Ecosystem and it's types

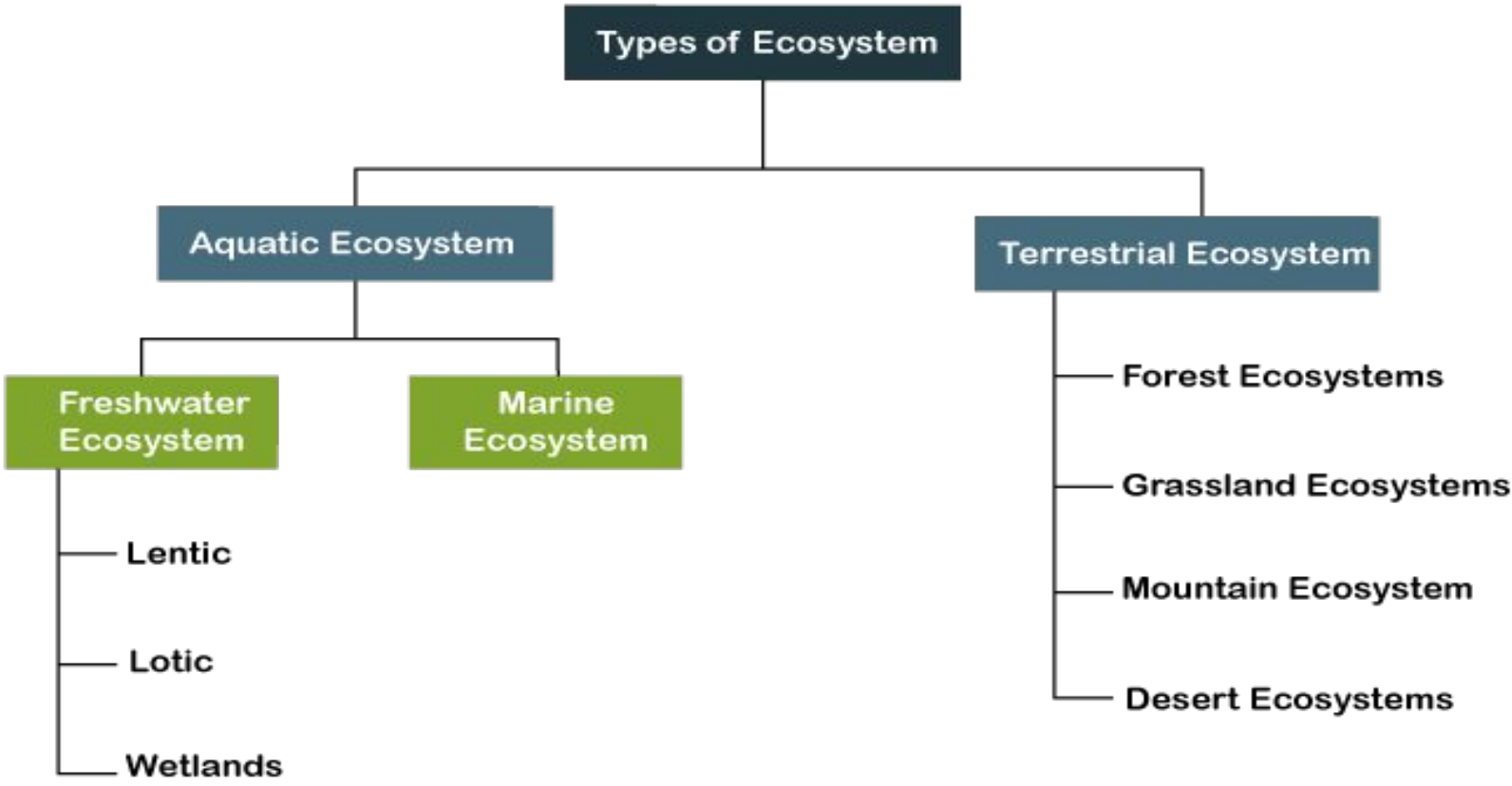
- **Ecosystem is the interaction between living and non living components of environment**

