Week 3, soil classification and taxonomy

**Wednesday lecture:**

Order -> suborder -> great group -> subgroup -> family -> series

Genetic horizon: label applied in field based on observation. Diagnostic horizon: label based on lab data on texture and chemistry.

Entisol: little or no evidence of development of horizons.

Inceptisols: some horizon development but still has primary minerals

Gelisols: permafrost imbedded into soil, freeze-thaw features

Histosols: soil dominated by organic matter (moors, bogs, mucks)

Andisol: contains unique amorphous minerals, formed from volcanic ash

Aridisol: limited availability of soil moisture, exhibits relocation of soil salts and carbonates

Vertisol: high content of shrink-swell clay. High fertility, dry-wet. Large cracks often develop

Mollisol: rich in calcium, magnesium, sodium, potassium. Dark, soft thick , high fertility

Alfisol: similar to mollisol but more weathered and not quite as fertile. Often under deciduous forest

Spodosol: intensive organic acid leaching, often under coniferous forests. Cool, wet, sandy.

Ultisol: Has been strongly leached, low native fertility, older stable landscapes in warm wet climates.

Oxisol: extremely low fertility, nutrients mostly held in the standing vegetation. Highest weathered

**Friday lecture:**

Sand - .05 to 2 mm feels gritty

Silt - .05 - .002 mm feels smooth

Clay - <.002 mm extremely small, feels sticky

Clay has 10,000 times as much surface area as same mass of sand, high surface area means greater ability to hold water and nutrients.

Stable aggregates are important to good soil management. Stable aggregates do not break down when wetted.

Clay is more porous than sand. Sand drains water more quickly than clay. Porous != draining power.