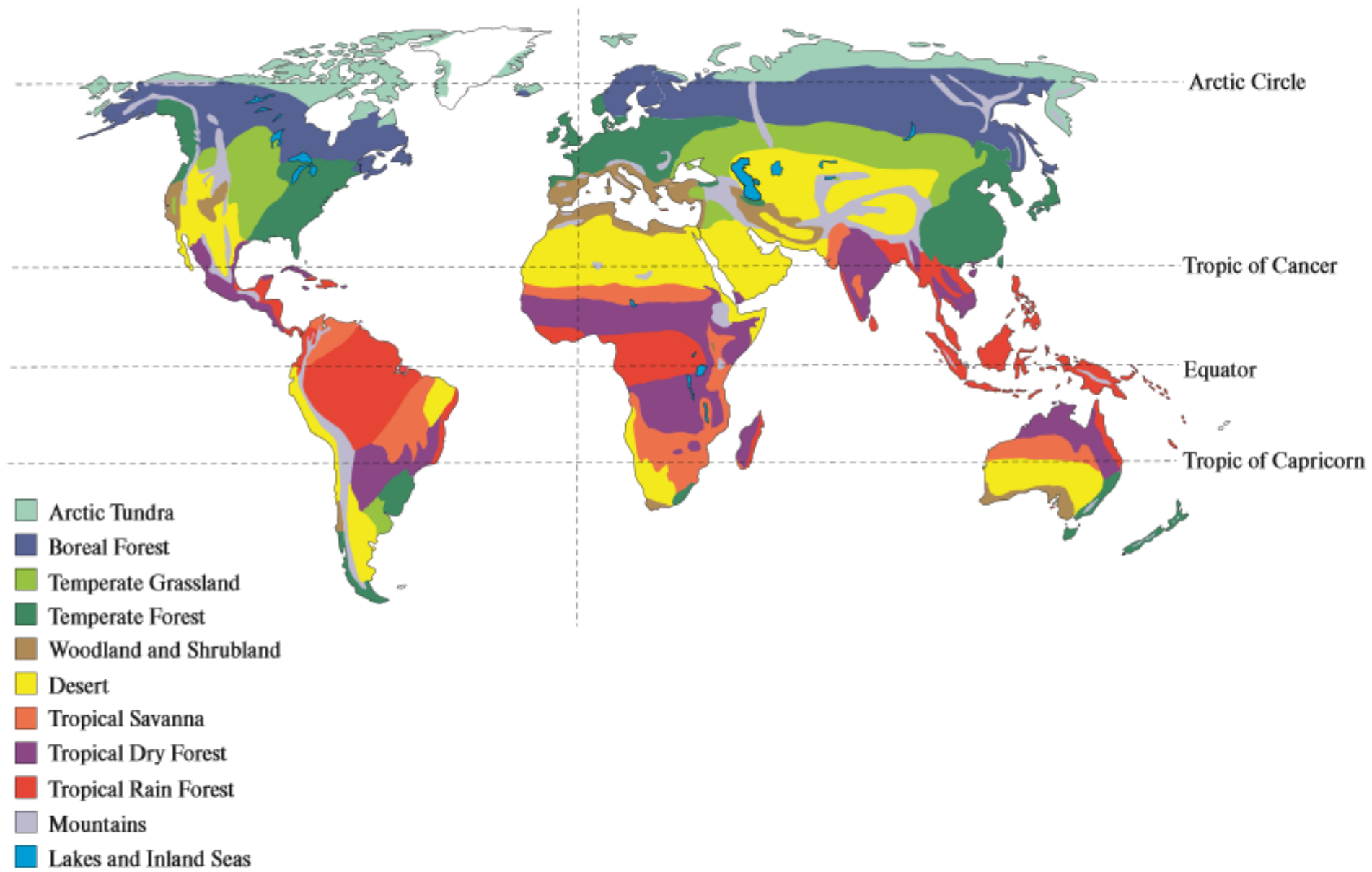


Life on Land

Terrestrial Biomes and Importance of Plants

The distribution of biomes closely related with climate.

Whether an ecosystem is dominated by cacti, grass, deciduous trees, conifers, or other types of plants will primarily depend on **temperature** and **water availability**.



(a)

How does a particular environment result in similar plants?

The dry environment will mean that regardless of which continent we are on, plants in a desert will have certain **functional traits**: particular characteristics that allow them to survive, such as waxy coatings on leaves that prevent water loss.

These functional traits of plants arise through evolution via selective pressure by the environment.

What about all of the animals, fungi, and other organisms in an ecosystem; why are biomes defined by plants?

primary producers

secondary producers

How climate changes?

- Uneven heating of the earth's surface by the sun and the tilt of the earth combine to produce predictable latitudinal and seasonal variation in climate.

Climate Diagrams

Other Factors That Shape Terrestrial Biomes

While terrestrial biome distribution is strongly associated with latitude, biomes are also influenced by microclimate and soil type.

colder at higher elevations,

whether it will be wetter or drier depends on which side of the mountain

The rain shadow effect.

Microclimates.

Soil is a complex mixture of living and nonliving material upon which most terrestrial life depends.

Though soil structure usually changes gradually with depth, soil scientists generally divide soils into several discrete horizons. In the classification system used here the soil profile is divided into O, A, B, and C horizons.

Geography of Biomes

Tropical Rain Forest

Tropical rain forest is nature's most extravagant garden.

Geography

Climate

Soils

Biology

Human Influences

Tropical Dry Forest

Life in the tropical dry forest responds to the rhythms of the annual solar cycle, which drives the oscillation between wet and dry seasons.

Geography

Climate

Soils

Biology

Human Influences

Tropical Savanna

A tropical grassland dotted with scattered trees, and your eye will be drawn to the horizon for the approach of thunderstorms or wandering herds of wildlife.

Geography

Climate

Soils

Biology

Human Influences

Desert

To understand life in the desert, the ecologist must see it from the perspective of its natural inhabitants.

Geography

Climate

Soils

Biology

Human Influences

Woodland and Shrubland

Occur widely in temperate regions. Some are found in the interior of continents and others in coastal regions.

Geography

Climate

Soils

Biology

Human Influences

Temperate Grassland

In their original state, temperate grasslands extended unbroken over vast areas.

Geography

Climate

Soils

Biology

Human Influences

Temperate Forest

Temperate forest can be found between 30° and 55° latitude.

Geography

Climate

Soils

Biology

Human Influences

Boreal Forest - Taiga

The boreal forest, or taiga, is a world of wood and water that covers over 11% of the earth's land area.

Geography

Climate

Soils

Biology

Human Influences

Tundra

Tundras are open landscape of mosses, lichens, and dwarf willows, dotted with small ponds and laced with clear streams.

Geography

Climate

Soils

Biology

Human Influences

Mountains: A Diversity of Biomes

Not a biome.

But because of the environmental changes that occur with altitude, several biomes may be found on a single mountain, depending on elevation and which side of the mountain one is on. Mountains have long offered refuge for distinctive flora and fauna and humans alike. Like oceanic islands, they offer unique insights into evolutionary and ecological processes.