

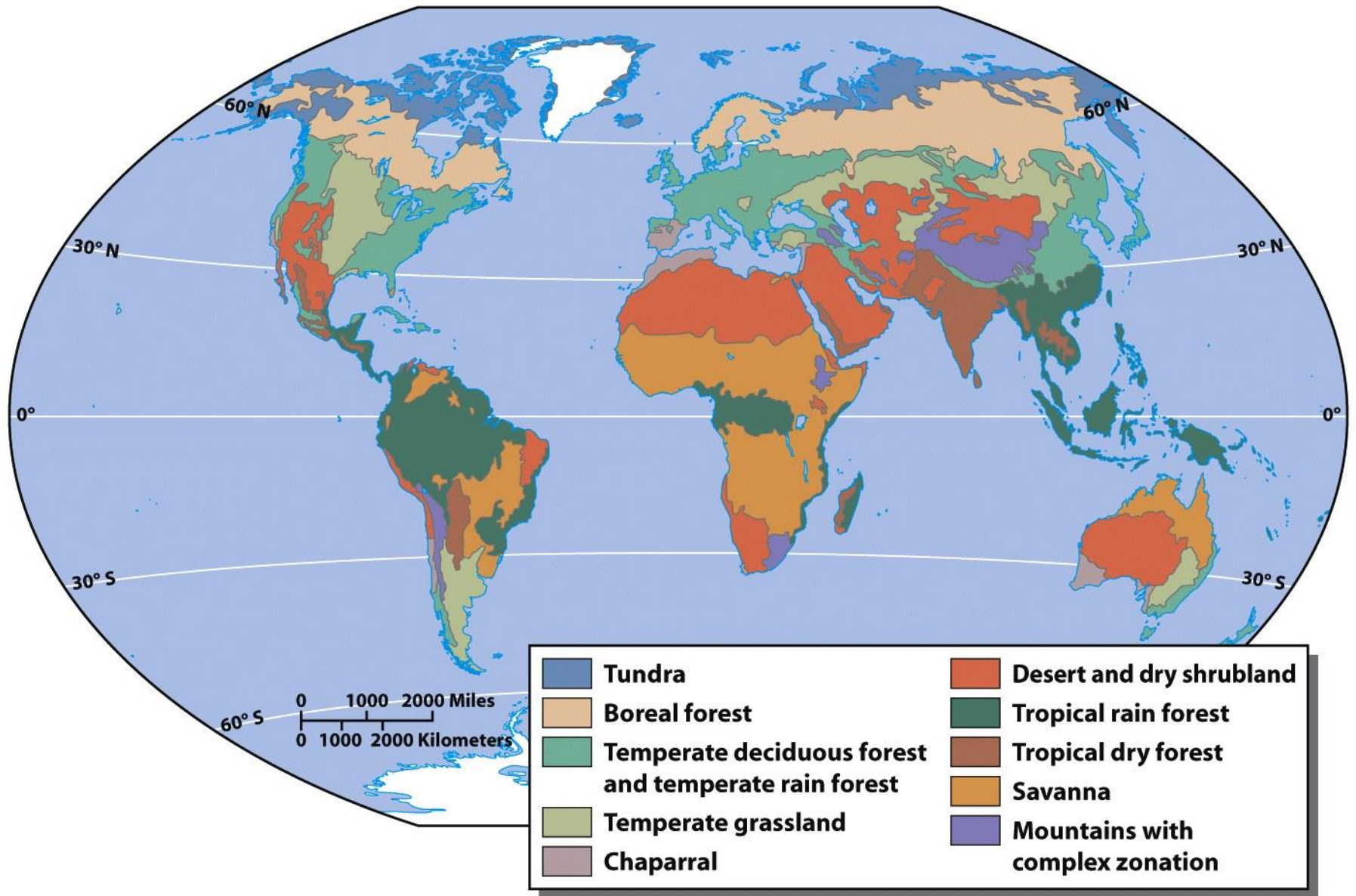
Biomes

Biomes

- Biomes are regions in the world that share similar plant structures, plant spacing, animals, climate and weather.
- Biomes are classified as either terrestrial or aquatic. Terrestrial comes from the Latin word, terrestris, from terra the earth.
- A biome is one of Earth's large ecosystems, with its own kind of climate, soil, plants, and animals.

