

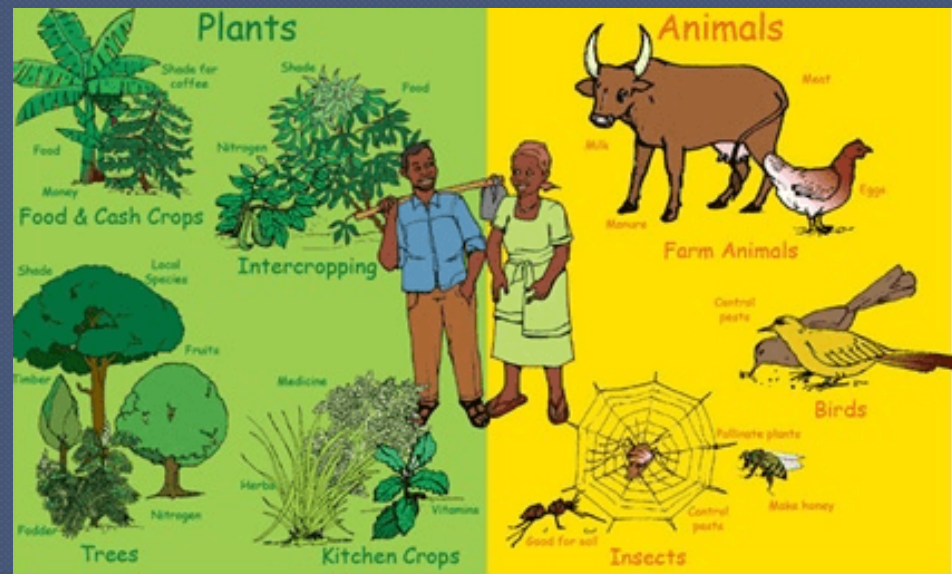
UNIT II

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Biodiversity

- Biodiversity is the variety of life and its processes. It includes the variety of living organisms, the genetic differences among them, the communities and ecosystems in which they occur, and the ecological and evolutionary processes that keep them functioning, yet ever changing and adapting.

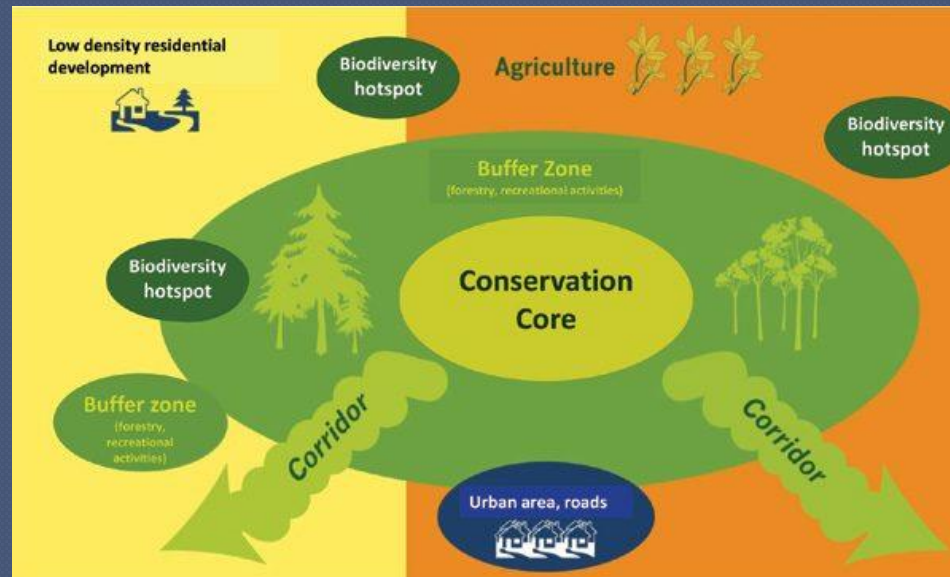


Biodiversity

- The term biodiversity refers to the variety of life on Earth at all its levels, from genes to ecosystems, and the ecological and evolutionary processes that sustain it.
- Biodiversity includes not only species which are rare, threatened, or endangered, but every living thing-even organism, such as microbes, fungi and invertebrates.
- Biodiversity is present at all places. Species and habitats in distant lands play a role in maintaining healthy ecosystems. The need for biodiversity is to satisfy basic needs like food, drinking water, fuel, shelter, and medicine.
- Much of the world's population still uses plants and animals as a primary source of medicine, Ecosystems provide services such as pollination, seed dispersal, climate regulation, water purification, nutrient cycling, and control of agricultural pests.
- Many flowering plants depend on animals for pollination, and 30% of human crops depend on the free services of pollinator

Core and Buffer Zone

- Buffer zone is often created to enhance the protection of areas under management for their biodiversity importance.
- The buffer zone of a protected area may be situated around the periphery of the region or may be a connecting zone within it that links two or more protected areas, therefore increasing their dynamics and conservation productivity.



