

Soil

Chapter 10

Lithosphere

- Earth's crust and upper mantle (asthenosphere)
- Crust is continental or oceanic
- isostasy

Plate Tectonics

- Divergent: (sea floor spreading)
- Convergent: subduction
- Transform faults

Geologic processes on surface

- Weathering: processes by which parent material (rock) loosens or wears
- Weathering: mechanical or chemical
- Erosion: process that causes parent material to wear and move, or be deposited elsewhere

Rocks and Minerals

- Minerals: bauxite (aluminum), diamonds
- Minerals are solid elements or inorganic compounds that are naturally occurring
- Rocks: sedimentary, metamorphic, igneous
- Rock: any material that makes up a large, natural, continuous part of earth's crust (may have many mineral components)

Parent Material

- Rocks make soil through weathering
- Has to be exposed at surface by some means
- Parent material determines characteristics of the soil

Soil Horizons

- Zones of soil each w own texture and composition
- Soil profile: cross section of soil horizons
- Got a long soil probe? Or dig hole.

Soil Horizons: O to B

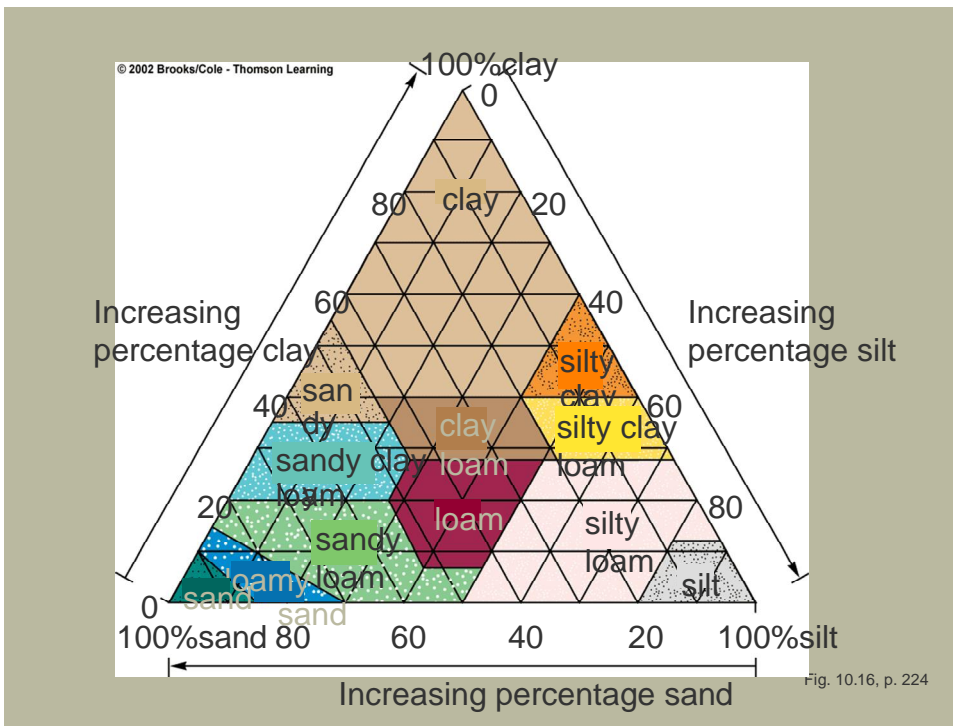
- O horizon: surface litter layer
- A horizon: topsoil layer humus and inorganic mineral particles
- B horizon: subsoil mostly inorganic broken parent material
- C horizon: parent material not broken too much but not consolidated
- R: Bedrock

Chroma

- Dark brown or black: nitrogen rich high in organic material good for crops
- Gray, bright yellow, or red topsoils low in organic matter need nitrogen
- Grey, blue, gleyed may have many nutrients but don't share much
- 1s are wetland soils, mottled soils 2 or less are also wetland soils

Texture/ porosity

- Clay: sticky
- Silt: smooth
- Sand: gritty
- Gravel
- LOAMS: soil w rough equal mixture clay, sand, silt, and humus



Texture	Nutrient	Water Infill	Water hold	Aeration	Workability
Clay	Good	Poor	Good	Poor	Poor
Silt	Medium	Medium	Medium	Medium	Medium
Sand	Poor	Good	Poor	Good	Good
Loam	Medium	Medium	Medium	Medium	Medium

Which characteristics are good for agriculture?
 How does agriculture affect soil?