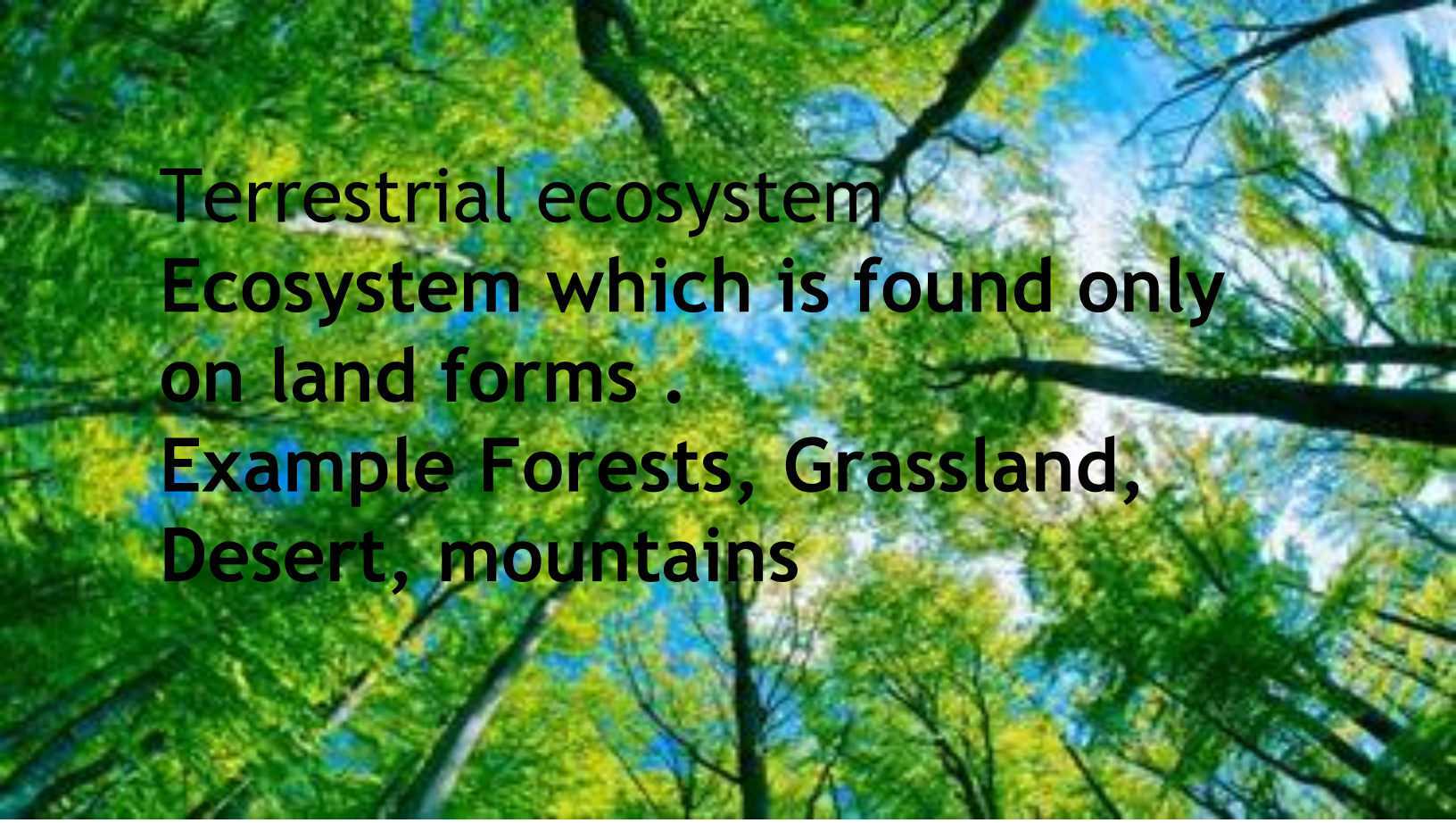
Slides prepared by:

Shruti Dubey

guided by:

Kaminee Rathod Mam


Types of Ecosystem
Aquatic Ecosystem
Terrestrial Ecosystem
Freshwater Ecosystem
Marine Ecosystem
Lentic
Lotic
Wetlands
Forest Ecosystems
Grassland Ecosystems
Mountain Ecosystem
Desert Ecosystems



Terrestrial ecosystem

Ecosystem which is found only on land forms .

Example Forests, Grassland, Desert, mountains

Terrestrial ecosystem:-

Forest:

Land forms consists of big trees and flora and fauna is in greater amount

Grassland:

These are the land forms which consists of plants and shrubs of medium and small heights

Grassland are the areas where the vegetation is dominated by grasses however sedge and rush families can also be found along with variable proportion of legumes like clover and other herbs.grasslands occur naturally on all continents except Antarctica

Characteristics of Grassland

- Grassland are dominated by grass with few or no trees.
- They develop in areas where there is not enough rain for a forest and too much for a forest, therefore it is referred to as a transitional landscape.
- Grassland are found in both temperate and tropical areas where rainfall is between 250mm and 900mm per year.

