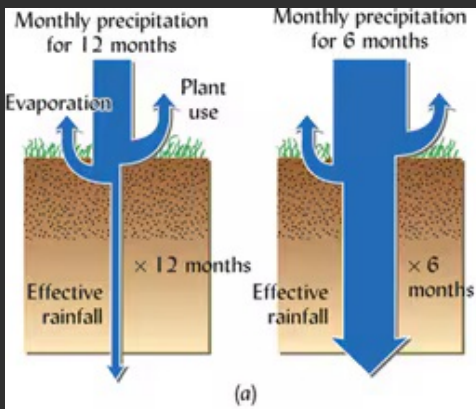
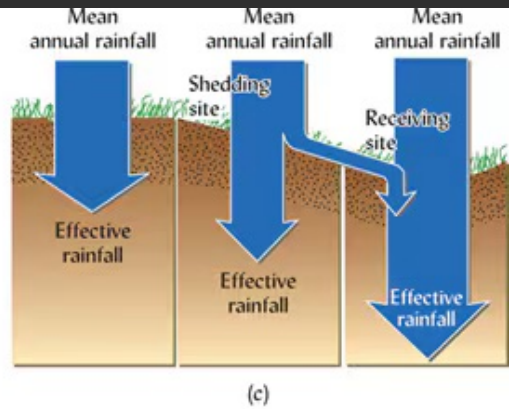


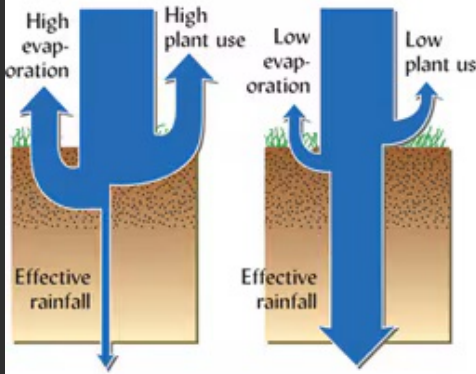
Climate \rightarrow H_2O
 \rightarrow Temp
 \rightarrow Evapotranspiration
 and precipitation



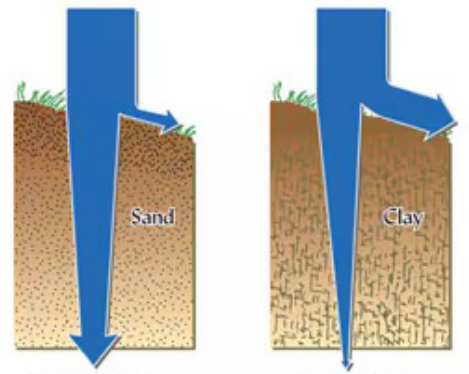
(a)



(c)



(b)



(d)

\rightarrow Effective Precip
 \rightarrow Seasonality of precip

\rightarrow Topography \times Climate

↑ Effective rainfall; increase weathering.

Why? How?

