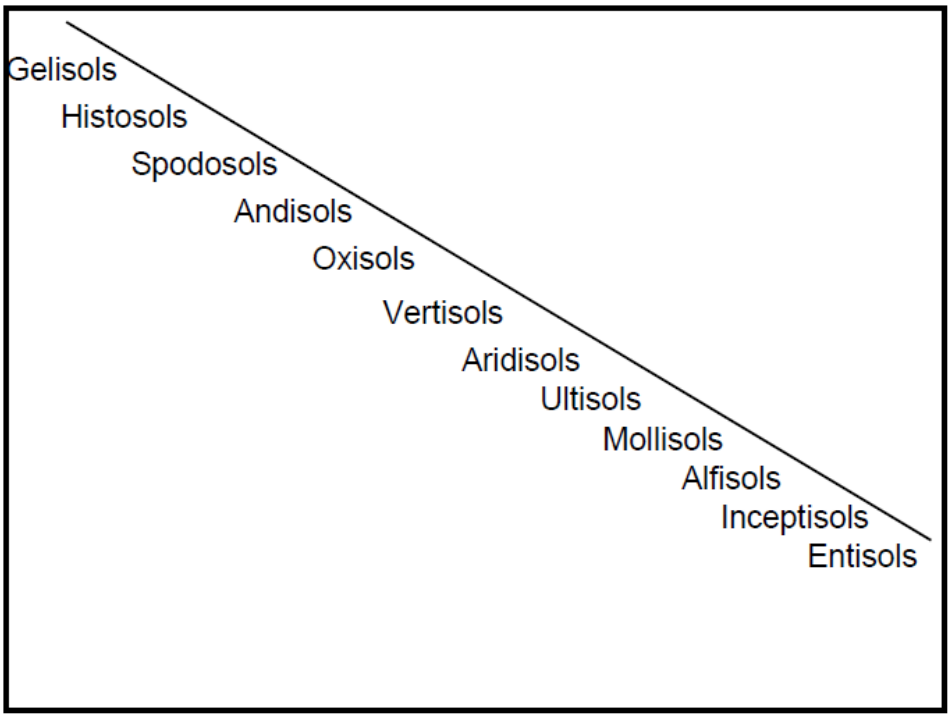
Soil Orders:

Start at the top – Gelisols, if soils do not meet the properties of a Gelisol, move on to the next order Histosols, etc.

Entisols – soils without subsurface diagnostic horizon – "all other soils".

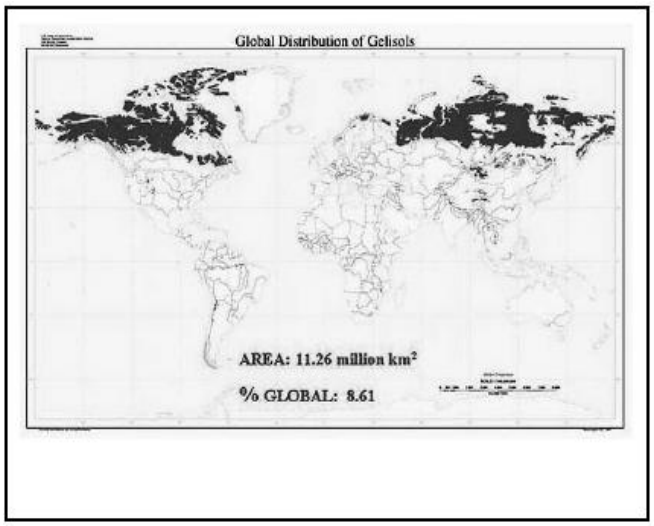


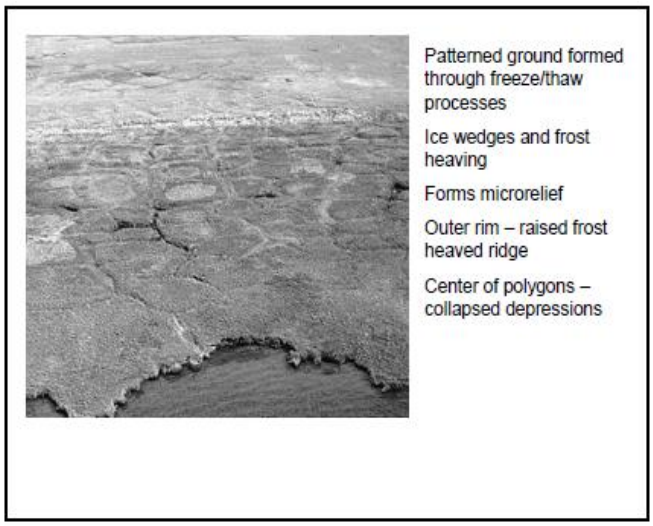
Gelisols:

