presently, there are 18 existing biosphere reserves in India.

The main characteristics of biosphere reserves are expected to be as given below:

- 1) Biosphere reserves will be protected areas of land and coastal environments. Together they will constitute a part of the world-wide network linked by international understanding on purposes, standards and exchange of scientific information.
- 2) The network of biosphere reserves will include significant examples of biomes throughout the world.
- 3) Each biosphere reserve should be large enough to be an effective conservation unit, and be able to accommodate different uses without conflict.
- 4) Biosphere reserves will provide opportunities for ecological research, education and training. They will have particular value as benchmarks or standards for measurement of long-term changes in the biosphere as a whole. The existence may be vital to other projects.
- 5) A Biosphere reserve will have adequate long-term legal protection.
- 6) In some cases, biosphere reserves will coincide with, or incorporate, existing or proposed protected areas, such as national parks, sanctuaries or nature reserves.

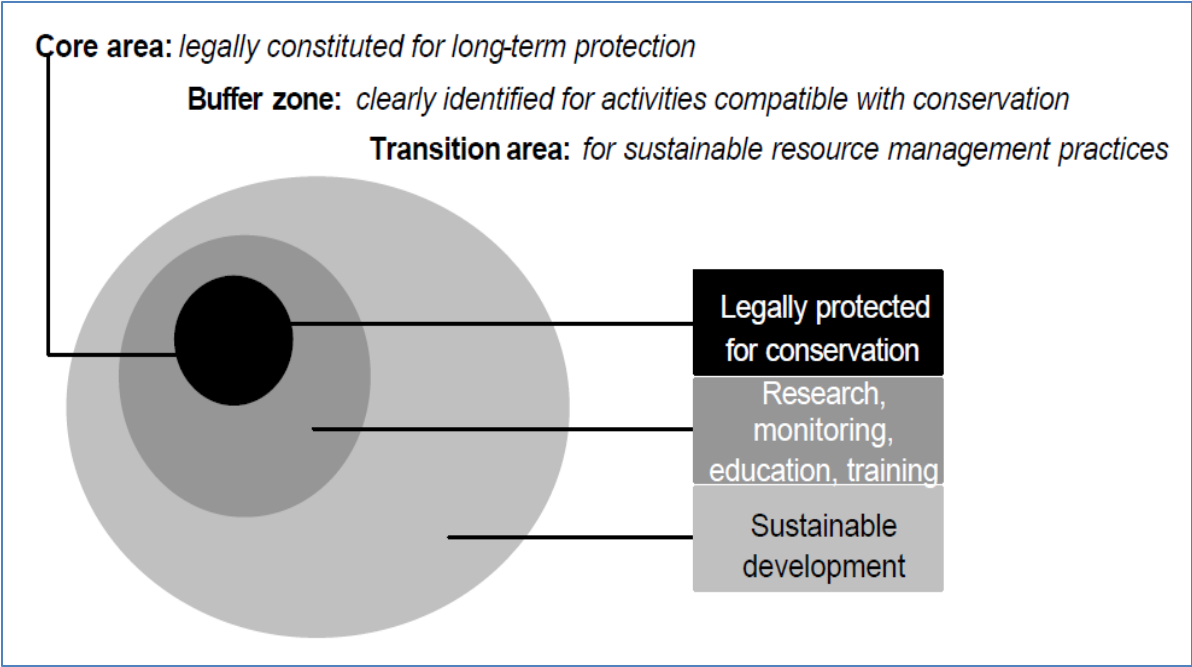


Fig.: Functions and zonation of a biosphere reserve.



Difference between Sanctuary, National Park and Biosphere Reserve

Wildlife sanctuaries refer to an area that provides protection and living conditions favourable to wild animals. On the other hand, the national park provides protection to the entire ecosystem, which includes flora, fauna, landscape, etc. of that region. Biosphere reserves are protected areas, which tend to preserve the genetic diversity of plants, animals, birds, etc.