1. ↑ Water = more physical weathering

2. ↑ Water = more chemical weathering

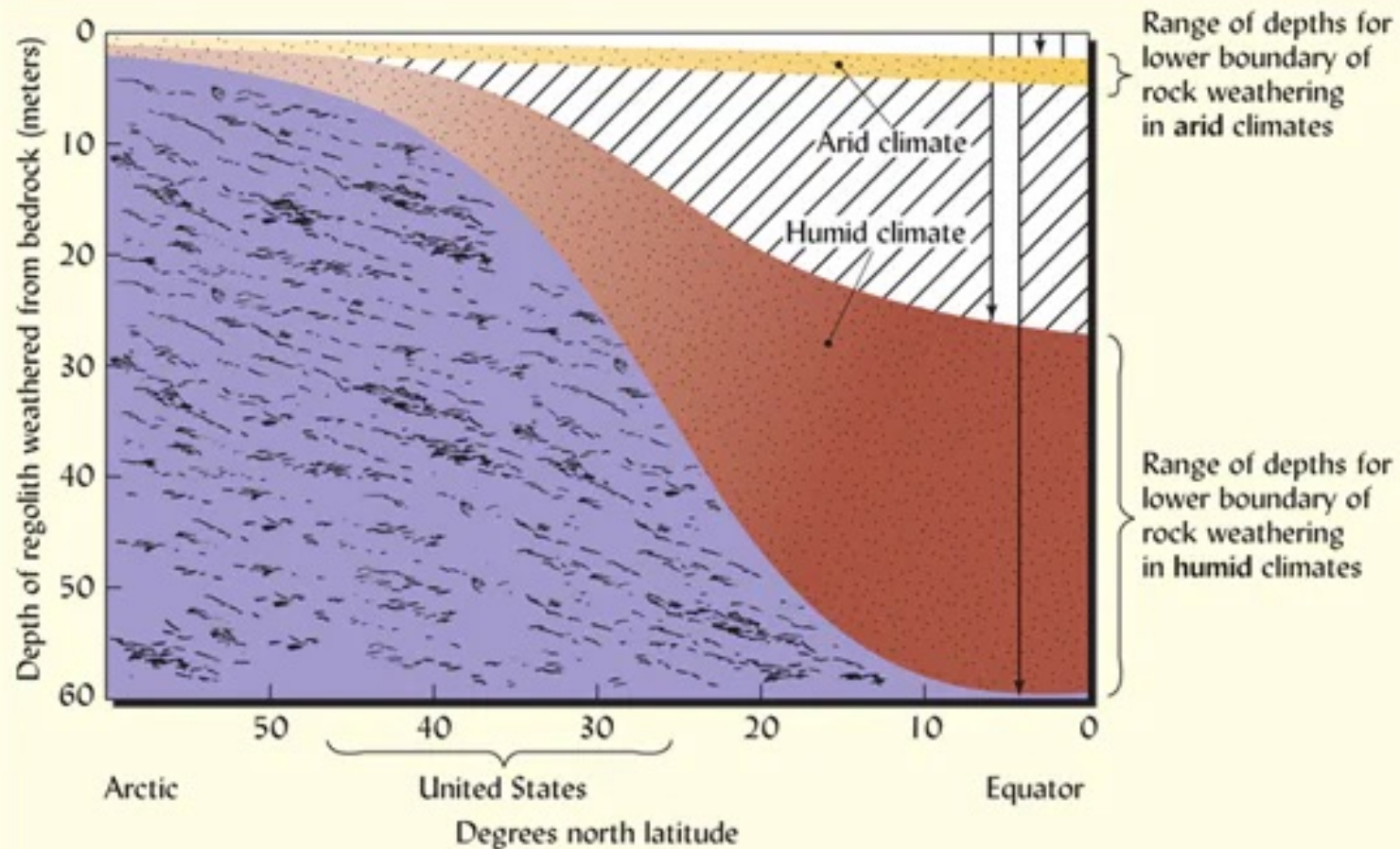
↳ ↑ Clay compounds

Sand

Silt

clay





Mud flats

→ Sequoia

and

→ Palm Forests

Roots alter

soils too

→ Organic

Matter accumulation

→ Complexation

→ Aggregates

Dark color

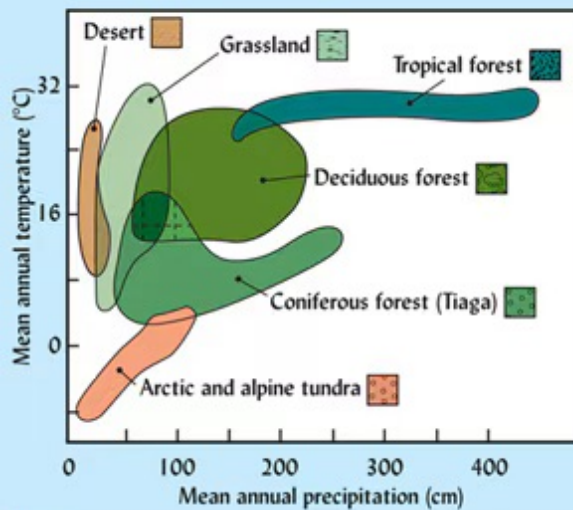
↑
↑
Nacimiento

66 MYA



-  Tundra
-  Tiaga
-  Alpine Forest
-  Temperate Rain Forest
-  Northern Mixed Forest
-  Temperate Deciduous Forest
-  Costal Plain Mixed Evergreen
-  Tropical Montane Forest
-  Tropical Rain Forest
-  Temperate Grasslands
-  Tropical Grasslands
-  Cool Desert
-  Hot Desert
-  Mediterranean Scrub

