


BIOGEOGRAPHICAL CLASSIFICATION OF INDIA

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India, being a vast country, shows a great diversity in climate, topography and geology and hence the country is very rich in terms of biological diversity.

India's biological diversity is one of the most significant in the world, since India has only 2% of the total landmass of the world containing about 6% of the world's known wildlife.

GEOGRAPHY AND MAJOR BIOMES OF INDIA

India is the seventh largest country in the world and Asia's second largest nation with an area of 3,287,263 sq.km. encompassing a varied landscape rich in natural resources.

India is shielded by the world's highest mountains, the Himalayas, in the north.

The southern part of India takes the shape of a peninsula and divides the Indian Ocean into the Bay of Bengal to the southeast and the Arabian Sea to the southwest.

The southern tip of Kanyakumari is washed by the Indian Ocean. The Andaman and Nicobar Islands in the Bay of Bengal and the Lakshadweep group of islands in the Arabian sea are also a part of India.

PLANTS IN INDIA

- Total number of plant species recorded in the world **2,50,000** species
- In India **45,000** species 33% of the above are native.
- There are 15,000 flowering plant species which is 6% of the world's total.
- Areas rich in endemism are the Northeast, the Western Ghats and the Northwestern and Eastern Himalayas.
- Andaman & Nicobar Islands contribute at least 200 endemic species to the endemic flora.

Animals In India

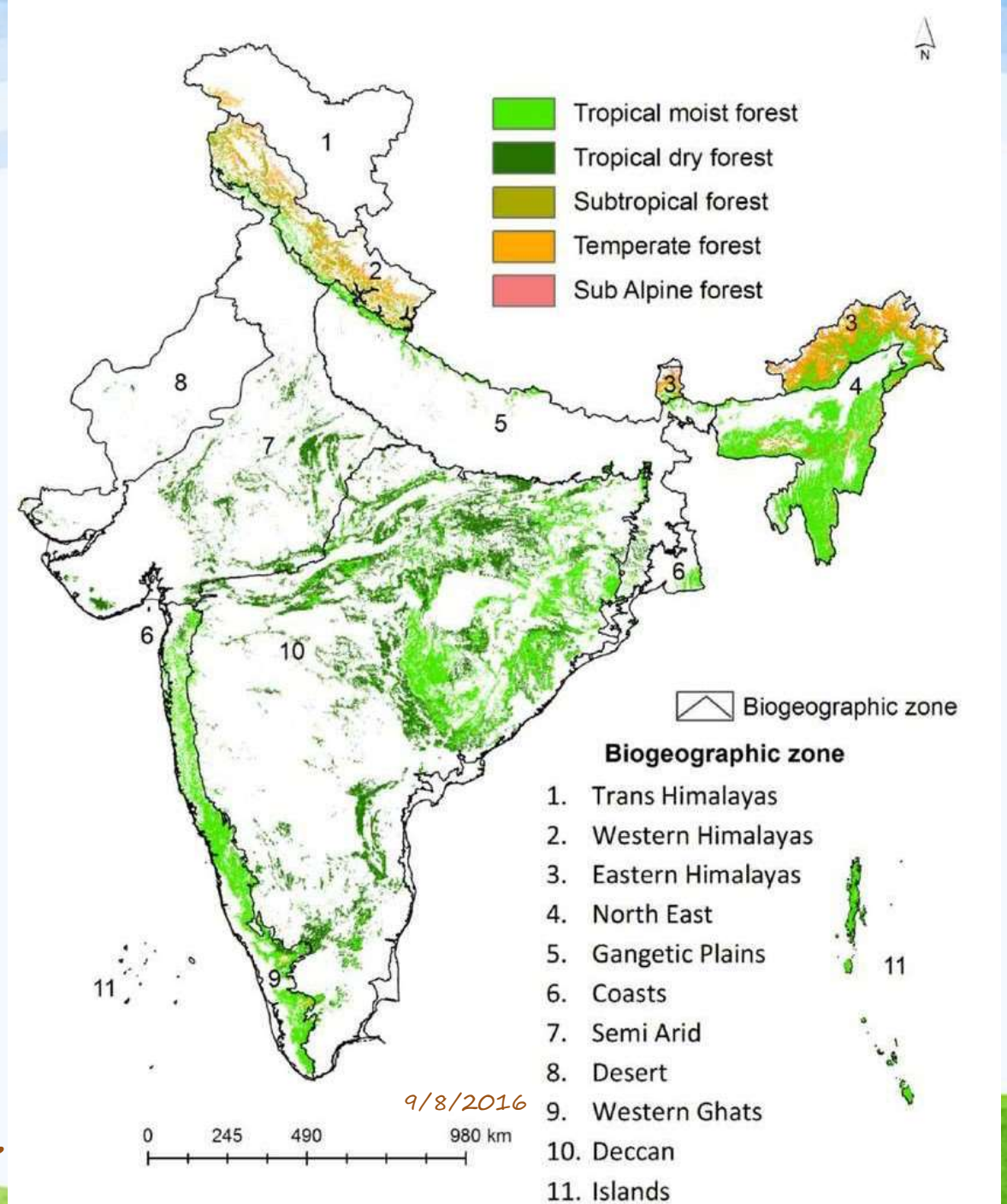
Total animal species recorded In the world **11,96,903** In India **86,874**