Biomes

- Earth's Major Biomes
 - Tundra, Boreal Forests, Temperate Rainforest, Temperate Deciduous Forests, Grasslands, Deserts, Savanna, & Tropical Rainforests
- Aquatic Ecosystems
 - Freshwater ecosystems
 - Estuaries
- Marine Ecosystems



1. Tundra



Tundra

- Treeless biome in the far north with harsh, cold winters and extremely short summers
- Precipitation, 10-25 cm/yr
- Temperature, Short growing season, 50-160 days
- Nutrient poor soils with little organic material
- Low species richness
 - Veg is mostly grasses and sedges
 - Very simple food web
- Low primary productivity

2. Boreal Forests

- A region of coniferous forests in the northern hemisphere Just south of tundra
- Covers 11% of earth's land
- Growing Season, A little longer than tundra
- Precipitation, 50 cm/yr
- Soils are acidic and mineral poor
- Vegetation comprised of drought resistant conifers
- Mostly small animals and migrating birds
- Some large animals are present

Boreal Forests

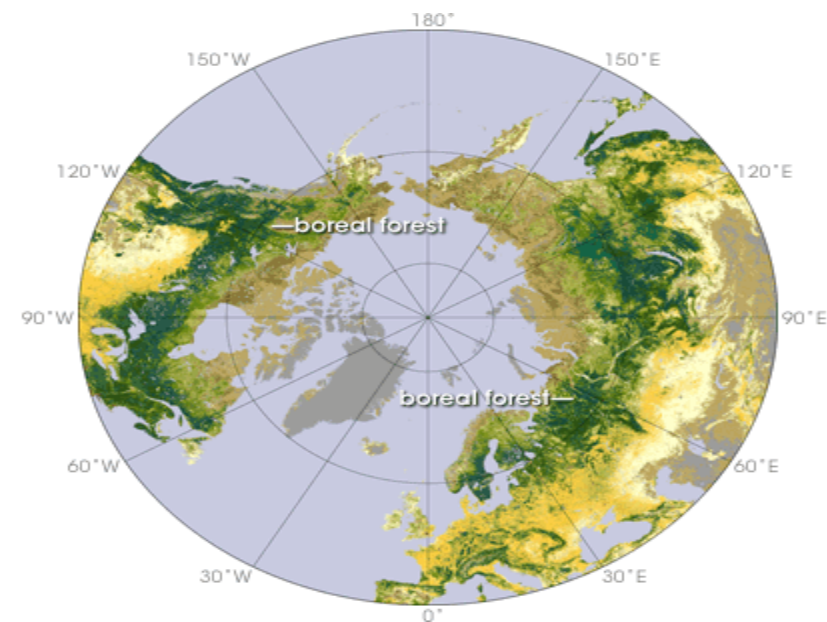
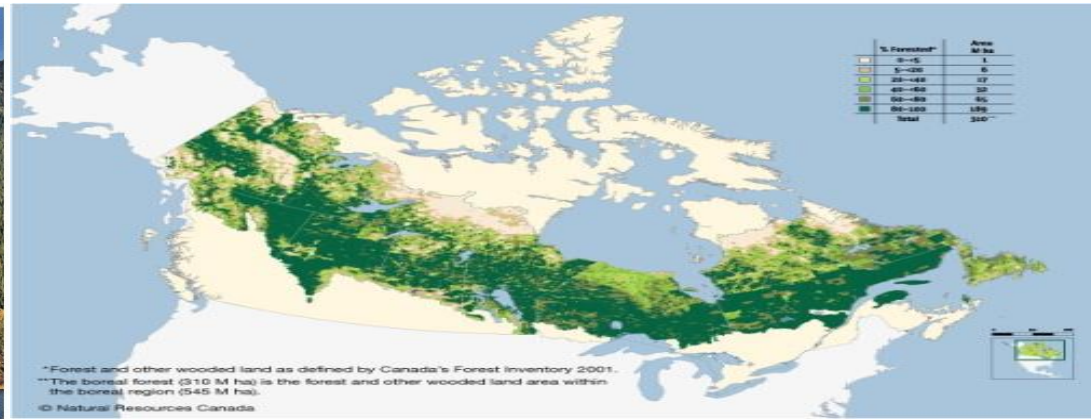
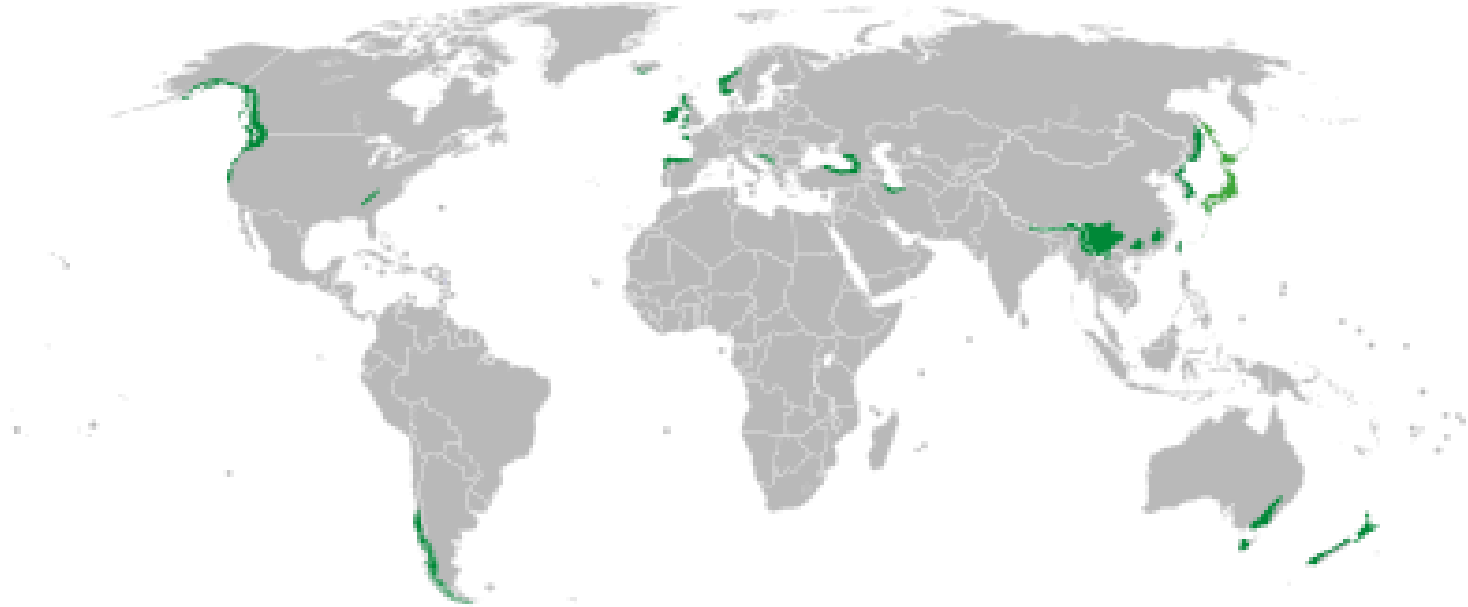


Photo: Z. V. Lozhkin

3. Temperate Rainforest



Temperate Rainforest

- Coniferous biome with cool weather, dense fog and high precipitation
- Precipitation, 127 cm/yr, Heaviest in winter
- Temperature, Winters are mild, Summers cool
- Soils are nutrient-poor, but high in organic material
- Variety of cool climate animal life
- Very high species richness
- Heavily logged