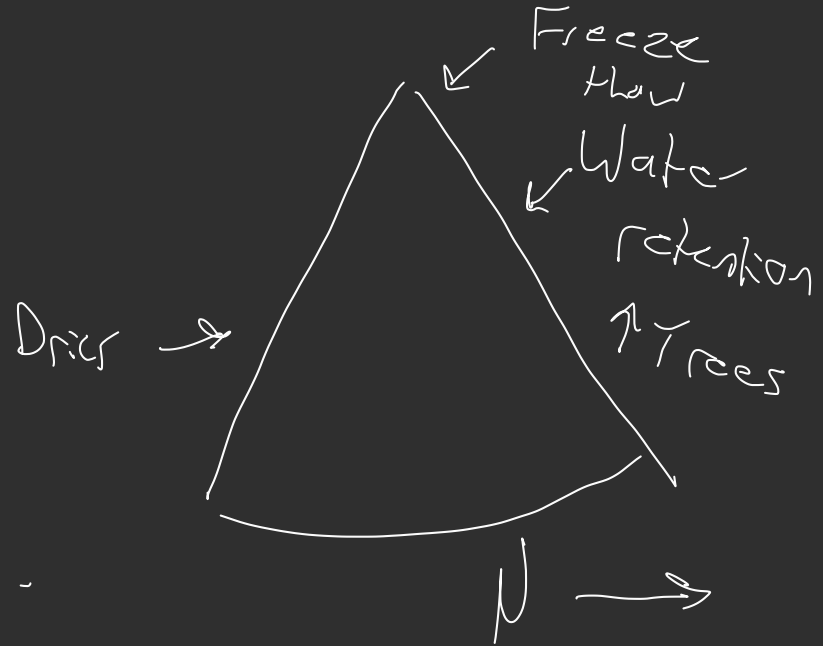
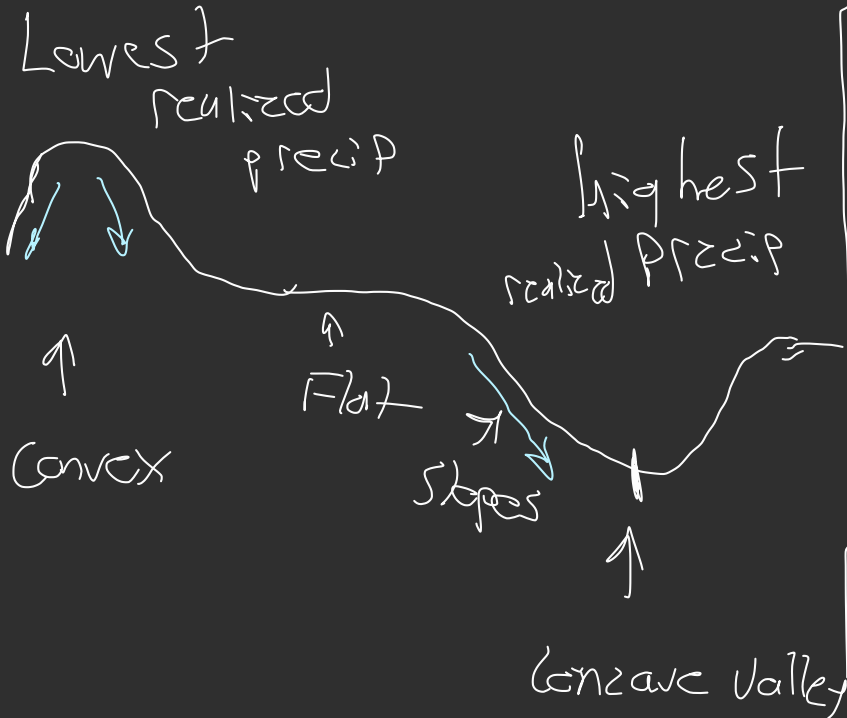
(a)



