

## **Expansion of World's Biosphere Reserves**

### **Why in news?**

Expanding biosphere reserves across the world will help millions of people realise a better future in harmony with nature.

### **What are biosphere reserves?**

- Biosphere Reserve (BR) is an international designation by UNESCO for representative parts of natural and cultural landscapes extending over large area of terrestrial or coastal/marine ecosystems or a combination thereof.
- BRs are living examples of how human beings and nature can co-exist while respecting each others' needs.

### **Criteria for designation of BR**

- The site must contain an effectively protected and minimally disturbed core area of value of nature conservation.
- The core area should be typical of a bio-geographical unit and large enough to sustain viable populations representing all trophic levels in the ecosystem.
- The management authority to ensure the cooperation of local communities while managing and containing the conflicts.
- Areas potential for preservation of traditional tribal or rural modes of living for harmonious use of environment.

## Structure of Biosphere Reserve

### Core Zone

The core zone must contain suitable habitat for numerous species and may contain centres of endemism.

They often conserve the wild relatives of economic species.

They represent important genetic reservoirs having exceptional scientific interest.

A core zone being National Park or Sanctuary is protected/regulated mostly under the Wildlife (Protection) Act, 1972.

The core zone is to be kept free from human pressures external to the system.

### Buffer Zone

The buffer zone adjoins or surrounds core zone in order to protect the core in its natural condition.

The activities in this zone include restoration, demonstration sites for enhancing value addition to the resources, limited recreation, tourism, fishing, grazing, etc.,.

Research and educational activities are to be encouraged.

Human activities, if natural within BR, are likely to continue if these do not adversely affect the ecological diversity.

### Transition Zone

The transition area is the outermost part of a biosphere reserve.

This is usually not delimited and is a zone of cooperation where conservation knowledge and management skills are applied.

The activities in this zone includes settlements, crop lands, managed forests and area for intensive recreation and other economic uses.

### Zoning in three areas



#### Core areas

Rigorous protection  
Long-term conservation

#### Buffer areas

Buffer areas for protection of core areas  
Education and training Ecotourism

#### Transition areas

Areas where people live and can achieve sustainable development in harmony with nature

## What are World Network of Biosphere Reserves?

- The World Network of Biosphere Reserves of the MAB Programme consists of a dynamic and interactive network of sites of excellence.
- It was formed in 1971, as a backbone for biodiversity conservation, ecosystem restoration, and living in harmony with nature.
- There are now 738 properties in 134 countries.
- There are 18 biosphere reserves in India, out of which 12 are recognized internationally under the MAB programme.
- Spain is one of the lead participating WNBR countries globally, with 53 properties.
- The first biosphere reserve in South Asia was the Hurulu Biosphere Reserve, in Sri Lanka.
- Bangladesh, Bhutan, and Nepal do not have biospheres as yet.

<i>Sl. no.</i>	<i>Name</i>	<i>State(s)</i>	<i>Type</i>	<i>Key fauna</i>	<i>Area (km<sup>2</sup>)</i>	<i>Year</i>
1	Nilgiri Biosphere Reserve*	Tamil Nadu, Kerala and Karnataka	Western ghats	Nilgiri tahr, Lion-tailed macaque	5520	1986
2	Nanda Devi National Park and Biosphere Reserve*	Uttarakhand	Western himalayas	–	5860	1988
3	Nokrek*	Meghalaya	East himalayas	Red panda	820	1988
4	Gulf of Mannar*	Tamil Nadu	Coasts	Dugong or Sea cow	10500	1989
5	Sunderbans*	West Bengal	Gangetic delta	Royal Bengal Tiger	9630	1989
6	Manas	Assam	East himalayas	Golden Langur, Red Panda	2837	1989
7	Great Nicobar Biosphere Reserve*	Andaman and Nicobar Island	Islands	Saltwater crocodile	885	1989
8	Simlipal*	Odisha	Deccan peninsula	Gaur, Royal Bengal Tiger, Wild elephant	4374	1994
9	Dibru-Saikhowa	Assam	East himalayas	Golden langur	765	1997
10	Dihang-Dibang	Arunachal Pradesh	East himalayas	–	5112	1998
11	Pachmarhi Biosphere Reserve*	Madhya Pradesh	Semi-arid	Giant squirrel, Flying squirrel	4981.7	1999
12	Khangchendzonga	Sikkim	East himalayas	Snow Leopard, Red Panda	2620	2000
13	Agasthyamalai Biosphere Reserve	Kerala, Tamil Nadu	Western ghats	Nilgiri Tahr, Elaphants	1828	2001
14	Achanakamar-Amarkantaka*	Chhattisgarh, Madhya Pradesh	Maikala hills	–	3835	2005
15	Great Rann of Kutch	Gujarat	Desert	Indian wild ass	12454	2008
16	Cold Desert	Himachal Pradesh	Western himalayas	Snow leopard	7770	2009
17	Seshachalam Hills	Andhra Pradesh	Eastern ghats	–	4755	2010
18	Panna	Madhya Pradesh	Catchment area of ken river	Tiger, Chital, Chinkara, Sambhar Sloth bear	543	2011

### What is the significance of World Network of Biosphere Reserves?

- It is a unique tool for cooperation through sharing knowledge, exchanging experiences, building capacity and promoting best practices.
- Support of members is of great importance because the ecological carrying capacity of

the planet earth has been exceeded.

- The best concept for 'Living in Harmony with Nature' that exists in the United Nations system, is the WNBR.
- **Concerns** - The long-term threats includes biodiversity loss, climate change, pollution and population dynamics, accelerated by the blind belief in technological solutions for all problems.

## References

1. [The Hindu | A chance to expand the world's biosphere footprint](#)
2. [UNESCO | Biosphere Reserves](#)
3. [UNESCO | Man and the Biosphere \(MAB\) Programme](#)
4. [Vikaspedia | Biosphere reserves in India](#)

## Quick facts

### UNESCO's Man and the Biosphere Programme (MAB)

- UNESCO's Man and the Biosphere Programme (MAB) is an intergovernmental scientific programme that was launched in 1971.
- It aims to establish a scientific basis for the improvement of relationships between people and their environments.
- It proposes interdisciplinary research, demonstration and training in natural resources management.
- MAB helps national governments with the planning and implementation of research and training programmes with technical assistance and scientific advice.
- India is a signatory to the landscape approach supported by UNESCO's MAB programme.

### Biosphere reserves in India

- Biosphere reserves in India are announced by state and central government.
- First biosphere reserve in India - The Nilgiri Biosphere Reserve
- Largest biosphere reserve in India - Great Rann of Kutch
- Smallest biosphere reserve in India - Dibru-Saikhowa (Assam)