

◆ Important Definitions

■ Natural Vegetation: Plant life that grows without human interference and has been left undisturbed for a long time (also called virgin vegetation).

■ Flora: Plants of a particular region

■ Fauna: Animals of a particular region

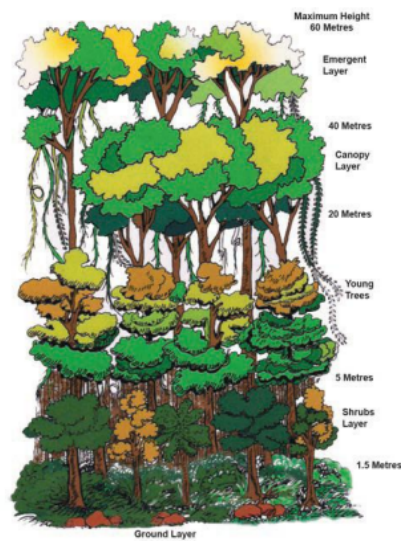
■ Endemic Species: Native to a specific region

■ Exotic Species: Introduced from outside

◆ India's Biodiversity Highlights

- One of 12 mega biodiversity countries in the world
 - ~47,000 plant species (10th in world, 4th in Asia)
 - ~15,000 flowering plants (6% of world total)
 - ~90,000 animal species
 - 2,000+ species of birds (13% of world total)
 - 2,546 species of fish (12% of world stock)
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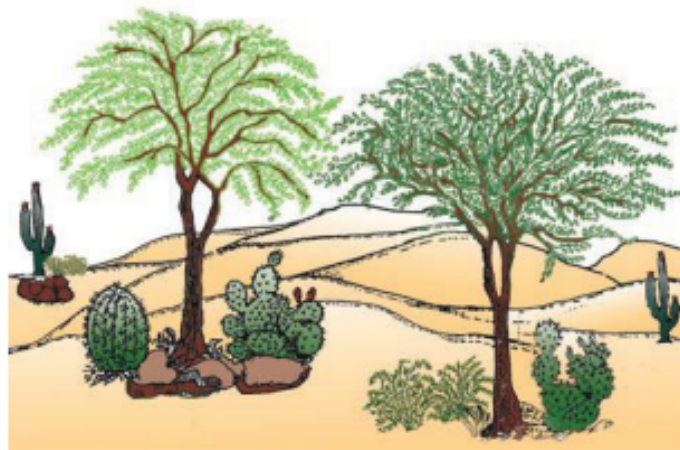
◆ Types of Natural Vegetation in India