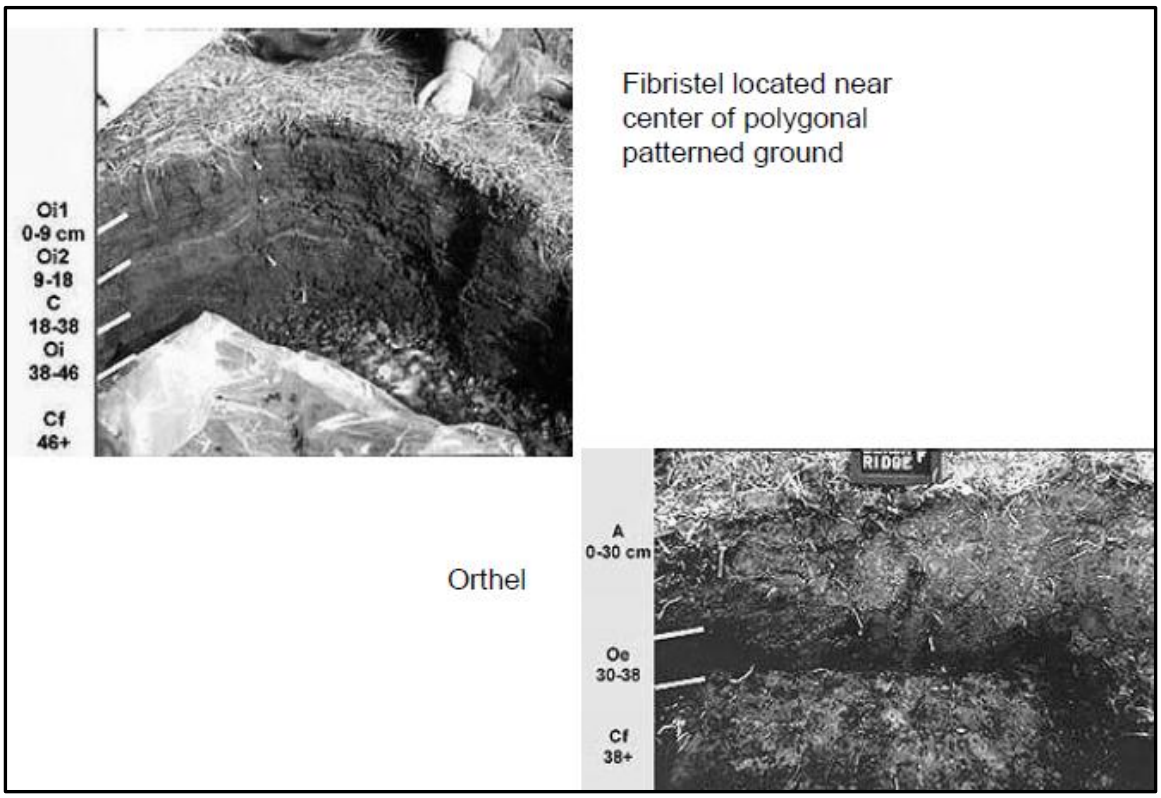
- Greek gelid – "very cold".
- Soils with permafrost (within 2 m of surface) and gelic materials.
- Gelic materials

  Mineral or organic soil materials that show evidence of cryoturbation.
- Active layer
  - Seasonal thaw layer.
  - Freeze/thaw on an annual basis.

- Global distribution: Area – 11.26 million Km^2 (% 8.61)

