**Chart of Terrestrial Biome Characteristics**

**The exact flora and fauna of each biome is dependent upon which continent the biome is found.**

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| **Biome** | **Precipitation** | **Temperature** | **Decomposition** | **Soils** | **Representative**  **Flora/Adaptations** | **Agriculture** |
| **Rainforests**  **Oxisol: At all depths, no more than 10% weatherable minerals & low cation exchange capacity.** | Ample  200-300 cm, very foggy, leaf drip from fog condensing on needles provides much precip. | Mild winter, cool summers  8-20oC | Rapid decomposition means that little organic material collects. | Old, thin, acidic nutrient poor because most nutrients are in the biomass; soil may harden to concretelike consistency – laterite soil (*rusty red color due to high concentration of iron oxides (Fe & Al) from chemical weathering of underlying parent rock)*  Thin in nutrient minerals but have ample precipitation.  A: rich in nhumus from rapidly decaying plant parts.  B: thick, heavily leached due to precipitation, acidic, nutrient poor | Broadleaf evergreen trees; diverse species throughout forest; emergent layer of tall trees with a thick layer of canopy trees below. Trees may have buttresses (expanded bases) due to massive size and shallow roots; epiphytes (bromeliads, orchids); if thick canopy there is little to no plant life beneath. | Little agriculture because most organic material is locked in the plants. As soon as they die, they are rapidly decomposed and new plants absorb the materials – rapid decomposition due to termites. |
| **Temperate Deciduous Forest**  **Alfisols: clay, enriched subsoil, high fertility, lots of aluminum and iron, widely used in agriculture in forestry.** | 75-150 cm, even amounts throughout all seasons; typically washes out clay and nutrient minerals | 0-20oC | High due to temperatures and precipitation – due to high precipitation many nutrients leach into other layers | High nutrients due to deciduous trees, lots of humus and leaf litter  O and E – lose nutrients due to wash out  B: nutrient rich  Soil nutrients are provided by constant supply of plant litter like leaves and twigs |  | Often cleared for farmland – fertilizers must be used to maintain fertility. |
| **Boreal Forest** (taiga, northern coniferous forest)  **Spodosol: sandy, poor for farming, low in moisture and nutrients** | Ample precipitation, typically drain well | Cold | Low | O: primary needle leaves that are acidic  E: acidic  B: dark brown | Low plant diversity, primarily conifers such as pines, hemlocks, spruce, cedar, fir; some deciduous, like maples, aspen, birch; slow growing season | Poor |
| **Biome** | **Precipitation** | **Temperature** | **Decomposition** | **Soils** | **Representative Flora/Adaptations** |  |
| **Temperate Grassland**  (In US called: prairie)  **Mollisols: deep, high in organic matter & nutrients. Deep A horizon** | 25-100 cm  Fire maintained | High | Moderate to high  May require periodic fires to help restore nutrients | Extremely nutrient rich, lots of humus-partially decomposed organic matter that holds in water and nutrients in soil, arises from grasses dying and decaying in winter  Low in minerals, easily leached, may have high levels of Aluminum. Edaphic (*Living organisms are influenced mainly by the soil, not by climate)*  A: thick dark brown layer rich in hummus. Precipitation is not great enough to wash nutrients into lower layers | Deep roots; thick bark; Small, leathery, waxy leaves (sclerophyllous); Evergreen; Allelopathy; seeds require burning | Contain much of the world cropland ; require deep rooted grasses to help with soil formation |
| **Deserts**  **Aridisol: very low in organic matter, water deficient.** | Low | Depends on location, deserts usually at 30oN or 30oS of equator or interior of continents due to rain shadow effect  -5 to 30oC | Little due to lack of precipitation | Little leaching of nutrients due to lack of precipitation.  Little organic layer due to lack of vegetation  Don’t have soil layers  A layer: salty | Little precipitation also means that little vegetation develops, | Rangeland for grazing and crop growth only if supplied by irrigation |