

## Biodiversity কাকে বলে?

### Definition (1):

Biodiversity বা জীব বৈচিত্র্য হলো পৃথিবীতে জীবনের বিভিন্নতা এবং পরিবর্তনশীলতা। জীববৈচিত্র্য সাধারণত প্রজনন, প্রজাতি এবং বাস্তুতন্ত্র স্থরে পরিবর্তনের একটি পরিমাপ।

### Definition (2):

জীববৈচিত্র্য বলতে স্থল, সামুদ্রিক এবং অন্যান্য জলজ বাস্তুসংস্থান এবং বাস্তুসংস্থানীয় যৌগগুলো তারা যেগুলোর অংশ সেগুলি সহ সমস্ত উৎস থেকে জীবিত প্রাণীর মধ্যে পরিবর্তনশীলতা; এর অন্তর্ভুক্ত হলো একই প্রজাতির মধ্যে, প্রজাতিদের মধ্যে এবং বাস্তুতন্ত্রের মধ্যে বৈচিত্র্য।

পরিবেশের ওপর নির্ভর করে বিভিন্ন পরিবেশ তন্ত্রে বাস করা জৈব সম্প্রদায় সমূহের মধ্যে যে জৈবিক বৈচিত্র্যের সৃষ্টি হয় তাক পরিবেশীয় বৈচিত্র্য বলে। পরিবেশের বিভিন্ন ভৌতিক উপাদান, যেমন - আদ্রতা, উষ্ণতা, দ্রাঘিমাংশ, অক্ষাংশ ইত্যাদি জৈবিক বৈচিত্র্যের সৃষ্টি করতে পারে। হুইটেকার(Whittaker)1972 সালে বাস্তুতান্ত্রিক জীববৈচিত্র্যের নির্ধারণের তিনটি সূচক প্রস্তাব করেছেন। এই সূচকগুলি হল- ১) আলফা বৈচিত্র্য; ২) বিটা বৈচিত্র্য; ৩)গামা বৈচিত্র্য

*Alpha diversity* refers to the average species diversity in a habitat or specific area. Alpha diversity is a local measure.

*Beta diversity* refers to the ratio between local or alpha diversity and regional diversity. This is the diversity of species between two habitats or regions. It is calculated by the following equation:  
(number species in habitat 1- number of species habitat 2&1 have in common)+(number of sp in H2- number of sp H1&2 have in common)

*Gamma diversity* is the total diversity of a landscape and is a combination of both alpha and beta diversity.

**Biogeographic classification of India** is the division of [India](#) according to [biogeographic](#) characteristics. Biogeography is the study of the distribution of [species \(biology\)](#), [organisms](#), and [ecosystems](#) in geographic [space](#) and through [geological time](#). There are ten biogeographic zones in India.<sup>[1]</sup>

1. Trans Himalayan zone.
2. Himalayan zone
3. Desert zone.
4. Semiarid zone.
5. Western ghat zone.
6. Deccan plateau zone.
7. Gangetic plain zone.
8. North east zone.
9. Coastal zone.
10. Islands



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## Trans-Himalayan Region

The Himalayan ranges immediately north of the Great Himalayan range are called the Trans- Himalayas. The Trans-Himalayan region with its sparse vegetation has the richest wild sheep and goat community in the world. The snow leopard is found here, as is the migratory black-necked crane. It accounts for 5.7% of the country's landmass.

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## Himalayas

The Himalayas consist of the youngest and loftiest mountain chains in the world. The Himalayas have attained a unique personality owing to their high altitude, steep gradient and rich temperate flora.

The forests are very dense with extensive growth of grass and evergreen tall trees. Oak, chestnut, conifer, ash, pine, deodar are abundant in Himalayas. There is no vegetation above the snowline. Several interesting animals live in the Himalayan ranges. Chief species include wild sheep, mountain goats, ibex, shrew, and tapir. Panda and snow leopard are also found here.

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## Semi-Arid Areas

Adjoining the desert are the semi-arid areas, a transitional zone between the desert and the denser forests of the Western Ghats. The natural vegetation is thorn forest. This region is characterized by discontinuous vegetation cover with open areas of bare soil and soil-water deficit throughout the year.

Thorny shrubs, grasses and some bamboos are present in some regions. A few species of xerophytic herbs and some ephemeral herbs are found in this semi-arid tract. Birds, jackals, leopards, eagles, snakes, fox, buffaloes are found in this region.

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## Western Ghats

The mountains along the west coast of peninsular India are the Western Ghats, which constitute one of the unique biological regions of the world. The Western Ghats extend from the southern tip of the peninsula (8°N) northwards about 1600 km to the mouth of the river Tapi (21°N).

The mountains rise to average altitudes between 900 and 1500 m above sea level, intercepting monsoon winds from the southwest and creating a rain shadow in the region to their East.

The varied climate and diverse topography create a wide array of habitats that support unique sets of plant and animal species. Apart from biological diversity, the region boasts of high levels of cultural diversity, as many indigenous people inhabit its forests.