The following points explain the difference between the Wildlife Sanctuary and the National Park:

1. The wildlife sanctuary is the region where wildlife and its habitat are protected from any disturbance. On the other hand, a national park is the area, which is specifically designed for wildlife, where they can live freely and use natural resources.
2. Wildlife sanctuaries are famous for wildlife conservation, which includes animals, insects, microorganisms, birds, etc. of different genes and species. On the other hand, National Parks are well known for preserving flora, fauna, landscape and historical objects.
3. Wildlife sanctuaries aim to ensure that a substantial population of wildlife and its habitats is maintained. On the contrary, national parks safeguard the environmental, landscape and cultural heritage of the region.
4. National parks are highly restricted areas, which are permitted for limited people, whereas wildlife sanctuaries have fewer restrictions than national parks.
5. To visit the national parks, the official permission must be taken from the competent authorities. In contrast, no official permission is required to visit a wildlife sanctuary.
6. The boundaries of wildlife sanctuaries are not sacrosanct. However, national parks have clearly delineated boundaries.
7. Limited human activities are permitted in wildlife sanctuaries, but in national parks, they are strictly prohibited by the authorities.

The Government of India passed Wildlife Protection Act in 1972 for the purpose of effectively protecting the wildlife of the country by controlling poaching, smuggling and illegal trade in wildlife. Another project called 'Project Tiger' was launched in 1973 to save the dwindling population of Royal Bengal Tigers. Later

in 1992, ‘Project Elephant ‘was launched with an aim to protect the endangered wild Asian elephants and their habitat.

Distinction Between National Park, Sanctuary and Biosphere Reserve		
National Park	Sanctuary	Biosphere Reserve
(i) Habitat for particular wild animal species.	Generally species-oriented such as citrus, pitcher plant, etc.	Hitched to the whole ecosystem, i.e., totality of all forms of life, i.e., ecosystem-oriented.
(ii) In India, most common average size is 100-500 sq km (in about 40 per cent cases) and 500-1000 sq km (about 15 per cent cases). The general size range is 0.04 to 3162 sq km.	Size range is 0.61 to 7818 sq km. Most common (in about 40 per cent) is 100-500 sq km. In 25 per cent, the size varies between 500 and 1000 sq km.	Size range over 5670 sq km.
(iii) Boundaries fixed by legislation.	Boundaries are not sacrosanct.	Fixed by legislation.
(iv) Except the buffer zone, no biotic interference.	Limited biotic interference.	Except the buffer zone, no biotic interference.
(v) Tourism permissible.	Permissible.	Normally not permissible.
(vi) Research and scientific management lacking.	Lacking.	Managed.
(vii) So far no attention to gene-pools and conservation.	So far no such attention.	Attention given.

Some of the Popular National Parks and Bird Sanctuaries in India

UNESCO has recognized some of India's national parks as World Heritage Sites. These are:

- Great Himalayan National Park in Himachal Pradesh
- Valley of Flowers and Nanda Devi National Park in Uttarakhand
- Keoladeo National Park in Rajasthan
- Khangchendzonga National Park in Sikkim
- Nokrek National Park in Meghalaya
- Kaziranga and Manas National Park in Assam
- Sunderbans National Park in West Bengal

There are around 104 national parks in India spread across the country's length and breadth. These wildlife parks are home to a variety of animals and birds, and some of them are the safe shelters for unique and threatened animals like one-horned rhinos and Royal Bengal Tiger. Some of the Popular National Parks of India are:

- Corbett National Park, Uttarakhand
- Ranthambhore National Park, Rajasthan
- Tadoba National Park, Maharashtra
- Kanha National Park, Madhya Pradesh
- Bandhavgarh National Park, Madhya Pradesh
- Panna National Park, Madhya Pradesh
- Pench National Park, Madhya Pradesh
- Sunderban National Park, West Bengal
- Kaziranga National Park, Assam
- Manas National Park, Assam
- Bandipur National Park, Karnataka

India is home to more than 1300 species of birds and about 467 Important Bird Areas (IBA) which include 59 bird sanctuaries. These sanctuaries and IBAs are inhabited by birds like Indian peafowl, pheasants, quails, francolin, hornbill, and snowcocks. Some of the top bird sanctuaries on the list of wildlife adventure are:

- Sultanpur Bird Sanctuary, Haryana
 - Bharatpur Bird Sanctuary, Rajasthan
 - Salim Ali Bird Sanctuary, Goa
 - Kutch Great Indian Bustard Sanctuary, Gujarat
 - NalSarovar Bird Sanctuary, Gujarat
 - Kumarakom Bird Sanctuary, Kerala
 - Vedanthangal Bird Sanctuary, Tamil Nadu
 - Thattekad Bird Sanctuary, Kerala
 - Ranganathittu Bird Sanctuary, Karnataka
 - Pulicat Lake Bird Sanctuary, Andhra Pradesh
 - Chilika Lake Bird Sanctuary, Odisha
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