Climates

- Grasslands often occur in areas with annual precipitation is between 600 mm (24 in) and 1,500 mm (59 in)
- Average mean annual temperatures ranges from −5 and 20 °C.
- However, some grasslands occur in colder (−20 °C) and hotter (30 °C) climatic conditions.
- Grassland can exist in habitats that are frequently disturbed by grazing or fire, as such disturbance prevents the encroachment of woody species.

•Species richness is particularly high in Grasslands of low soil fertility such as serpentine barrens and calcareous grassland, where woody environment is prevented as low nutrients levels in the soil may be inhibit growth of forests and shrub species.

Distribution of Grasslands Across The World

- Grasslands covers 25% of the Earth's surface.1 billion people depend on their livelihood as a food source.
- Grasslands are found on every continent except Antarctica.

Fig 1.1: Map shows the temperate grasslands and the savaannah/tropical grasslands in the world.

Types of Grassland:

- **A grassland consists of large fields of grasses, flowers and herbs. There are two main types of Grasslands Tropical and Temperate with several subcategories within each type.**
- **Tropical grassland**
- **Temparate Grassland**

Tropical Grasslands

Tropical grasslands are warm all year round with established rainy and dry seasons.

During the rainy season, tropical grasslands receive between 50 and 130 centimeters of rain.

Most notable of the tropical grasslands is the African savanna, which has an occasional tree and is home to many of the world's most spectacular species, such as elephants, giraffes, lions and zebras.

Savanna grass is usually quite short, making for excellent grazing and hunting grounds.

Temperate Grasslands

- Temperate grasslands also have two seasons, growing and dormant.
- During the dormant season, no grass or crops grow because it's too cold.
- These grasslands make for excellent farming because of their deep and nutrient-rich soils.
- Temperate grasslands receive between 25 and 75 centimeters of rain a year.

Fauna of Grasslands

- Grasslands have higher number of invertebrates than any other taxonomic group.
- Most reptiles and amphibians are predators.
- Few bird species inhibit Grasslands.
- Small mammals like moles , shrews , squirrels,are present in North American grassland.

Plants of Grasslands

- When rainy season arrives,many grassland become coated with flowers,some of which can survive well into winter with the help of underground storage organs and thick stem bases.
- Grassland are the most agriculturally useful habitat to humans.
- Soils tend to be deep and fertile, perfect for cropland or pastures.

Grassland Ecosystem

- These occupy a comparatively fewer area, roughly 19 percent of the earth's surface.
- The various components of grassland ecosystem are:

Abiotic components: These include the nutrients present in soil and the aerial environment.

- C, H, O, N, P, S are supplied by Carbon dioxide, water, nitrates, phosphates and sulphates.

- **Biotic components:** These may be categorized as:
- **Producers:** These are mainly grasses e.g. Cynodont species, Dicanthium species etc. Shrubs may also be present.
- **Consumers:** These occur in the following sequence:
- Primary consumers are the herbivores feeding on grasses are mainly grazing animals as cows, deer's and rabbit etc. Besides them there are insects, termites and millipedes that feed on leaves.
- **Secondary consumers:** Carnivores feeding on herbivores e.g. Fox, Snakes, frogs, Lizards etc.
- **Decomposers:** Microbes including fungi like Mucor, Aspergillus, Rhizopus etc and some bacteria and actinomycetes.

Threats:

- Continue global warming could turn current marginal grassland into Desert as rainfall pattern change
- Development of urban areas is decreasing grassland.
- Use of fertilisers, herbicides in cultivation of crops results in poor soil fertility which resulted in degradation of native grassland.
- When only one crop is grown, pests and disease can spread easily creating need for potentially toxic pesticides.

Importance

- Habitat for various plants and animals. Maintain biodiversity.
- Used as a grazing purpose area for cattle of rural community.

How to conserve

- Prevent illegal wildlife hunting.
- Prevent grassland from turning into brushland.
- Prevent grassland fires.
- Avoid overgrazing by cattles and introduce stall feeding.
- By Creating protected areas such as parks and wildlife sanctuaries.