The Western Ghats are amongst the 25 biodiversity hot-spots recognized globally. These hills are known for their high levels of endemism expressed at both higher and lower taxonomic levels. Most of the Western Ghat endemic plants are associated with evergreen forests.

The region also shares several plant species with Sri Lanka. The higher altitude forests were, if at all, sparsely populated with tribal people. Rice cultivation in the fertile valley proceeded gardens of early commercial crops like areca nut and pepper. The original vegetation of the ill-drained valley bottoms with sluggish streams in elevations below 100m would be often a special formation, the Myristica swamp.

Expansion of traditional agriculture and the spread of particularly rubber, tea, coffee and forest tree plantations would have wiped out large pockets of primary forests in valleys. The Western Ghats are well known for harboring 14 endemic species of caecilians (i.e., legless amphibians) out of 15 recorded from the region so far.

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## North-West Desert Regions

This region consists of parts of Rajasthan, Kutch, Delhi and parts of Gujarat. The climate is characterised by very hot and dry summer and cold winter. Rainfall is less than 70 cm. The plants are mostly xerophytic. Babul, Kikar, wild palm grows in areas of moderate rainfall. Indian Bustard, a highly endangered bird is found here. Camels, wild asses, foxes, and snakes are found in hot and arid parts of the desert.

## Deccan Plateau

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Beyond the Ghats is Deccan Plateau, a semi-arid region lying in the rain shadow of the Western ghats. This is the largest unit of the Peninsular Plateau of India. The highlands of the plateau are covered with different types of forests, which provide a large variety of forest products. The Deccan plateau includes the region lying south of the Satpura range. It extends up to the southern tip of peninsular India. Anai mudi is the highest peak of this region. The Deccan plateau is surrounded by the western and the eastern ghats. These ghats meet each other at the Nilgiri hills. The western ghats include the Sahyadri, Nilgiris, Anamalai, and Cardamom hills. Many rivers such as Mahanadi, Godavari, Krishna, and Kaveri originate from the western ghats and flow toward the east. The eastern ghats are broken into small hill ranges by rivers coming from the western ghats. Most of these rivers fall into the Bay of Bengal. The Godavari is the longest river in the Deccan plateau. The Narmada and the Tapi flow westwards and fall into the Arabian Sea.

## Gangetic Plain

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In the North is the Gangetic plain extending up to the Himalayan foothills. This is the largest unit of the Great Plain of India. Ganga is the main river after whose name this plain is named. The alluvial Great Plains cover about 72.4 million ha area with the Ganga and the Brahmaputra forming the main drainage axes in the major portion.

The thickness of the alluvial sediments varies considerably with its maximum in the Ganga plains. The physiogeographic scenery varies greatly from arid and semi-arid landscapes of the Rajasthan Plains to the humid and per-humid landscapes of the Delta and Assam valley in the east.

Topographic uniformity, except in the arid Western Rajasthan is a common feature throughout these plains. The plain supports some of the highest population densities depending upon a purely agro-based economy in some of these areas. The trees belonging to these forests are teak, sal, shisham, mahua, khair etc.

## North-East India

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North-east India is one of the poorest regions in the country. It has several species of orchids, bamboos, ferns and other plants. Here the wild relatives of cultivated plants such as banana, mango, citrus and pepper can be grown.

## Islands

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The two groups of islands, i.e., the Arabian Sea islands and Bay Islands differ significantly in origin and physical characteristics. The Arabian Sea Islands (Laccadive, Minicoy, etc.) are the remnant of the old land mass and subsequent coral formations. On the other hand, the Bay Islands lay only about 220 km.

Away from the nearest point on the main land mass and extend about 590 km. With a maximum width of 58 km the island forests of Lakshadweep in the Arabian Sea have some of the best-preserved evergreen forests of India. Some of the islands are fringed with coral reefs. Many of them are covered with thick forests and some are highly dissected.

## Coasts

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India has a coastline extending over 7,516.4 km. The Indian coasts vary in their characteristics and structures. The west coast is narrow except around the Gulf of Cambay and the Gulf of Kutch. In the extreme south, however, it is somewhat wider along the south Sahyadri.

The backwaters are the characteristic features of this coast. The east coast plains, in contrast, are broader due to depositional activities of the east-flowing rivers owing to the change in their base levels.

Extensive deltas of the Godavari, Krishna and Kaveri are the characteristic features of this coast. Mangrove vegetation is characteristic of estuarine tracts along the coast for instance, at Ratnagiri in Maharashtra.

Larger parts of the coastal plains are covered by fertile soils on which different crops are grown. Rice is the main crop of these areas. Coconut trees grow all along the coast.

Coconut and rubber are the main vegetation of the coastal area. The main states of coastal areas are- Gujarat, Maharashtra, Goa, Karnataka, Kerala, West Bengal, Odisha, Andhra Pradesh, Tamil Nadu and Puducherry.