4. Temperature Deciduous Forests



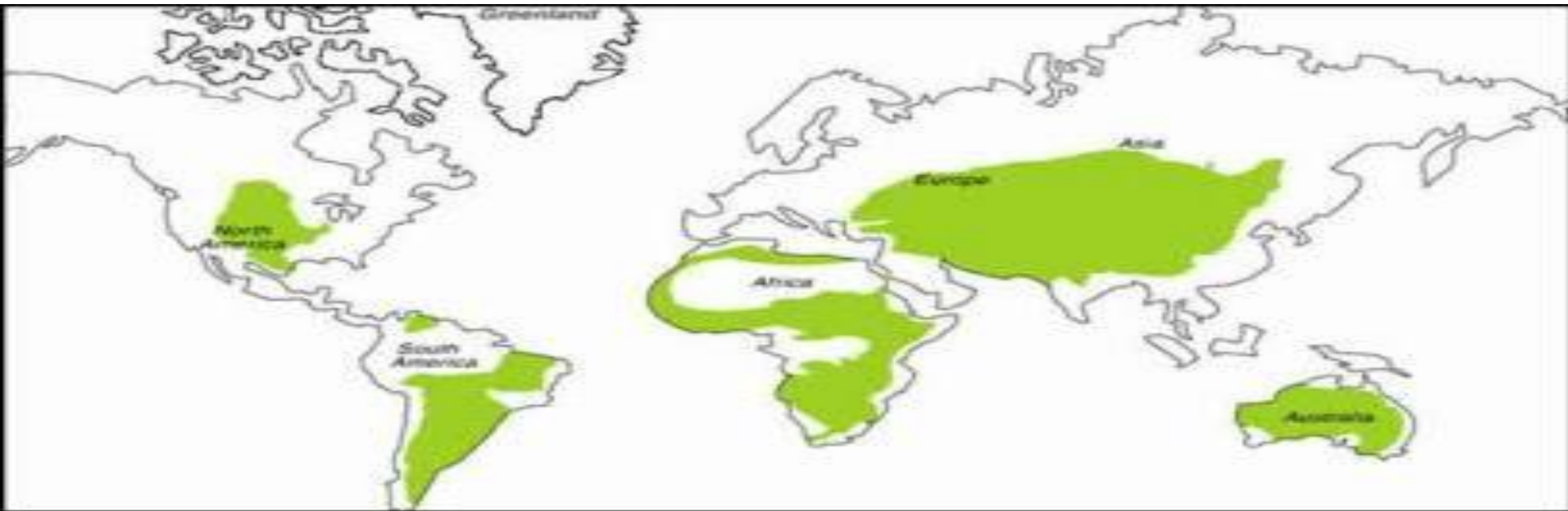
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Temperature Deciduous Forests

- Forest biome that occurs in temperate areas with a moderate amount of precipitation
- Precipitation, 75-150 cm/yr
- Temperature, Seasonality (Hot summers and cold winter)
- Topsoil is rich in organic material and underlain by clay
- Vegetation is primarily deciduous
 - Oak, maple, beech
- Animals
 - Deer, bear and small animals
- Most of this biome land area has been regenerated after farming & timber harvest

5. Grassland



Grassland

- Grasslands with hot summers, cold winters and too little precipitation to support trees
- Precipitation, 25-75 cm/yr
- Tall grass prairies
- Short grass prairies
- 90% of this biome has been lost to farmland
- Soil has thick, organic material
 - rich organic horizon.
- Periodic fires keep the dominant vegetation grasses
- Animals

6.Deserts



Deserts

- Biome where lack of precipitation limits plant growth
- Temperature can vary greatly in 24-hr period, as well as yearly (based on location)
- Precipitation (25 cm/yr)
- Soils low in nutrients, high in salts
- Vegetation sparse
 - cactus and sagebrush
- Animals are very small to regulate temperature

