

Shawna - Chapter 03 Terrestrial Ecosystems

- Moisture & temperature - most imp. factors in Terrestrial Ecosys.

- 3.1 - Tundra (Boreal Land).
- (a) Arctic Tundra, below Polar icecap & above tree line. cotton grass, sedges, willow, birches, lichens. animals - reindeer, musk ox, Arctic hare, Caribou, lemmings, squirrel. insects have short life cycle.
- (b) Alpine Tundra high mts. above tree line.

3.2: Forest Ecosystem

(A) Coniferous forest: (Boreal forest)

- High rainfall cold regions, long winters & short summers.
- Evergreen plant species - spruce, fir, pine trees, lynx, wolf, bear, red fox, porcupine, squirrel, amphibians like toads, Rana etc.

Soil of Boreal forest: (1) Acidic and mineral deficient

→ Thin podzolic soil. (because weathering is slow so its decomposition)
⇒ The productivity and community stability of Boreal forest is "Lowest"

(B) Temperate deciduous forest

Moderate climate, broad leaved, soil podzolic and fairly deep.

(C) Temperate Evergreen forest: (Mediterranean)

- Warm dry summers, cool moist winters.
- Low-broad leaved evergreen trees.

(d) Temperate Rain forest

Biodiversity is high as compared to other temperate forest but lower than equatorial rain forest.

(e) Tropical Rain forest: (Equatorial)

- Most diverse and rich communities on earth.
- Forest remains vertically stratified tall trees often covered with vines, creepers, lianas, epiphytic orchids, bromeliads.
- Soil is red Latosols, very thick, but leaching makes them unuseful for agriculture.

Tropical Seasonal forests (Monsoon forest)

- S.E. Asia, Central & South America, Northern Australia, Western Africa & tropical Islands.

Subtropical Rain forests

- epiphytes are common here.
- Broad leaved evergreen. fairly high rainfall but less temperature differences between winters and summers.

Indian forest types

Champion and Seth has classified Indian forest into 16 types

① Tropical Wet evergreen forests

- Western Ghats, N.E. Regions, Andaman and Nicobar Islands.
- Jackfruit, betel, wild palm, Jamun, mango and haldu.
- ferns and orchids are common. Three layers structure.

② Tropical Semi-Evergreen forest

- Western Ghats (rain shadow part), Andaman & Nicobar, Eastern Himalayas.
- mixture of wet evergreen trees and moist deciduous trees.

③ Tropical Moist deciduous forest

Found throughout India except in the western and the north western regions.

- sal, Teak, Bamboo, mango, Rosewood.

④ Littoral and Swamp forest

Marsiy delta of Ganga & Brahmaputra, Andaman & Nicobar.

⑤ Tropical dry deciduous forest

- North India, MP, Gujarat, Andhra, Karnataka, Tamil Nadu.
- Canopy does not exceed 25m.
- Acacia, sal, Bamboo.

⑥ Tropical Thorn forest

Found in areas of black soil - NW & Central India, Spurge, Cactus & cactis. trees does not grow beyond 10m.

7) Tropical Dry Evergreen forest

Hard leaved Evergreen - with fragrant flowers, Pandanus
Andhra Pradesh, Karnataka forest.

8) Sub-tropical Broad leaved forest

Eastern Himalayan, western Ghats along eastern valley.
Pisonia, Cinnamom, Gorkh, alder chestnut cherry trees.

9) Sub-tropical Pine

Steep dry slopes of Shivalik hills, western and central
Himalayan. Khasi, Jaintia and Manipal hills, chin, oak.
Rho dodendron 1 sal etc.

10) Sub-tropical Dry Evergreen forest

Found in the Shivalik hills and foot hills of Himalayas
upto height of 1000 meters.

11) montane Dry temperate forests

North-East of Nepal to Annapurna - there are three layers
of forests - the higher layer has mainly Coniferous & the
middle deciduous (Gorkh) and lowest layer is covered by
Rho dodendron and champa.

In south: Nilgiri hills

12) Himalayan moist temperate forest

In Eastern Himalayas rainfall is much heavier so plants are
lush green & dense. Gorkh, brown, walnut etc.

13) Himalayan Dry temperate forest

Lahul, Kinnaur, Zaskar, etc. Broad-leaved deciduous

14) Sub-alpine forest

15) moist Alpine scrub

16) Dry Alpine scrub

6 types of Grasslands are found in Indian Subcontinent

(i) Dry-sub-humid zone (The Chelima-dichanthum type)

Except Nilgiri whole peninsular India.

(ii) Semi-Arid zone (The Dichanthum-Coenichne lasiurus)

North Gujarat, Rajasthan, Delhi, W.P., Punjab

(iii) Moist sub-humid zone (The Phragmites Saccharum-imperata type).

Ganga Plain in North India.

(iv) The Themeda - Arundinella type

Assam, Manipur, West Bengal, U.P.

- Indian Grassland and Fodder Research Institute - Thanjavur

- Central Arid Zone Research Institute - Jodhpur

Desert Ecosystem > 25cm precipitation

Cold desert fauna (Animals) - Tibetan and Asian Tibetan

Antelope (Caracal) Asiatic Ibis, etc

India is signatory to United Nations Convention to Combat Desertification