Environmental Science: Study of Interrelationship

Kinds of Ecosystems and Communities

- Antelopes (Africa) ➔ Birds
  - Capybaras ➔ Insects
    - (South America) ➔ Reptiles

Mediterranean Shrubland (Chaparral)

- Near an ocean
- Shrubs: Withstand hot & summers and fire-resistant (May be dormant in summer)
- Organisms vary along the world

Organisms

<table>
<thead>
<tr>
<th>Producers</th>
<th>Consumers (General)</th>
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</thead>
<tbody>
<tr>
<td>➔ Woody Shrubs</td>
<td>➔ Insects ➔ Birds</td>
</tr>
<tr>
<td></td>
<td>➔ Reptiles ➔ Mammals</td>
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Tropical dry forest

- Monsoon climate: 4 months water + 8 months dry
- Plants with special adaptations for drought. Some drop their leaves
- Tropical Dry forest’s Animals = Tropical rainforest’s

Tropical rainforest

- Near the Equator
- Good climate → Quick-growing plants
- Water takes nutrients away → Lots of canopy → Poor soil → Not good farmland
- Rainwater dissolves nutrients in the air → Trapped by Epiphytic plants (Plants on plants)
- Epiphytic plants: e.g. Vines, ferns, mosses, orchids
  - They compete for sunlight with the supporting tree
- Plants:
  - (Some) Have extensive root-networks, associated with fungi, to take nutrients from dead plants.
- Greatest biodiversity: Rainforest’s biodiversity > Rest of the world’s together
- Trees = Food, shelter, support
- Canopy = 2-3 levels
  - Ground: No light
  - Below canopy: Shade-tolerant trees
- Fruit-feeding & nectar-feeding animals → Pollination & seed-spreading
- Communication by noises
- Poor + high unemployment countries → Rainforests Under logging & agricultural pressure
- Agriculture + poor soil = Difficult
Taiga

- Evergreen coniferous forest
- Winter = harsh, 6 months
  - Frozen soil
- Humid climate (Spring melting + no evaporation)
- Many lakes, ponds, bogs
- Dry winter: Snow over the soil (not in)
- Trees
  - Needle-shaped leaves = less water loss
  - Flexible leaved
  - Winter-conditions adapted trees
- Animals:
  - Active during summer
- Birds:
  - Migratory
  - Feed on summer insect population

Organisms

- **Producers** ➔ Conifer trees:
  - Spruces
  - Firs
  - Larches
- **Animals** ➔ Birds:
  - Woodpeckers
  - Owls
  - Grouse
- **Mammals:**
  - Deers
  - Caribou
  - Moose
  - Wolves
  - Weasels
  - Mice
  - Snowshoe hare
  - Squirrels

Tundra

- Norther than the taiga
- **Permafrost** = Permanently frozen soil
- Cold temperatures
- Windy
- No trees
- Up to 10-month-long winter
- Ponds, pool... frozen
- Migrant birds: Mate and Raise their young