India possesses little more than 7% of the total animal species of the world. This percentage is higher than that of the plant species. Out of a total of 86,874 animal species, insects alone comprise 68.52% and chordates 5.70%

Among the large animals, 173 species of mammals, 101 of birds, 15 of reptiles, 3 of amphibians and 2 of fishes are considered endangered.

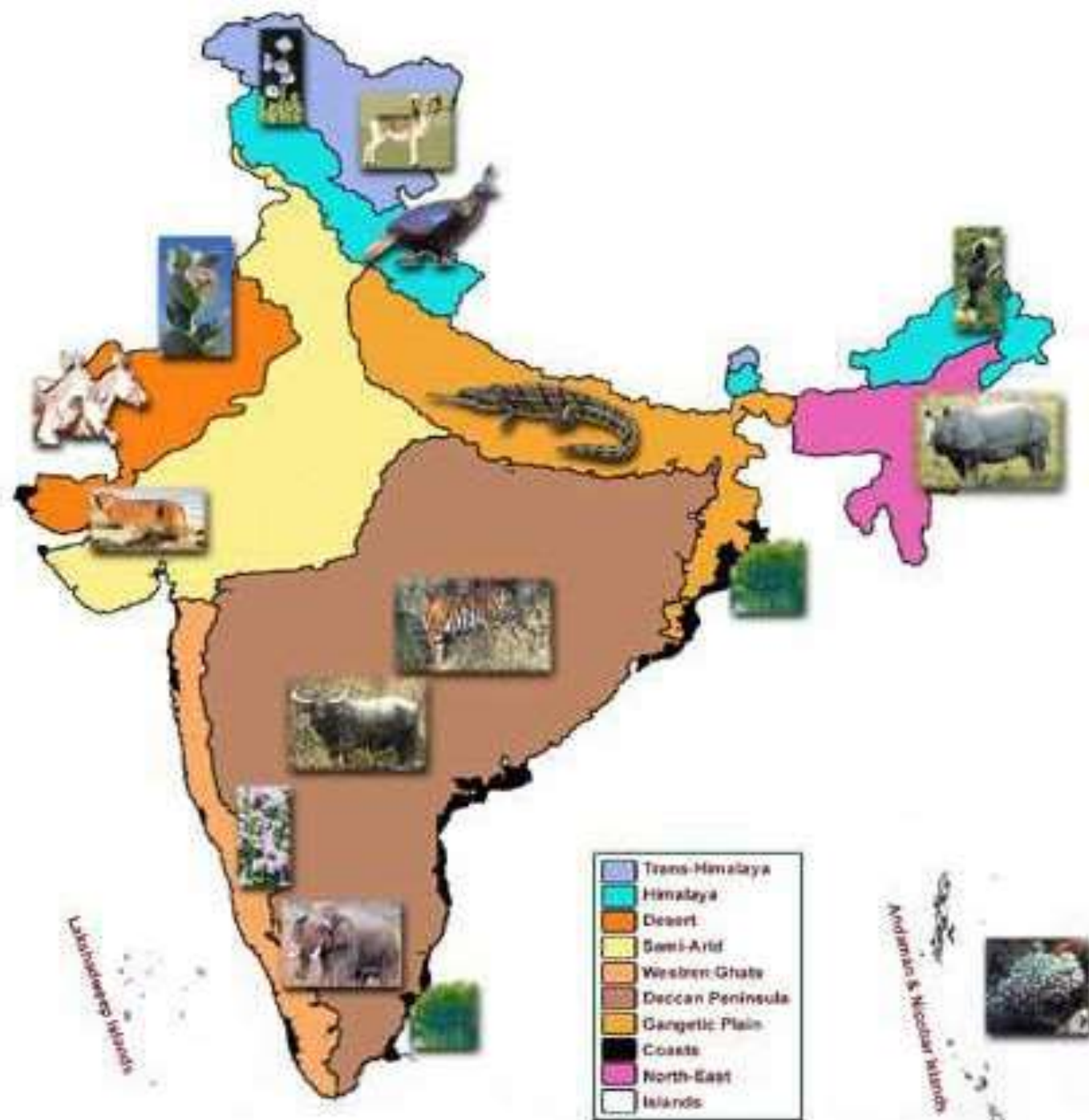
OVERVIEW

- Trans Himalayan zone.
- Himalayan zone
- Desert zone.
- Semiarid zone.
- Western ghat zone.
- Deccan plateau zone.
- Gangetic plain zone.
- North east zone.
- Coastal zone.
- Islands present near the shore line.



Biogeographic zones in India

- *Trans Himalayan zone.*
- *Himalayan zone*
- *Desert zone.*
- *Semiarid zone.*
- *Western ghat zone.*
- *Deccan plateau zone.*
- *Gangetic plain zone.*
- *North east zone.*
- *Coastal zone.*
- *Islands present near the shore line.*



Trans-Himalayan region



FEATURES OF TRANS HIMALAYAS

- ❖ *COLD AND ARID REGION.*
- ❖ *TEMPERATURE -35 to 3 degrees Celsius*
- ❖ *4500 mts. Above mean sea level*
- ❖ *sparse vegetation has the richest wild sheep and goat community in the world*
- ❖ *Extensive area covered by BARE ROCKS and GLACIERS*
- ❖ *FAUNA:-*
 - *wild sheep, wild goats, ibex, snow leopard, marbled cats, marmots, black necked crane*