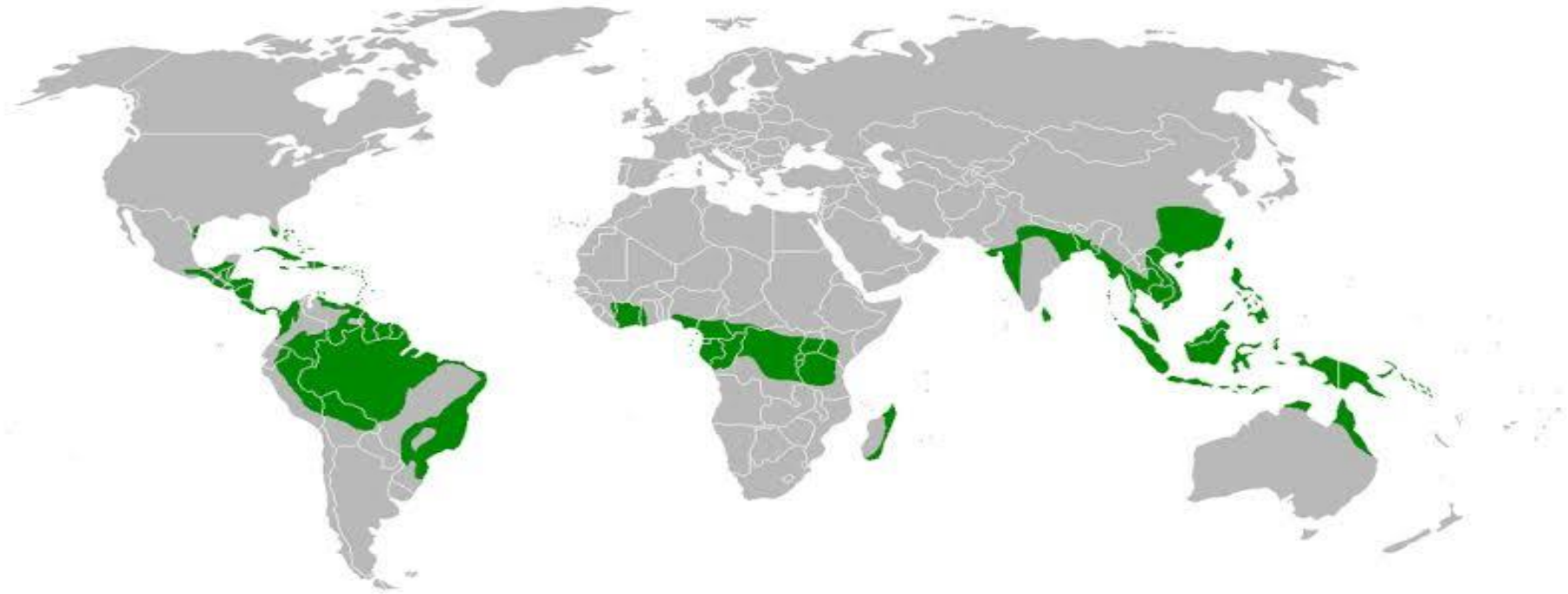
7.Savanna



Savanna

- Tropical grassland with widely scattered trees
- Temperature (Varies little throughout the year)
- Precipitation (Seasons regulated by precipitation, not temperature) 76-150 cm/yr
- Soil low in nutrients due to leaching
- Vegetation
 - Wide expanses of grass
 - Occasional Acacia trees
- Animals
 - Herds of hoofed animals
 - Large predators- lions, hyenas, etc.

8. Tropical Rainforest



Tropical Rainforest

- Lush, species-rich biome that occurs where climate is warm and moist throughout the year
- Precipitation (200-450 cm/yr)
- Very productive biome
- Most species-rich biome
- Ancient, weathered, nutrient-poor soil
 - Nutrients tied up in vegetation, not soil
- Vegetation
 - 3 distinct canopy layers
- Animals
 - Most abundant insect, reptiles and amphibians on earth