Core and Buffer Zone

Core Zone: Core zone includes protected areas, as they act as reference points on the natural state of the ecosystems represented by the biosphere reserves. Core zone is where the actual forest exists and there are no villages inside this core zone. The core zone is basically an important area where the conservation of wildlife and natural resources is strictly protected by the forest department.

Buffer Zone–The area that surrounds or adjoins the core areas where nature is conserved alongside compatible human uses of the land or water. These might include activities such as ecotourism, recreation, sustainable agriculture, and forestry plus others. The buffer zone is mainly where both villagers and animals (mainly tigers) co-exist.

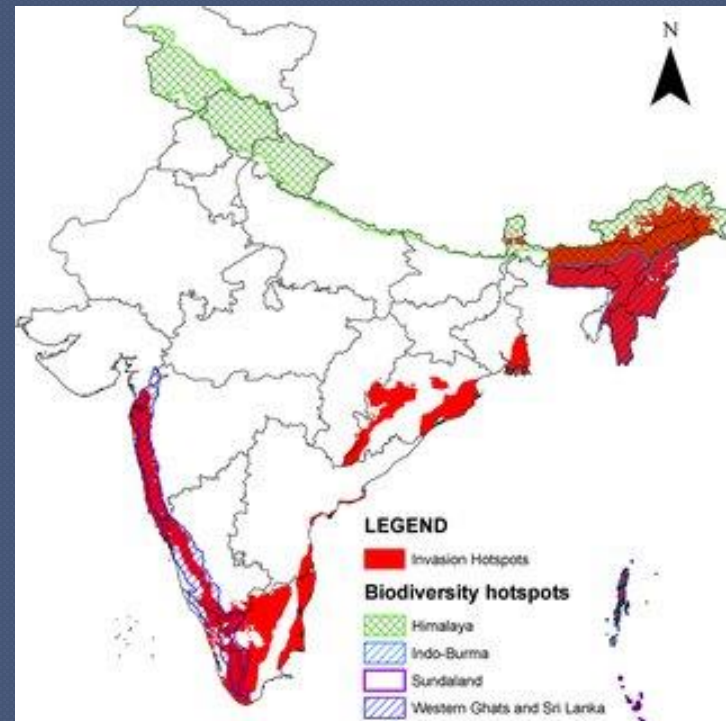
So, as we have discussed before that according to most of the tourist's opinion, the main difference between the "Core" and the 'Buffer' zone is that; **The 'Core' zone is actually a forest with abundant wildlife and the buffer zone with few wild animals along with Co-existing villages.**

Core and Buffer Zone

- A buffer zone can also be one of the protected area categories (e.g. category V or VI of IUCN Protected Area) or a classification scheme (e.g. NATURA 2000) depending on the conservation objective.
- The concept of a buffer zone was first included in the Operational Guidelines for the implementation of the World Heritage Convention in 1977.
- The buffer zone is one of the Best Management Practices(BMPs).
- A buffer zone is intended to avert the effect of negative environmental or human influences, whether or not it embodies natural or cultural value itself

Eco Hotspot

- Eco Hotspot is a region which is a prime location for the existence of rich biodiversity but also faces the threat of destruction. It is a place which needs our immediate and constant attention to survive and thrive in the future as well.



Eco Hotspots in India

1. The Western Ghats

- These hills are present along the western edge of peninsular India. Since they are situated near the ocean, they are likely to receive a good amount of rainfall. Most of the deciduous, as well as rainforests, are present in this region.
- Around 77% of the amphibians and 62% of the reptiles found here cannot be spotted elsewhere in the world.
- here are more than 6000 vascular plants here which belong to more than 2500 genus. 3000 plants out of these are endemic.
- Most of the spices found in the world such as black pepper and cardamom all are believed to have originated in the Western Ghats

Eco Hotspots in India

○ 2.The Himalayas

- Considered as the highest in the world, the Himalayas comprises of North-East India, Bhutan, Central and Eastern parts of Nepal.
- This region holds a record of having 163 endangered species which includes the Wild Asian Water Buffalo, One-horned Rhino, and as many as 10,000 plant species, of which 3160 are endemic. This mountain range covers nearly 750,000 km².