(b)

Topography

→ Exacerbate or reduce climate effects



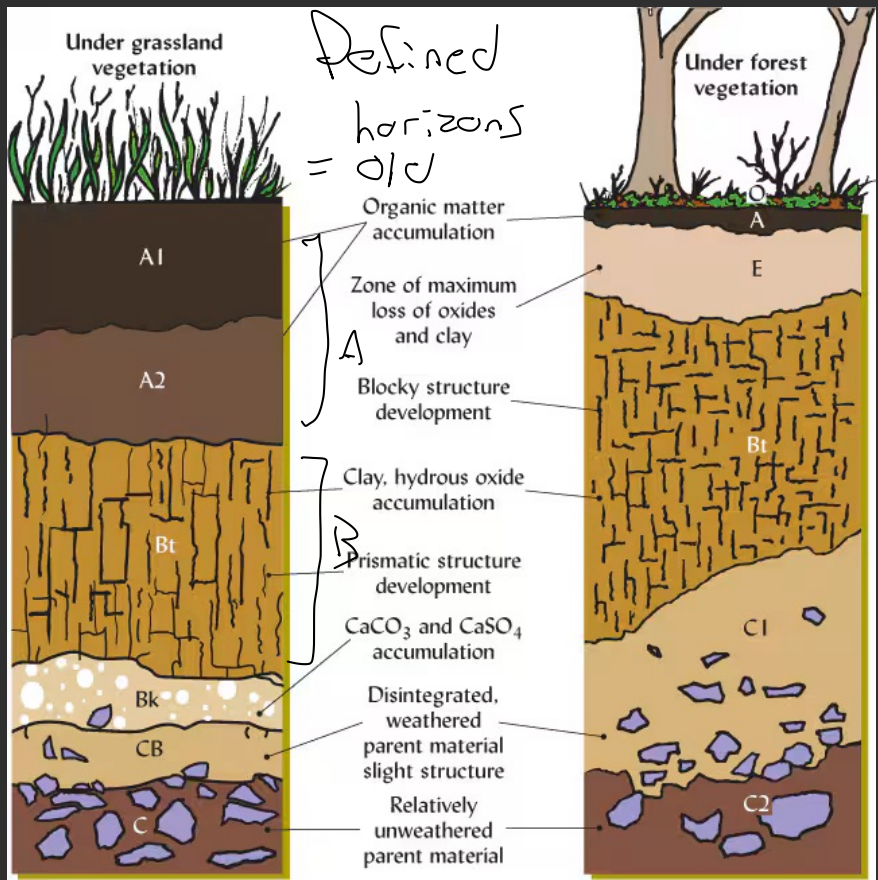
Time

$$(0) 0.001 \text{ m/yr} = 0.1 \text{ mm/yr}$$

young = degree of weathering

old soils
can form
in 50 - 70 years

but 1,000s - 10,000s years



Soil Formation = Pedogenesis

→ Additions, losses, translocations



Islands of Soil

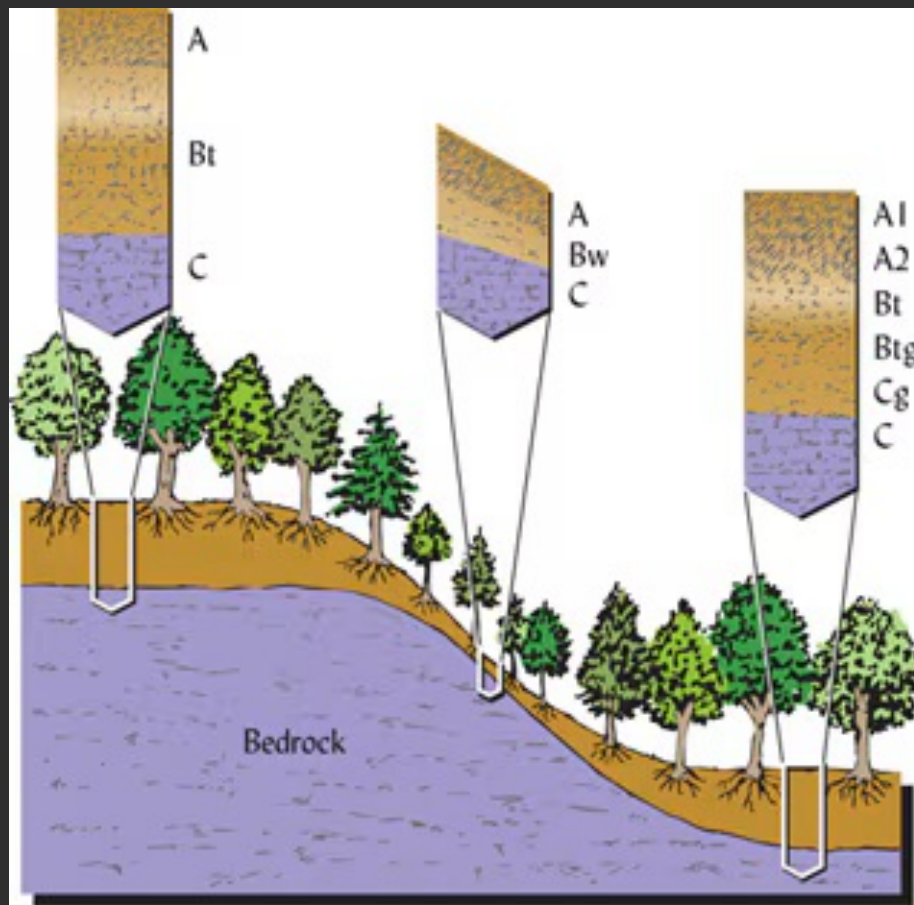