Marco polo sheep - ratio of horn length to body weight exceeds that of any animal in the world

HIMALAYAS HIMALAYAS

- **FEATURES:-**

- ❖ *Flora: 2,50,000 species*

- ❖ *Fauna: 45,000 species*

- ❖ *Tropical Rainforests- Eastern Himalaya*

- ❖ *Thick subtropical and Alpine forests – central Himalaya, western Himalaya*

- ❖ *Rich endemic forests in north east*

- ❖ *Chief species include wild sheep, mountain goats, ibex, shrew, and tapir. Panda and snow leopard are also found here.*

Classification	No. of species
Angiosperms	15,000
Gymnosperms	64
Pteridophytes	1,022
Bryophytes	2,584
Algae	2,500
Fungi	23,000
Bacteria	850
Lichens	1,600
<i>Source: Rao, 1994: BSI, 1992</i>	

TOPOGRAPHY OF MALAYAS

- *Young mountains*
- *Series of mountains running parallel to each other.*
- *Thick gravel and alluvium*
- *Source of major snow fed rivers of India.*
- *Snow covered peaks, glaciers and pristine rivers.*



DESERT

1. Deserts in India include Thar desert and Kutch.
2. They receive around 25 cm of precipitation annually.
3. Temperature: 30 to 50 degrees
4. Fauna : Snakes, Owls , mice, armadillo lizards, foxes, bats, vultures, rabbit, cats ,camel etc.
5. Flora: Cactus, prickly pear, octillo plant, boojum.
6. Hot and extreme climate.
7. Vegetation found in oasis.
8. Soil is composed of sand and hard rocks.
9. States covered: Rajasthan and Gujarat