Eco Hotspots in India

3. Indo-Burma Region

- The Indo-Burma Region is stretched over a distance of 2,373,000 km². In the last 12 years, 6 large mammal species have been discovered in this region: the Large-antlered Muntjac, the Annamite Muntjac, the Grey-shanked Douc, the Annamite Striped Rabbit, the Leaf Deer, and the Saola.
- This hotspot is also known for the endemic freshwater turtle species, most of which are threatened with extinction, due to over-harvesting and extensive habitat loss.
- There are also 1,300 different bird species, including the threatened White-eared Night-heron, the Grey-crowned Crocias, and the Orange-necked Partridge.

Eco Hotspots in India

④ 4. Sundaland

- ④ This region lies in South-East Asia and includes Thailand, Singapore, Indonesia, Brunei, and Malaysia.
- ④ The Nicobar Islands represent India. These islands were declared as the world biosphere reserve in 2013 by the United Nations.
- ④ These islands have a rich terrestrial as well as marine ecosystem including mangroves, sea grass beds, and coral reefs. Species such as dolphins, whales, turtles, crocodiles, fishes, prawns, lobsters and seashells comprise the marine biodiversity.

Activities

○ Angling / Fishing

- The Indian **Himalayas** are an ideal for sport fishing. Anglers from all over the world come to the Indian rivers to try and hook the Himalayan Rainbow trout or the mighty Mahaseer. Good fishing is possible in the north of the country on the Ganga, Kali rivers for mahseer and on the Tirthan, Tons and Sainj rivers for trout. In the east of the country, rivers like the Kameng, Teesta, Brahmaputra etc. provide excellent angling opportunities.



Activities

○ Trekking

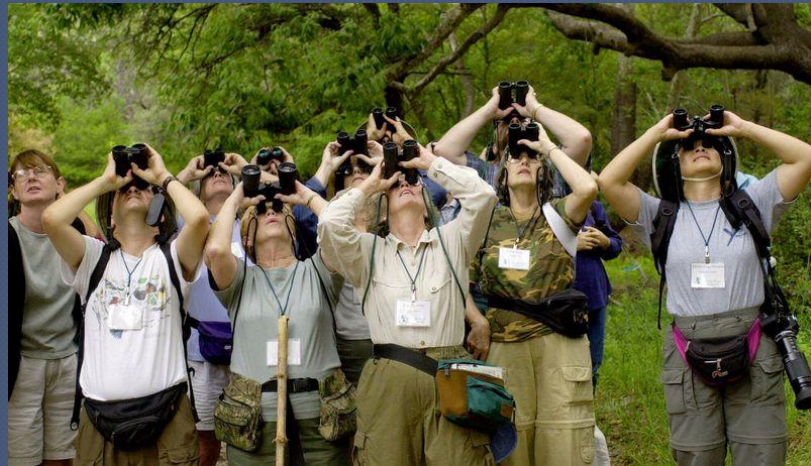
Trekking is best way to pass your idle time. India has a good opportunities for the trekkers. The varied topography of India has some very special and unique things to offers you, at every step you put forward.



Activities

○ Bird watching

- Enjoy excursion, peaceful and adventure of exploring and filming some of the rare species of birds like Himalayan Griffon, Lammergeier, Blue Winged Minla, Spotted and Slaty-Backed Forktail, Khalij Pheasant and many more.
- Bird Watching (Birding) trails is a very interesting adventure. Its very delightful to watch birds in different colours, shapes and size. The Indian climate and topography allows birds of different feathers to flock together in the ecosystem of India.
- India itself has numerous birds, which one may not find elsewhere in the world.



Activities

- Besides, many of the dense forests, mountains, and rivers offer an extensive variety of Eco activities like Mountaineering, Rock Climbing, Canoeing, white water Rafting, Trekking, Mountain Biking, Nature Walking, Wildlife Viewing and River Rafting.