Aquatic Ecosystem

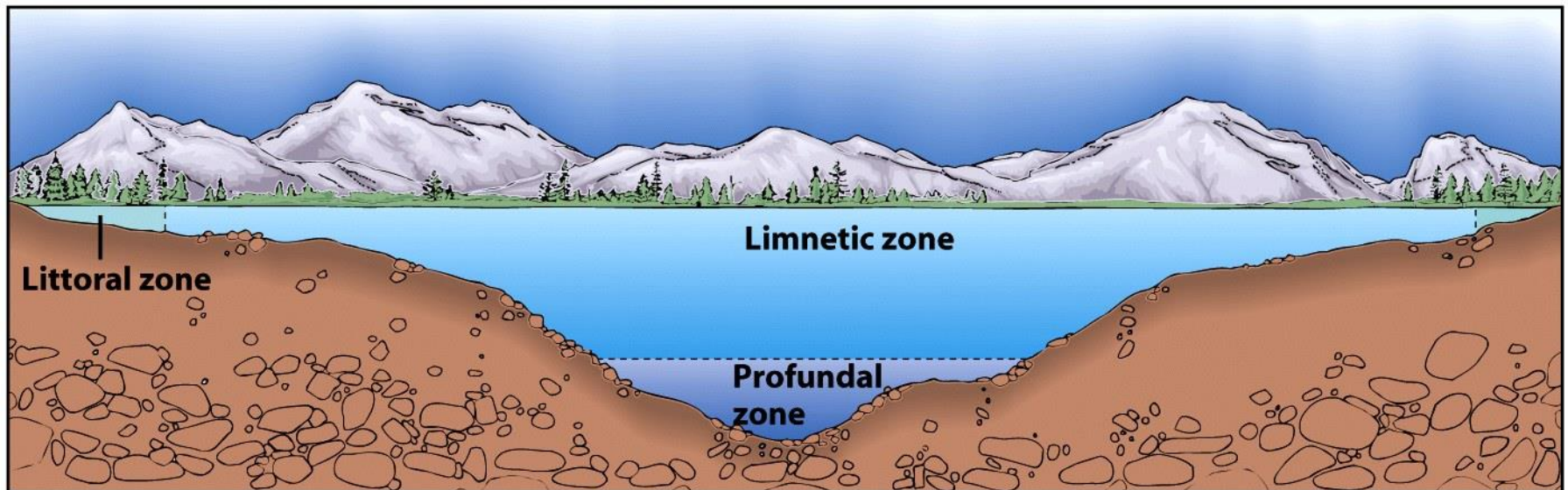
- Fundamental Division
 - Freshwater
 - Saltwater
- Aquatic Ecosystems also affected by
 - Dissolved oxygen level, light penetration, pH, presence/absence of currents

Freshwater Ecosystems

- Includes:
 - Rivers and streams
 - Lakes and ponds
 - Marshes and swamps
- Represent 2% of earth's surface
- Assist in recycling water back to the oceans (Biogeochemical Cycling)

Lakes and Ponds

- **Littoral Zone** - shallow water area along the shore
- **Limnetic Zone** - open water beyond the littoral zone
- **Profundal Zone** - beneath the limnetic zone of deep lakes