📷 Fig 5.1 – Tropical Evergreen Forest



 Fig 5.2 – Tropical Deciduous Forest



 Fig 5.3 – Thorn Forest

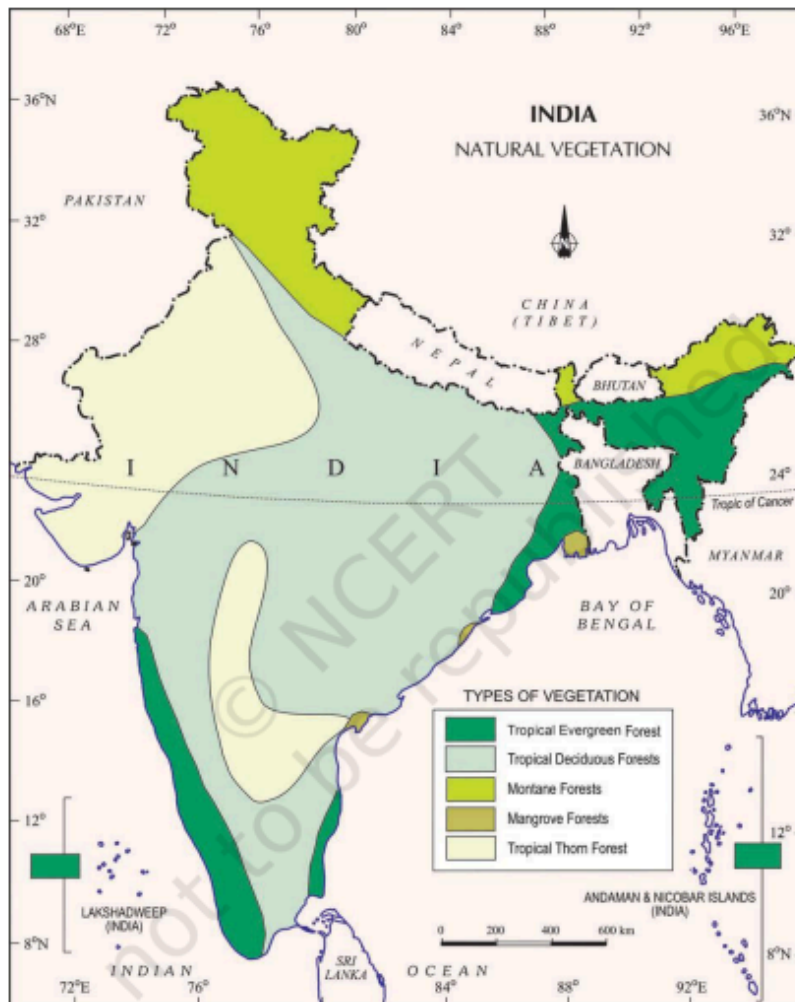


Fig 5.4 – Natural Vegetation Map



Fig 5.5 – Montane Forest

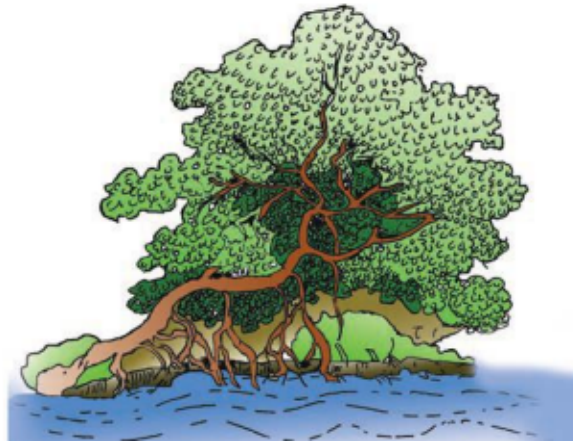


 Fig 5.6 – Mangrove Forest

India has 5 major types of vegetation:

1. 🌴 Tropical Evergreen Forests
2. 🍁 Tropical Deciduous Forests
3. 🌿 Thorn Forests and Scrubs
4. 🌲 Montane Forests
5. 🌊 Mangrove Forests

1. 🌴 Tropical Evergreen Forests

- Found in: Western Ghats, Andaman-Nicobar, Lakshadweep, upper Assam, TN coast
- Rainfall: >200 cm
- Always green; no fixed leaf-fall period
- Dense multilayered forest with trees >60m
- Commercial trees: Ebony, Mahogany, Rosewood, Rubber, Cinchona
- Wildlife: Elephants, monkeys, lemurs, deer, one-horned rhinoceros, bats, birds, sloth

2. 🍁 Tropical Deciduous Forests (Monsoon Forests)

- Most widespread forest type
- Rainfall: 200–70 cm
- Shed leaves in dry summer (6–8 weeks)

Divided into:

● Moist Deciduous Forests

- Areas: NE states, Himalayan foothills, Jharkhand, Chhattisgarh, Odisha, Eastern Western Ghats
- Trees: Teak (dominant), Bamboo, Sal, Shisham, Sandalwood

● Dry Deciduous Forests

- Areas: Peninsular plateau, Bihar, UP plains
- Trees: Teak, Sal, Peepal, Neem
- Many parts cleared for farming & grazing

🐅 **Wildlife:** Tiger, lion, pig, deer, elephant, snakes, lizards, tortoises

3. 🌵 Thorn Forests and Scrubs

- Rainfall: <70 cm
- Found in: Rajasthan, Gujarat, MP, Chhattisgarh, UP, Haryana
- Vegetation: Acacia, Cactus, Palm, Euphorbia
- Features: Scattered trees, long roots, succulent stems, thick leaves to minimize water loss
- Wildlife: Camels, wild ass, fox, lion, rats, mice, rabbits, horses

4. 🌲 Montane Forests

Altitude-based vegetation zones:

- 1000–2000 m: Wet temperate forests – Oaks, Chestnuts
- 1500–3000 m: Coniferous forests – Pine, Deodar, Fir, Spruce
- 3600 m: Alpine vegetation – Junipers, Birch, Moss, Lichens
- Snow line: Tundra-like vegetation

🐾 Animals: Kashmir stag, snow leopard, yak, wild goat, Tibetan antelope, jack rabbit, red panda

Used for grazing by nomads (e.g., Gujjars, Bakarwals)

5. 🌊 Mangrove Forests (Tidal)

- Found along coastlines and deltas: Ganga, Mahanadi, Godavari, Krishna, Kaveri
- Grow in swampy, silty, tidal areas
- Roots submerged in water

Key tree: Sundari (durable timber)

Other plants: Coconut, Keora, Agar

🐅 Wildlife: Royal Bengal Tiger, turtles, crocodiles, snakes, gharials

◆ Wildlife in India

India is home to:

- 90,000+ animal species
- 2,000+ birds
- 2,500+ fish species
- Rare mammals: Elephants (Assam, Kerala, Karnataka), One-horned Rhino (Assam, WB), Indian lion (Gir forest), Tigers (MP, WB, Himalayas), Snow leopard, Red Panda

Birds: Peacock, crane, parakeet, duck, pigeon

Aquatic life: Crocodile, Gharial, Turtles

Himalayas/Ladakh: Yak, bharal, ibex, bear, wild sheep, Tibetan antelope, kiang



Fig 5.7 – Wildlife Reserves Map

◆ Migratory Birds

- Arrive in winter from distant lands (e.g. Siberian Crane)
- Rann of Kachchh: Flamingos nest in salty mud → visual delight!

◆ Medicinal Plants

India is rich in herbal flora used in Ayurveda:

Plant	Use
Sarpagandha	Blood pressure medicine
Jamun	Vinegar & diabetes control
Arjun	Blood pressure & earache cure
Babool	Eye sores, tonic gum
Neem	Antibiotic, antibacterial
Tulsi	Cough & cold cure
Kachnar	Asthma, ulcers, digestive issues

🌿 India has 2000+ medicinal plants, 52 critically endangered (as per IUCN Red List)

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◆ Threats to Biodiversity

- Deforestation, habitat loss
- Overhunting for trade
- Pollution (chemicals, industry waste)
- Invasive alien species
- Acid rain and reckless farming

💀 1,300+ plant species endangered

20 species extinct

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◆ Conservation Measures by Government

1. 18 Biosphere Reserves (12 part of World Network – e.g. Sundarbans, Nanda Devi, Nilgiri, Panna)
2. 103 National Parks, 563 Wildlife Sanctuaries
3. Wildlife Protection Act (1972)
4. Projects: Project Tiger, Project Rhino, Project Great Indian Bustard
5. Assistance to botanical gardens (since 1992)

🧠 We must stop destruction of flora/fauna for survival of our ecosystem!

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Summary Table: Types of Forests

Forest Type	Rainfall	Example Areas	Key Trees/Plants	Wildlife
Evergreen	>200 cm	Western Ghats, NE, A&N	Ebony, Mahogany	Elephant, lemur, bats
Deciduous (Moist)	200–100 cm	NE, Chhattisgarh, E. Ghats	Teak, Sal, Bamboo	Tiger, deer, elephant
Deciduous (Dry)	100–70 cm	MP, Bihar, UP, parts of South	Neem, Peepal	Snake, tortoise, pig
Thorn & Scrub	<70 cm	Rajasthan, Gujarat, Haryana	Cactus, Acacia	Camel, fox, wild ass
Montane	Altitude	Himalayas, NE Hills	Oak, Deodar, Fir	Red panda, yak, snow leopard
Mangrove	Tidal areas	Sundarbans, Godavari delta	Sundari, Keora	Crocodile, tiger, gharial

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Map Work:

- Evergreen forests – Western Ghats, NE, A&N
- Dry deciduous – Interior Deccan, Bihar, UP
- National Parks:
 - North – Corbett, Dudhwa
 - South – Bandipur, Periyar
 - East – Kaziranga, Simlipal
 - West – Gir, Desert National Park