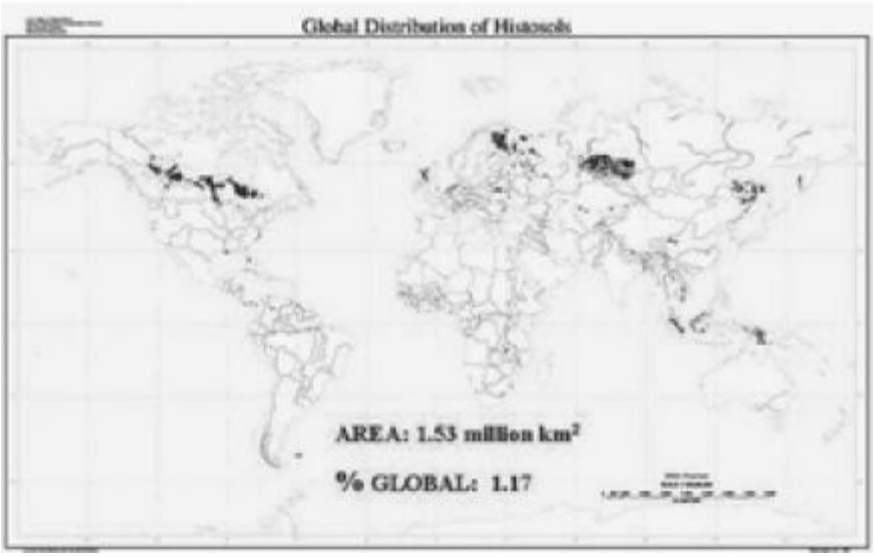


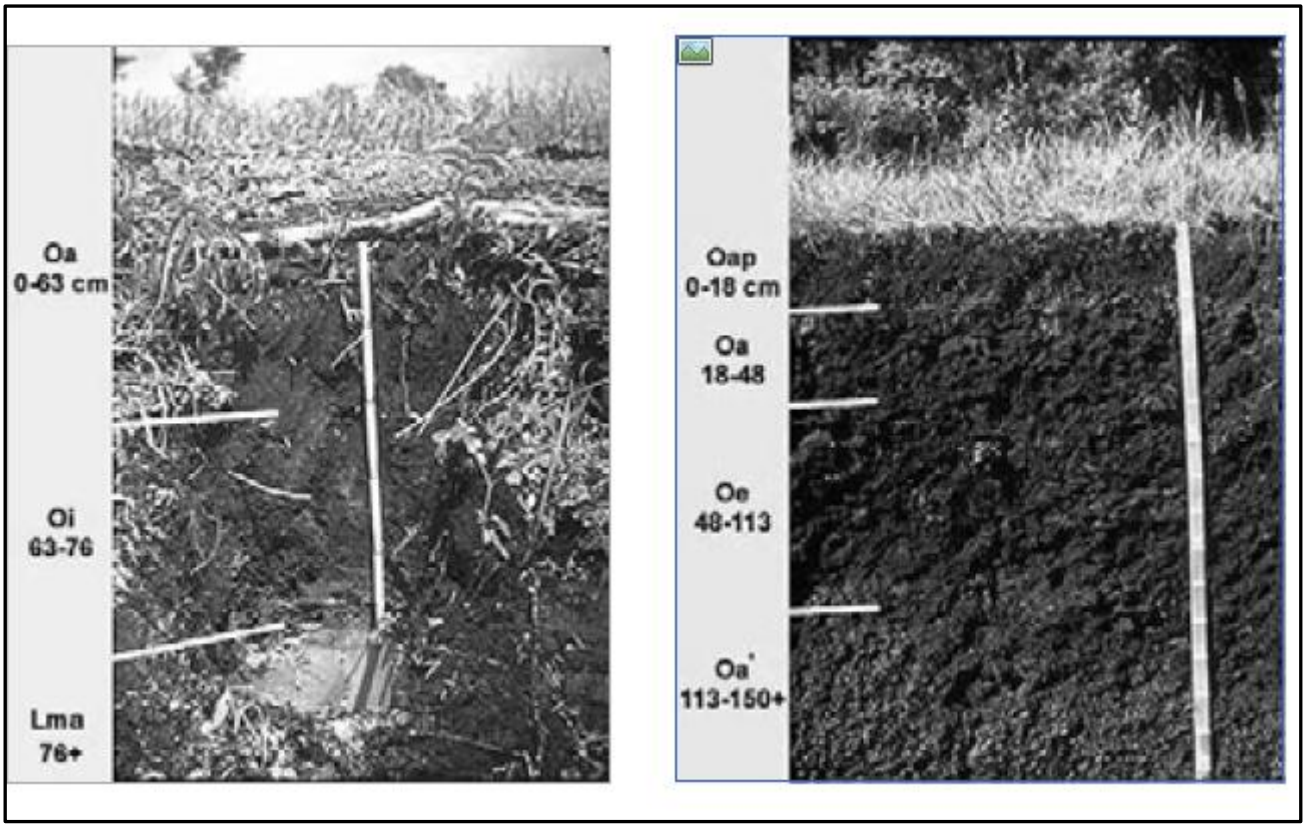




Histosols:

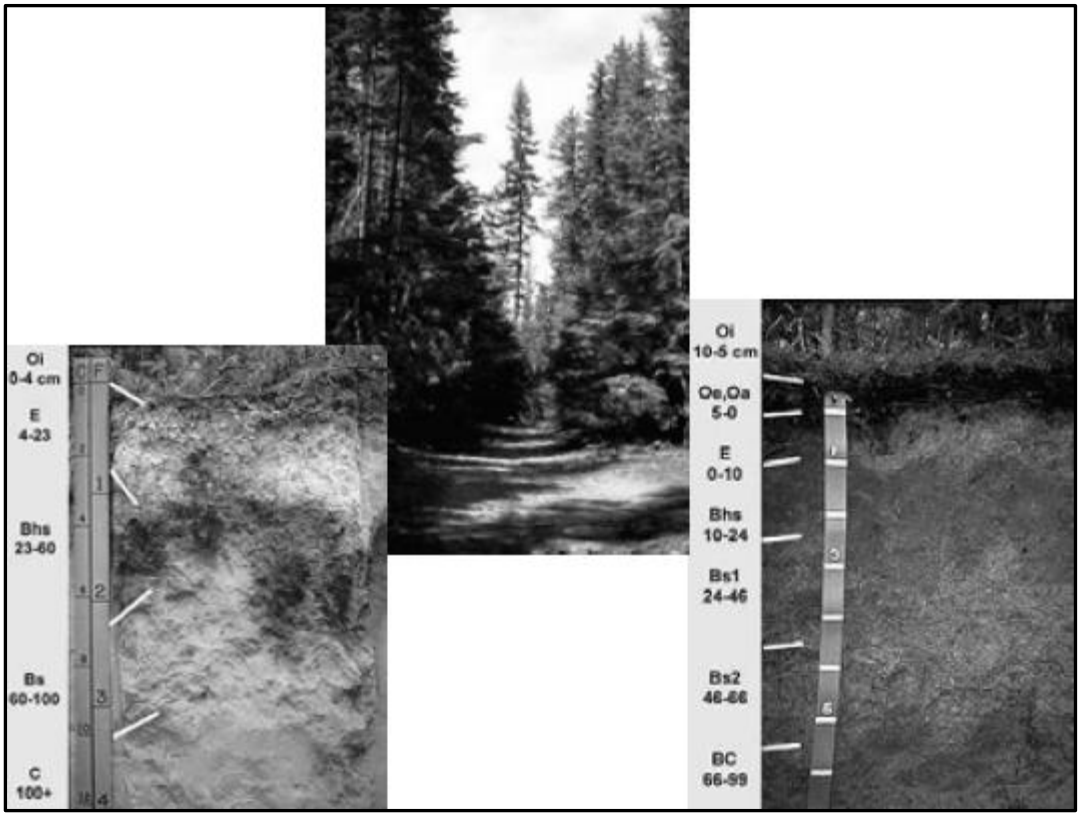
- Greek histos – "tissue"
- Soils composed mainly of organic soil materials (OSM) - do not have permafrost.
- OSM – saturated > 30 days and contain at least 12-18% OC depending on clay content.
- Global distribution: Area – 1.53 million Km^2 (% 1.17)





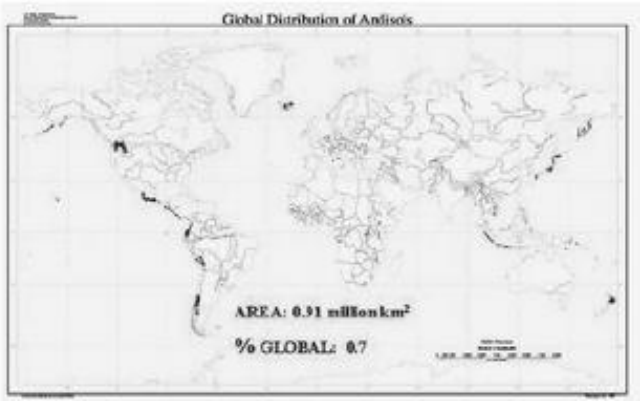
Spodosols:

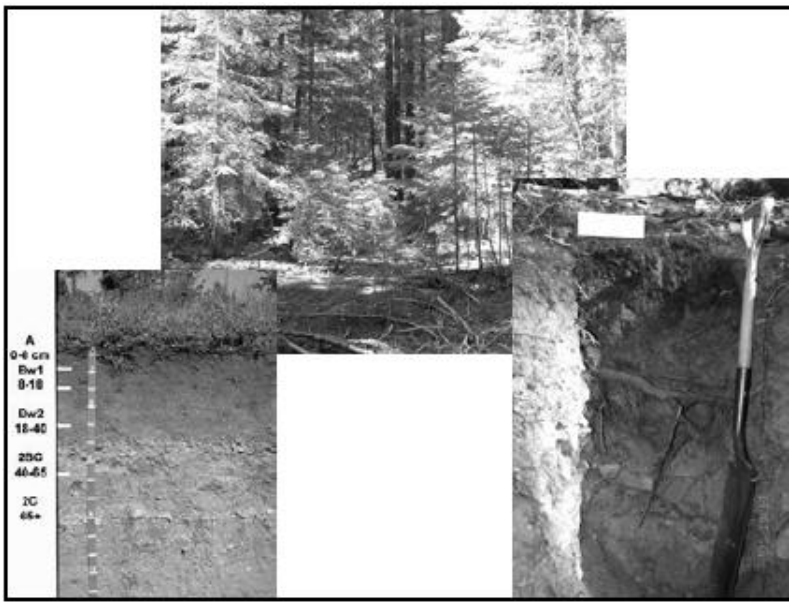
- Acid forest soils.
- Subsurface accumulation of organo-metal complexes.
- Global distribution: Area – 3.35 million Km^2 (% 2.56)



Andisols:

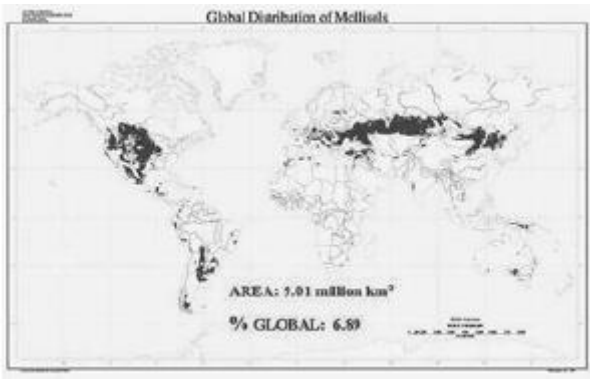
- Formed in volcanic ash.
- Dominated by SRO minerals; Allophane, imogolite, ferrihydrite.
- Global distribution: Area – 0.91 million Km^2 (% 0.7).

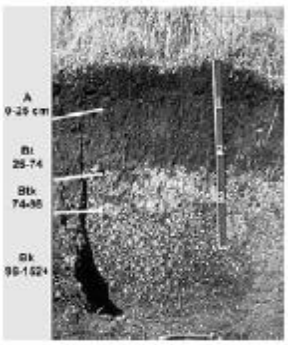




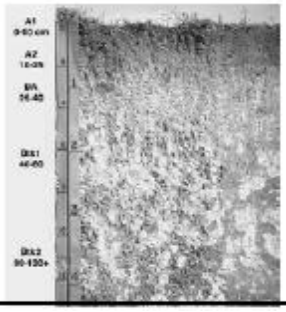
Mollisol:

- "mollis" – latin for soft.
- Grassland and prairie soils.
- Deep, dark, friable, fertile surface horizons; Mollic epipedons.
- Temperate grassland of mid-latitudes.
- Transition from drier desert regions and moister forest regions.
- Commonly mixed with Entisols, Aridisols, and Alfisols.
- Wide range of landscape ages.
- Holocene – post glaciation.
- Mollisols with argillic horizon – polygenetic – past climate change.
- Forest-grassland ecotone.
- Global distribution: Area – 9.01 million Km^2 (%6.89).

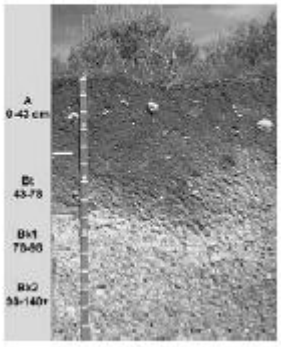




Argiustolls
South Dakota and Texas



Pachic Argicryoll



Pachic Ultic Haploxeroll