

BIOSPHERE RESERVES

A biosphere reserve is a unique kind of protected area that differs from a national park, wilderness area, national forest, or wildlife refuge in having three very different, but equal, aims:

- **Conservation** of genetic resources, species and ecosystem;
- Scientific **research and monitoring**; and
- Promoting **sustainable development** in communities of the surrounding region.

All three of these aims are equally important in a biosphere reserve. National parks and other kinds of protected natural areas usually are primarily concerned with conservation, and only secondarily with research and sustainable development.

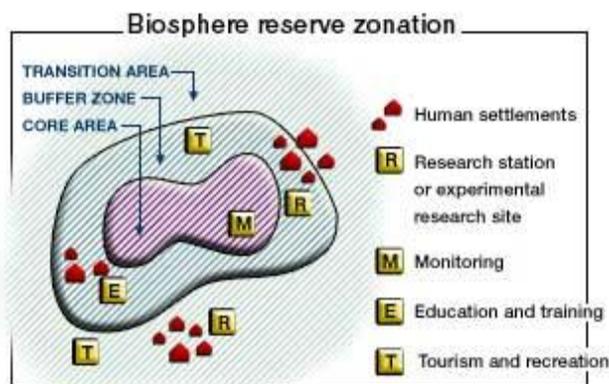
The idea of biosphere reserves was initiated by UNESCO in 1973-74 under its Man and the Biosphere (MAB) Programme. The MAB launched in 1971 by UNESCO proposes an interdisciplinary research agenda and capacity building, aiming to improve the relationship of people with their environment globally. Man and the Biosphere Programme is governed by the MAB Council or the International Co-ordinating Council (ICC), consisting of 34 Member States (countries) elected by UNESCO's biennial General Conference. The MAB ICC guides and supervises the MAB programme, review the progress and recommend research projects to the countries.

Man and the Biosphere programme targets the ecological, social and economic dimensions of biodiversity loss. It uses its World Network of Biosphere Reserves (WNBR) as a vehicle for knowledge sharing, for research and monitoring, for education and training, and in participatory decision making.

The purpose of formation of biosphere reserves 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 evaluation of changes in natural ecosystem. To fulfill the aims a biosphere reserve is divided into 3 zones:

1. **Core area:** The central core area of a biosphere reserve is legally protected, where no human activity is allowed. The biological communities and ecosystems are strictly protected.

2. **Buffer zone:** Usually surrounds and adjoins the core area, where limited human activities are permitted. The human activities are monitored and non-destructive researches are carried out.
3. **Transition Zone:** Surrounding the buffer area is the transition zone. This area may contain small villages, farms, fisheries and limited non destructive human activities are allowed. Here the local communities, management agencies, scientists, non-governmental organizations, cultural groups, economic interests and other stakeholders work together to manage and sustainably develop the area's resources.



Schematic depiction of the three zones of biosphere reserves and the kind of activities that take place in them

World's first biosphere reserve was established in 1979, since then the network of world's biosphere reserves have increased to 701 sites in 124 countries (Source: MAB 2020). At present, there are 18 biosphere reserves in India. Of them, 11 biosphere reserves are the part of World's Network of Biosphere Reserves (WNBR) (Source: MAB 2020).

List of India's biosphere reserves included in UNESCO's WNBR

#	Name	States/ UT	Year
1	Nilgiri Biosphere Reserve	Tamil Nadu, Kerala and Karnataka	2000
2	Gulf of Mannar Biosphere Reserve	Tamil Nadu	2001
3	Sundarbans Biosphere Reserve	West Bengal	2001
4	Nanda Devi Biosphere Reserve	Uttarakhand	2004
5	Nokrek Biosphere Reserve	Meghalaya	2009
6	Pachmarhi Biosphere Reserve	Madhya Pradesh	2009
7	Simlipal Biosphere Reserve	Odisha	2009
8	Great Nicobar Biosphere Reserve	Andaman & Nicobar Islands	2013
9	Achanakmar-Amarkantak Biosphere Reserve	Chhattisgarh, Madhya Pradesh	2012 ¹
10	Agasthyamalai Biosphere Reserve	Kerala and Tamil Nadu	2016
11	Khangchendzonga National Park	Sikkim	2018