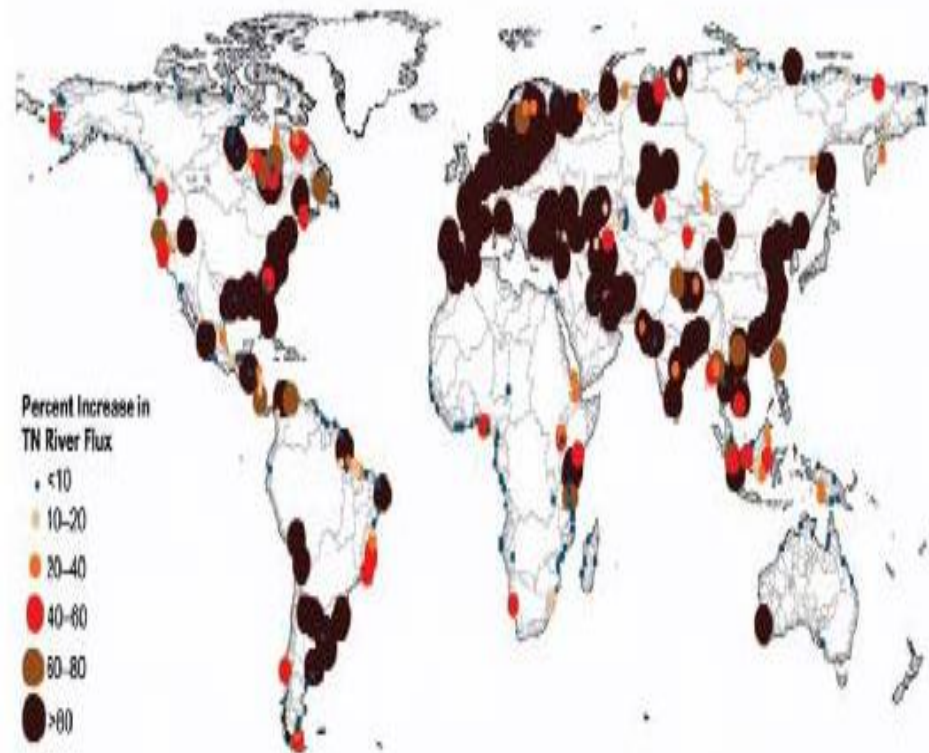


Estuaries

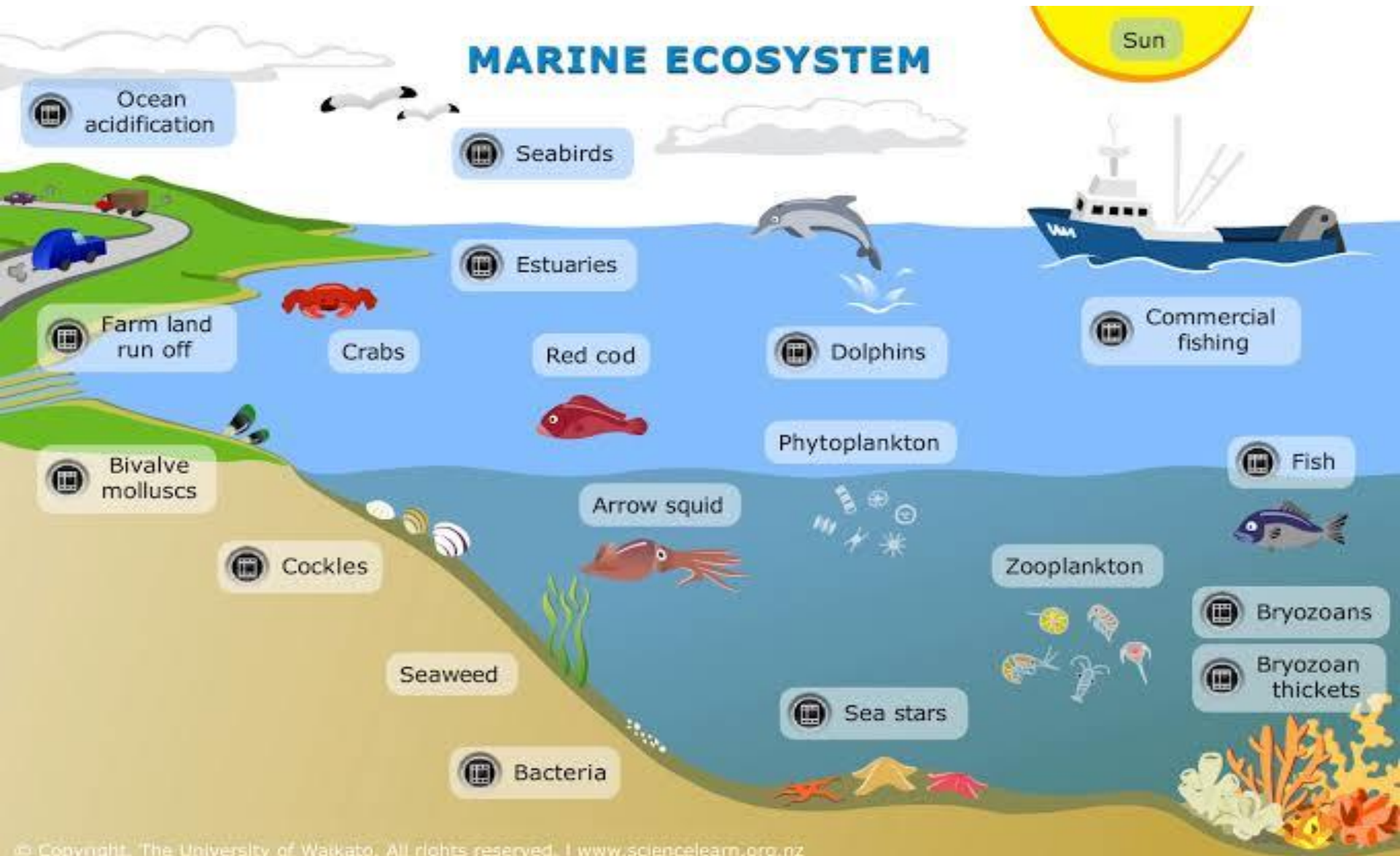
- Where freshwater and saltwater mix
- Highly variable environment



The World's Most Serious Dead Zones



Marine Ecosystems



Thank

you