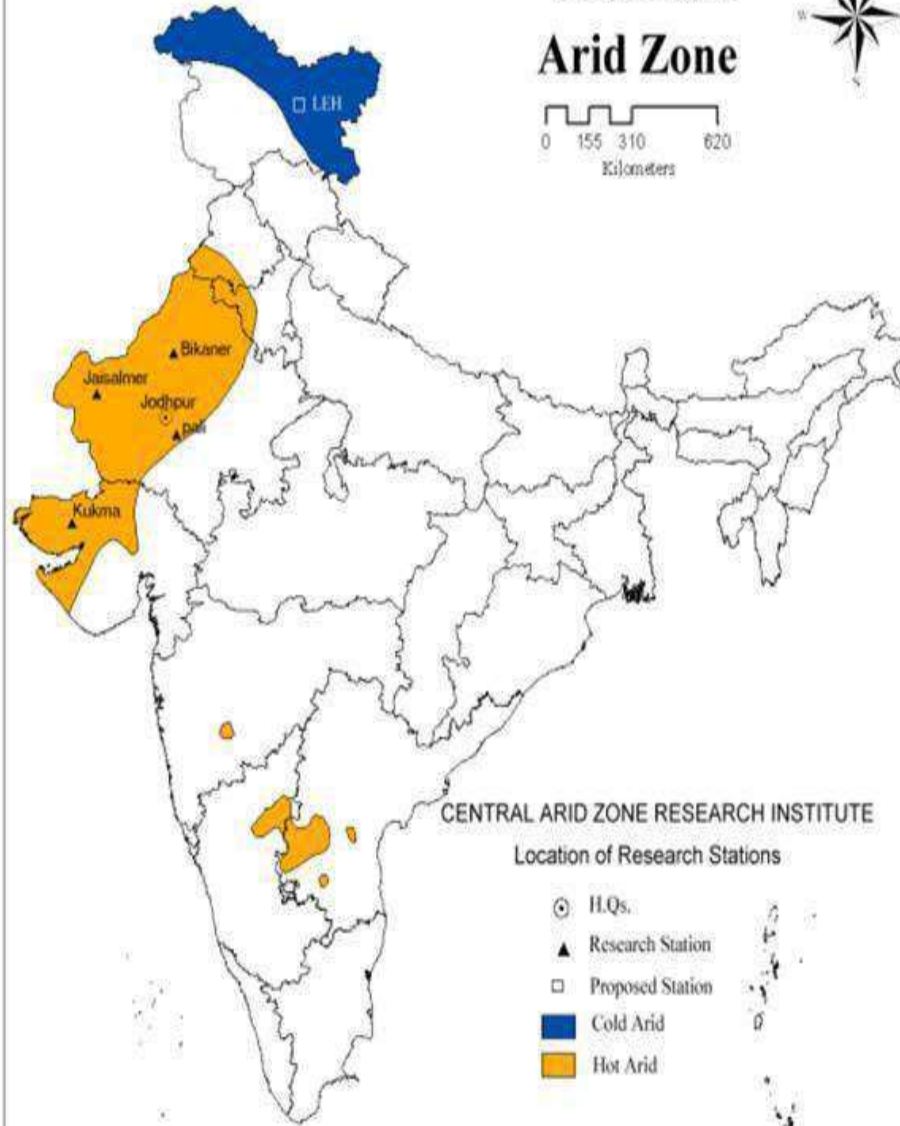
SEMI ARID REGIONS

1. States included: Parts of Punjab, Haryana, Gujarat, Maharashtra.
2. Transitional zone between desert and dense forests of western Ghats.
3. Natural vegetation is thorn forest.
4. Discontinuous vegetation, that is, vegetation in patches.
5. Open areas of bare and water deficit soil.
6. Flora: Thorny shrubs, grasses, cereals, some variety of bamboo, dry forests.
7. Fauna: Birds, jackals, leopards, eagles, snakes, fox, buffalo. Gazelle, lions, wolves, zebras, deer etc.

INDIA Arid Zone



0 155 310 620
Kilometers



CENTRAL ARID ZONE RESEARCH INSTITUTE

Location of Research Stations

- ⊙ H.Qs.
- ▲ Research Station
- Proposed Station
- Cold Arid
- Hot Arid

CAZRI
Jodhpur, 2008



WESTERN GHATS

- *Covers Malabar plains and Western Ghats.*
- *States included: Tamil Nadu, Maharashtra, Karnataka, Parts of Kerala.*
- *Mountains along the west coast of India.*
- *Average altitude of mountains: 900-1500 mts. Above sea level.*
- *Diverse topography. Unique sets of flora and fauna.*
- *Rich evergreen forests, medicinal plants, ornamental plants.*
- *Included in the biodiversity hotspots of the world.*