Additions
of OM





↗ Regolith

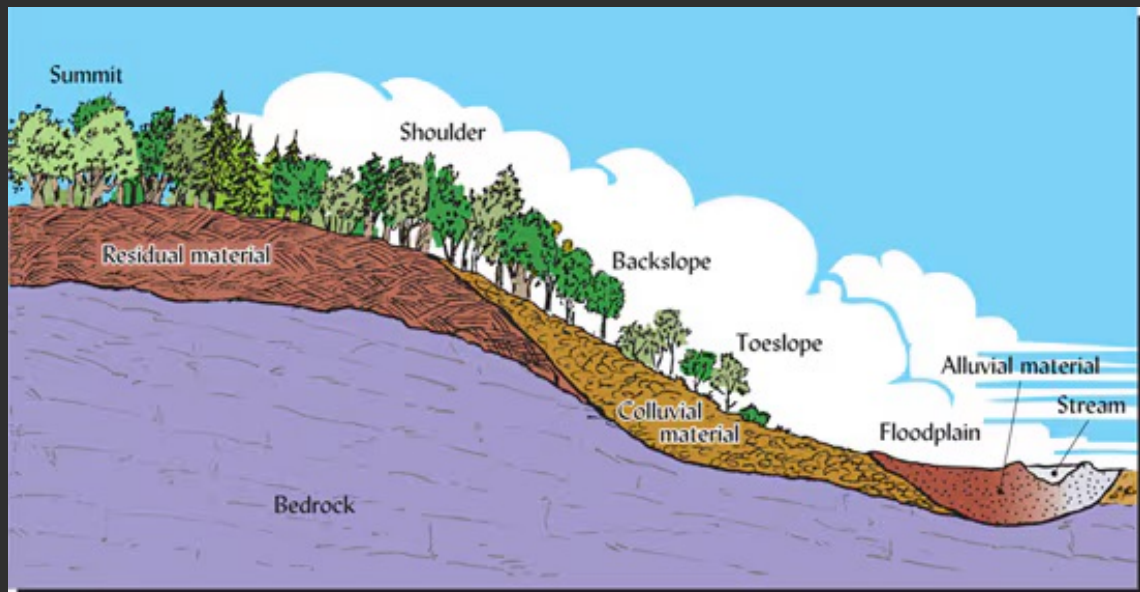
Translocating low soil to surface





Orogeny





The formation of soil horizons

O = Organic horizon
Formed by O matter

A Accumulation zone
- Dark colors

E Eluviation (leaching)
- Light colors

B Illuvial zone
- light color

C Unconsolidated material; both PM

R = in-situ and inputs from above

