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Core Course(CC-V): Environmental Science

Topic: Biosphere Reserve



BIOSPHERE RESERVE

The biosphere (from Greek bios=life, sphaira, sphere) is the layer of the planet Earth where life exists.

The word reserve means that it is a special area recognized for balancing conservation with sustainable use.

The concept of Biosphere Reserves was launched in 1971 as a part of UNESCO's Man and Biosphere Programme, dealing with the conservation of ecosystems and the genetic resources contained therein.

Biosphere reserves are a special category of protected parts of natural and cultural landscapes extending over large areas of terrestrial or coastal/marine ecosystems or a combination of both, ratified by a national committee, and designated by UNESCO.

Protection is granted not only to the flora and fauna of the protected region but also to the human communities who inhabit these regions and their ways of life.

CRITERIA FOR DESIGNATION OF BIOSPHERE RESERVE

1

A site must contain a protected and minimally disturbed core area of value of nature conservation.

2

Core area must be a bio-geographical unit and should be a large enough to sustain a viable populations representing all trophic levels.

3

The involvement of local communities and use of their knowledge in biodiversity preservation.

4

Areas potential for preservation of traditional tribal or rural modes of living for harmonious use of the environment.

FACTS ON BIOSPHERE RESERVE

- The first Biosphere Reserve of the world was established in 1979.
- There are 701 Biosphere reserves across 124 countries in the world which also include 21 transboundary sites.
- The Indian government has established 18 Biosphere Reserves in India.

STRUCTURE OF BIOSPHERE RESERVE



- Core area
- Buffer zone
- Transition area
- 🏠 Human settlements
- 🎯 Research station
- 👤 Monitoring
- 📖 Education / training
- 📷 Tourism / recreation

STRUCTURE OF BIOSPHERE RESERVE

Comprise of three zones-

1 CORE ZONE-

- Core zone is fully protected and natural area of Biosphere Reserve and are least disturbed by human activities (except for some special purpose).
- They conserve the wild relatives of economic species and also represent important genetic reservoirs having exceptional interest.
- A core zone is a protected region, like a National Park or sanctuary/protected/regulated mostly under the Wildlife Protection Act, 1972.

2 BUFFER ZONE-

- The buffer zone surrounds the core zone and its activities are managed in this area in the ways that help in the protection of the core zone in its natural condition.
- It includes restoration, limited tourism, fishing, grazing, etc; which are permitted to reduce its effect on the core zone.
- Research and educational activities are to be encouraged.

3 TRANSITION ZONE

- It is the outermost part of the biosphere reserve. It is an area of active cooperation between reserve management and the local people.
 - It includes settlements, croplands, managed forests and areas for intensive recreation and other economic uses characteristics of the region.
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FUNCTIONS

- Three Main Functions:-



The diagram consists of three overlapping grey circles arranged in a triangular pattern on a green background. The top circle is labeled '1. CONSERVATION', the bottom-right circle is labeled '2. DEVELOPMENT', and the bottom-left circle is labeled '3. LOGISTIC SUPPORT'. Each circle has a thin black outline and overlaps with its two neighbors.

1. CONSERVATION

2. DEVELOPMENT

**3. LOGISTIC
SUPPORT**

FUNCTION OF BIOSPHERE RESERVE

- **Conservation**

- To ensure the conservation of landscapes, ecosystems, endemic species and genetic resources.

- Along with the wildlife, culture and customs of tribals are also protected.

- Also encourages traditional resource use.

- **Development**

- To promote economic development which is culturally, socially and ecologically sustainable.

- **Logistic support**

- Promoting research activities, environmental education, training and monitoring in the context of local, national and international conservation and sustainable development.

Biosphere Reserve In India

S.N o.	NAME	YEAR	STATE	KEY FAUNA
1	Cold Desert	2009	Himachal Pradesh	Snow leopard
2	Nanda Devi	1988	Uttrakhand	Snow leopard, Himalayan black bear
3	Khangchendzonga	2000	Sikkim	Snow leopard, Red panda
4	Dehang-Debang,	1998	Arunachal Pradesh	Musk deer, mishmi takin
5	Manas,	1989	Assam	Golden langur, Red panda
6	Dibru-Saikhowa,	1997	Assam	Golden langur
7	Nokrek,	1988	Meghalaya	Red Ppanda
8	Panna,	2011	Madhya Pradesh	Tiger, Chinkara, Sambharand Sloth Bear
9	Pachmarhi,	1999	Madhya Pradesh	Giant squirrel, Flying squirrel

10	Achanakmar-Amarkantak,	2005	Madhya Pradesh-Chhattisgarh	Four horned antelope, Indian wild dog, Sarus Crane, White humped vulture, Sacred grove bush frog
11	Great Runn of Kachchh, (Largest Area)	2008	Gujarat	Indian wild Ass
12	Similipal,	1994	Odisha	Gaur, Royal Bengal Tiger, Wild elephant
13	Sundarban,	1989	West Bengal	Royal Bengal Tiger
14	Seshachalam,	2010	Andhra Pradesh	Slender loris
15	Agasthyamala,	2001	Karnataka-Tamil Nadu-Kerala	Nilgiri Tahr, elephant
16	Nilgiri, (First to be Included)	1986	Tamil Nadu-Kerala-Karnataka	Nilgiri Tahr, Lion tailed macaque
17	Gulf of Mannar,	1989	Tamil Nadu	Sea cow
18	Great Nicobar,	1989	Andaman & Nicobar Island	Salt water Crocodile