- *Sparsely populated. Mainly tribal population lives there.*
- *Fertile land for rice cultivation, commercial crops, plantation etc.*
- *14 endemic species of legless amphibians.*
- *Fauna: home to 325 globally threatened species, 16 species of endemic mammals, tiger, lion tailed macaque, 288 freshwater species, 508 species of birds, 6000 species of insects, 344 species of butterflies,*



DECCAN PLATEAU

- *Semi arid regions lying in the rain shadow region of western Ghats.*
- *Central and eastern highlands provide many forest products.*
- *Composed of oldest crystalline rocks.*
- *Height varies from 300 to 900 mts above sea level.*
- *It is semi arid in the north and tropical in most parts.*
- *Rain falls in the monsoon and temperature can exceed up to 40 degrees in summer.*

- *Types of forests: deciduous, thorn forests and scrublands.*
- *Consists mainly of black soil. Suitable for commercial crops, especially, cotton.*
- *Flora: teak, Sal.. Consists mainly of dry deciduous forests.*
- *Fauna: grazing animals, four horned rhinoceros, gaur, wild water buffalo, bear, wild dog, Indian giant squirrel, tiger etc.*
- *Home to more than ninety species of animals and various other carnivores.*



Deccan Plateau



GANGETIC PLAINS

- *Alluvial soil, fertile soil, drained by river ganga.*
- *Purely agro based area.*
- *Major trees in this area: teak, Sal, shisham, mahua, khair etc.*
- *Moist deciduous forests, densest human population.*
- *Fauna: Tiger, one horned rhinoceros, Asian elephant, gaur, swamp deer, crocodile, gharial and a large number of other vertebrae.*
- *States covered: Parts of Haryana, Uttar Pradesh, Bihar, parts of west Bengal.*

- *25-35 cm of annual rainfall.*
- *Patches of grassland ecosystem.*
- *79 known species of mammals.*
- *Lots of biodiversity conservation areas.*
- *95% of the land converted into agricultural land*



Coastal zone

- Includes west coast, east coast and Lakshadweep.
- India has coastline extending 5500 kms.
- Best preserved evergreen forests are found here, Lakshadweep. especially, in
- Mangrove forests – a prominent feature.
- Coral reefs are found in Lakshadweep.
- Fertile land is found here. Most suitable for rice and coconut trees.

- *Flora: railroads vines, coconut trees, beach grass etc.*
- *Fauna: large variety of birds, insects and marine animals. Seagulls, pelican, penguin, terns, crabs, sea turtles, seals etc.*
- *States covered: Kerala, Tamil nadu, Karnataka, Andhra Pradesh, Gujarat, goa, Maharashtra, Orissa, west Bengal.*



NORTH EAST

- *One of the richest areas of India in terms of biodiversity.*
- *Several species of orchids, bamboos, ferns, mango, bananas, citrus fruits, pepper, medicinal plants etc.*
- *States included: Assam, Arrunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura.*
- *One of the biodiversity hotspots of the world.*
- *Fauna: rich in rare species, red panda, slow Loris, marbled cat, leopard cat, bats and rodents, sangai, wild elephant, blue sheep, yak, lots of species of birds, python and other lower vertebrae, amphibians, butterflies etc.*

- *51 types of forest ecosystems are found in this area, broadly classified into six categories:*
 - *tropical moist deciduous forests*
 - *tropical semi evergreen forests*
 - *tropical wet evergreen forests*
 - *subtropical forests*
 - *temperate forests*
 - *alpine forests.*



ISLANDS

- *It includes Andaman and Nicobar islands and Lakshadweep islands.*
- *Tropical climate, humid weather, no winter season.*
- *Maximum temperature: 28 degree Celsius.*
- *Flora: giant evergreen forests, wet bamboo brakes, semi evergreen forests, mangrove forests, sub montane forests.*
- *Fauna: 50 varieties of forest mammals, wild boar, crocodile, sea cow, leopard, butterflies and moths, shellfish*

- *over 600 species of marine fishes, 78 species of corals, 82 species of seaweed, 52 species of crabs, 2 species of lobsters, 48 species of gastropods, 12 species of bivalves, 101 species of birds.*
- *Sparsely populated, tribal population.*
- *Huge variety of marine species.*