UNESCO WORLD HERITAGE SITE

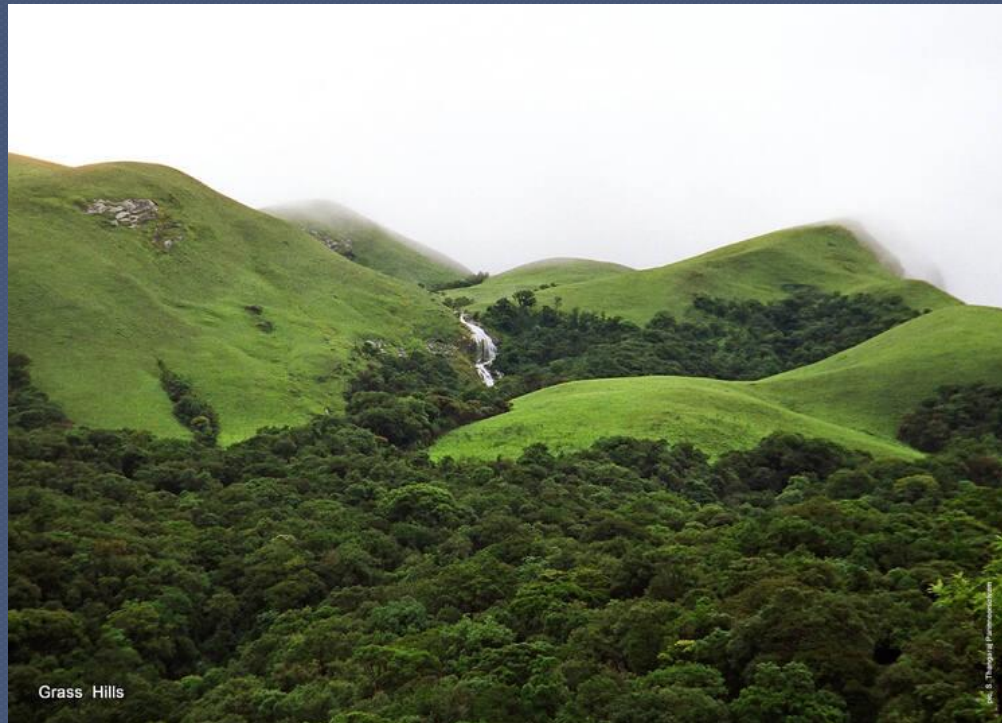
- A **World Heritage Site** is a landmark or area with legal protection by an international convention administered by the United Nations Educational, Scientific and Cultural Organization (UNESCO).
- World Heritage Sites are designated by UNESCO for having cultural, historical, scientific or other form of significance.
- The sites are judged to contain "cultural and natural heritage around the world considered to be of outstanding value to humanity"

Western Ghats

- Older than the Himalaya mountains, the mountain chain of the Western Ghats represents geomorphic features of immense importance with unique biophysical and ecological processes.
- The site's high montane forest ecosystems influence the Indian monsoon weather pattern.
- Moderating the tropical climate of the region, the site presents one of the best examples of the monsoon system on the planet.
- It also has an exceptionally high level of biological diversity and endemism and is recognized as one of the world's eight 'hottest hotspots' of biological diversity.
- The forests of the site include some of the best representatives of non-equatorial tropical evergreen forests anywhere and are home to at least 325 globally threatened flora, fauna, bird, amphibian, reptile and fish species.

Western Ghats

- The Western Ghats are internationally recognized as a region of immense global importance for the conservation of biological diversity, besides containing areas of high geological, cultural and aesthetic values.



Western Ghats

- A chain of mountains running parallel to India's western coast, approximately 30-50 km inland, the Ghats traverse the States of Kerala, Tamil Nadu, Karnataka, Goa, Maharashtra and Gujarat.
- These mountains cover an area of around 140,000 km² in a 1,600 km long stretch that is interrupted only by the 30 km Palghat Gap at around 11°N.
- Older than the great Himalayan mountain chain, the Western Ghats of India are a geomorphic feature of immense global importance.

Western Ghats

- The Outstanding Universal Value of the Western Ghats is manifested in the region's unique and fascinating influence on large-scale biophysical and ecological processes over the entire Indian peninsula



Thenmala- First Planned Eco Tourism Destination in India

- Kerala - God's Own Country is the first state who planned countries first eco tourism destination Thenmala.
- It is a small village, situated in the foot hills of the Western Ghat Mountains.
- It is 72 km away from Thiruvananthapuram, the capital of Kerala, the southernmost state of India.



Thenmala Wildlife Resource

- The Shenduruney Wildlife Sanctuary is the imperative ecotourism asset of Thenmala in Kerala.
- This Wildlife Sanctuary is of around 100 sq km in range and occupies expansive supply of widely varied vegetation.
- The Shenduruny forest declared a wildlife sanctuary in year 1984. It got its name from endemic types of tree called Chenkuruny (*Gluta travancoria*).

Deer Rehabilitation Centre

- The deer rehabilitation centre was set up to secure and preserve the deer that are strayed out from forests.
- The deer park of Thenmala is an inaccessible part of Thenmala eco-tourism and is constructed within the Kallada river side forest.
- Apart from different varieties of deer's and Tree Houses are the major attractions over here and a little Children's park with some environmentally mixed resting places

