

Biodiversity And Conservation

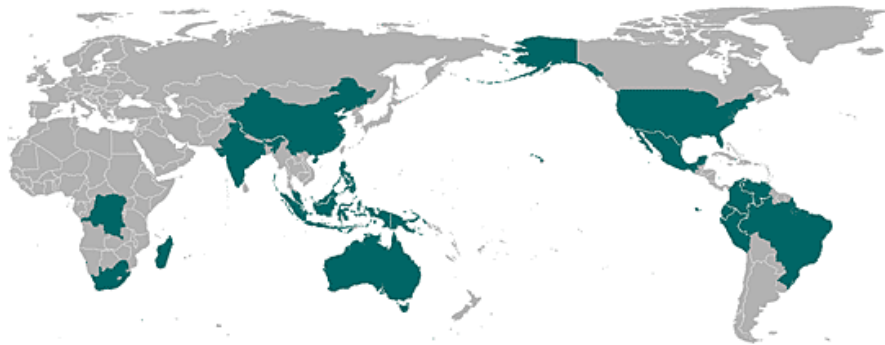
Biological diversity, or **biodiversity**, is the variety of the earth's species, the genes they contain, the ecosystems in which they live, and the ecosystem processes such as energy flow and nutrient cycling that sustain all life.

Megadiverse countries

The concept was first developed by **Russell Mittermeier** in 1988, as a way to prioritize conservation action. Based on an analysis of primate conservation priorities, he found that four countries accounted for two-thirds of all primate species. The analysis was then expanded to include other mammals, birds, reptiles, amphibians, plants and selected groups of insects.

This resulted in **17 countries** being identified, representing more than two-thirds of all (known) life forms and the majority of tropical rainforests, coral reefs and other priority systems. This group of countries has less than 10% of the global surface, but support more than 70% of the biological diversity on earth.

- Australia
- The Congo
- Madagascar
- South Africa
- China
- India
- Indonesia
- Malaysia
- Papua Guinea
- Philippines
- Brazil
- Colombia
- Ecuador
- Mexico
- Peru
- United States
- Venezuela

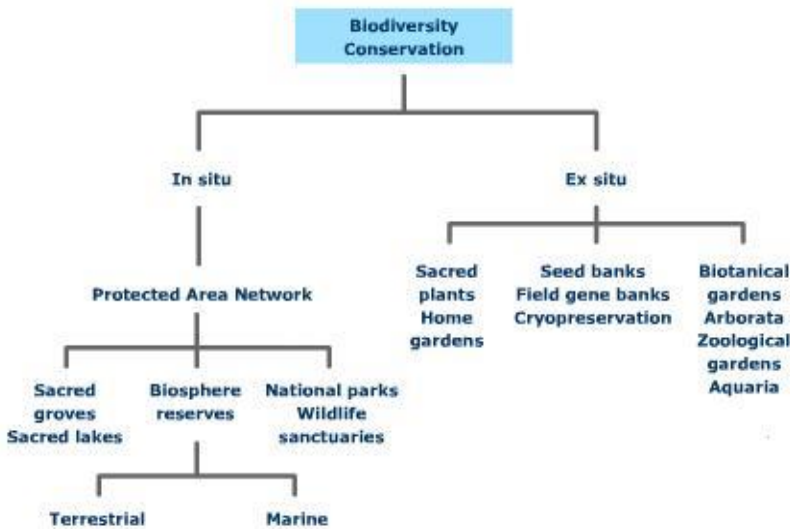


Biodiversity hotspotsA biodiversity hotspot is a biogeographic region with a significant reservoir of biodiversity that is under threat from humans. To qualify as a biodiversity hotspot on **Myers** 2000 edition of the hotspot-map, a region must meet two strict criteria:

1. it must contain at least 0.5% or 1,500 species of vascular plants as endemics, and
2. it has to have lost at least 70% of its primary vegetation

According to this concept 25 hot spots have been initially identified for conservation of biodiversity. Amongst these, 15 hot spots have tropical forest in Mediterranean typed zones and the rest are present in tropics. Nine sites have been added making it **34 hotspots**. India has **three** hot spots. These are **Western Ghats, North east (Indo-Burma) and Eastern Himalayas**. All of these areas are inhabited by a variety of flowering plants, reptiles, mammals, amphibian and butter flies.

Biodiversity conservation:



In-situ conservation:In-situ (on the site conservation) conservation is being done by declaring area as protected area. In India following types of natural habitats are being maintained

- A. National parks
- B. Wildlife sanctuaries
- C. Biosphere reserves

<p>National Park (102 in number)</p>	<p>No human activity or settlement allowed. Villagers cannot graze their animals, Extremely strict rules about jungle produce collection (Tendu leaves, Honey etc.)</p>
<p>Wildlife Sanctuary (441)</p>	<p>People are not allowed to live (some exceptions though) but some human activities are allowed, such as grazing, firewood collection. Tourism is permitted. A Sanctuary can be upgraded as a National Park. However a National Park cannot be downgraded as a Sanctuary.</p>
<p>Biosphere reserve (18)</p>	<p>People are allowed to live, own private land and carry on their traditional activities. (In the outer-zone)</p>

Ex-situ conservation strategies:Such strategies (out of the site conservation) include establishment of botanical gardens, zoos, conservation strands and gene, pollen seed, seedling, tissue culture and DNA banks.

- **Seed gene bank:** This is easiest way to store the germ plasma of plants at low temperature.
- **Field gene bank:** Genetic variability also be preserved by field gene bank under normal growing conditions.
- **Cryopreservation:** This type of conservation is done at very low temperature i.e. 196°C is liquid nitrogen.
- **Botanical gardens:** In more than 1500 botanical gardens and arboreta (botanical garden where particular shrubs and trees are grown) are in the world. In such gorgeous move them 80,000 species are found. Many botanical gardens have the facilities of seed banks, tissue culture and other latest technologies.
- **Zoos:** In world there are about 800 zoos. Such zoos have about 3000 species of vertebrates. Some zoos have undertaken captive breeding programmes.

Endangered and Threatened species of India

Endangered species in India comprise large varieties of rare species of wild animals, aquatic animals and insects. **Statistics of Endangered Species in India.** As per the official records, in India, there are over 130000 endangered animal species, although some experts believe that the number may be even more than the projected figures. However, some claim that the number is actually much more

Types of Endangered Species in India

The endangered species in India have been divided into 4 main categories-

- * Critically Endangered (CR),
- * Endangered (EN),
- * Vulnerable (VU) and
- * Threatened.

Critically Endangered and Endangered Species in India

Critically Endangered species in India, as identified by the IUCN and WII include the Siberian Tiger, Asian Elephants, Golden, Royal Bengal Tigers, Jenkins Shrew, Malabar Large-spotted Civet, Red Panda, Sei Whale,

Vulnerable and Threatened Species in India

These species include the Asiatic Wild Dog, Banteng Bosjavanicus, Brow-antlered Deer, Brown Bear, Brown Palm Civet, Clouded Leopard, Common Otter, Ganges River Dolphin, Gaur, Goral, Grey Indian Wolf, Himalayan W-toothed Shrew, Himalayan Musk Deer, Himalayan Shrew, Jackal Canis Aureus, Andaman Horseshoe Bat, Andaman Rat, Argali, Asiatic Golden Cat, Asiatic Wild Ass, Macaque Monkey, Back-striped Weasel, Barasingha, Bare-bellied Hedgehog, Blackbuck, Brown fish owl, Central Kashmir Vole, Dhole, Dugong, Eld's Deer, Elvira Rat, Eurasian Otter, Fishing Cat, Four-horned Antelope, Gaur.