List of biosphere reserves in India

Biosphere reserves of India							
	Year	Name	Location	State	Type	Key fauna	Area (km ²)
1	1986	Nilgiri Biosphere Reserve	Part of Waynad, Nagarhole, Bandipur and Mudumalai, Nilambur, Silent Valley	Tamil Nadu, Kerala and Karnataka	Western Ghats	Nilgiri tahr, tiger, lion-tailed macaque	5520
2	1988	Nanda Devi Biosphere Reserve	Parts of Chamoli District, Pithoragarh District & Bageshwar District	Uttarakhand	Western Himalayas	Snow leopard, Himalayan black bear	5860
3	1989	Gulf of Mannar	Indian part of Gulf of Mannar extending from Rameswaram island in the north to Kanyakumari in the south of Tamil Nadu and Sri Lanka	Tamil Nadu	Coasts	Dugong	10500
4	1988	Nokrek	In west Garo Hills	Meghalaya	Eastern hills	Red panda	820.00
5	1989	Sundarbans	Part of delta of Ganges and Brahmaputra river system	West Bengal	Gangetic Delta	Royal Bengal tiger	9630
6	1989	Manas	Part of Kokrajhar, Bongaigaon, Barpeta, Nalbari, Kamrup and Darrang Districts	Assam	Eastern Hills	Asiatic elephant, tiger, Assam roofed turtle, hispid hare, golden langur, pygmy hog	2837
7	1994	Simlipal	Part of Mayurbhanj district	Odisha	Deccan Peninsula	Gaur, royal Bengal tiger, Asian elephant	4374
8	1998	Dihang-Dibang	Part of Siang and Dibang Valley	Arunachal Pradesh	Eastern Himalaya	Mishmi takin, musk deer	5112
9	1999	Pachmarhi Biosphere Reserve	Parts of Betul District, Hoshangabad District and Chhindwara District	Madhya Pradesh	Semi-Arid	Giant squirrel, flying squirrel	4981.72
10	2005	Achanakmar-Amarkantak Biosphere Reserve	Part of Annupur, Dindori and Bilaspur districts	Madhya Pradesh, Chhattisgarh	Maikala Hills	Four-horned antelope, Indian wild dog, sarus crane, white-rumped vulture, sacred grove bush frog	3835
11	2008	Great Rann of Kutch	Part of Kutch, Morbi, Surendranagar and Patan districts; the largest biosphere reserve in India.	Gujarat	Desert	Indian wild ass	12454
12	2009	Cold Desert	Pin Valley National Park and surroundings; Chandratat and Sarchu & Kibber Wildlife Sanctuary	Himachal Pradesh	Western Himalayas	Snow leopard	7770
13	2000	Khangchendzonga	Parts of Kangchenjunga	Sikkim	East Himalayas	Snow leopard, red panda	2620
14	2001	Agasthyamalai Biosphere Reserve	Neyyar, Peppara and Shenduruny Wildlife Sanctuary and their adjoining areas	Kerala, Tamil Nadu	Western Ghats	Nilgiri tahr, Asian elephant	3500.08

15	1989	Great Nicobar	Southernmost of the Andaman and Nicobar Islands	Andaman and Nicobar Islands	Islands	Saltwater crocodile	885
16	1997	Dibru-Saikhowa	Part of Dibrugarh and Tinsukia districts	Assam	Eastern Hills	White-winged wood duck, water buffalo, black-breasted parrotbill, tiger, capped langur	765
17	2010	Seshachalam Hills	Seshachalam Hill Ranges covering parts of Chittoor and Kadapa districts	Andhra Pradesh	Eastern Ghats	Slender loris	4755
18	2011	Panna	Part of Panna District and Chhatarpur District	Madhya Pradesh	Catchment Area of the Ken River	Tiger, chital, chinkara, sambhar and sloth bear	2998.98