Taxonomy & Morphology of Gypseous Soils

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Terms in Lieu of Texture
(Used to describe horizon texture in pedon descriptions)

• For materials with ≥ 40% by wt. gypsum.
• Gypsum dominates phys/chem properties.
  – Traditional particle-size class not meaningful.
• Two Classes
  – Coarse gypsum material
    • > 50% particles 0.1 to 2.0 mm
  – Fine gypsum material
    • < 50% particles 0.1 to 2.0 mm
Substitutes for Particle-size Class
(Used in family classification)

• For materials with ≥ 40% by wt. gypsum.
  – Somewhat like in Andisols, regular particle-size classes and rules of application do not work well for high gypsum soils.
  – 3 classes:
    • Gypseous-skeletal
    • Coarse-gypseous
    • Fine-gypseous
Substitutes for Particle-size Class
(Used in family classification)

• 6 Contrasting Particle-Size Classes
  – Clayey over gypseous-skeletal
  – Clayey over coarse-gypseous
  – Clayey over fine-gypseous
  – Loamy over coarse-gypseous
  – Loamy over fine-gypseous
  – Loamy-skeletal over gypseous-skeletal

• 1 if there is an absolute difference of 15 percent or more gypsum between the two parts of the control section.
Mineralogy Classes

• Rationale – Current limit for gypsic mineralogy is too high and linking with CaCO3 content not needed.

• Revise Gypsic class to allow lower gypsum (15 percent by weight).

• Add new Hypergypsic class for high gypsum soils (>40%).
Additional Terms for Describing Gypsum Morphology in Soils

• Several terms being added to database:
  – kinds of gypsum concentrations,
  – concentration shape,
  – Ped surface features
  – Fragments in horizons
Summary

- Terms in lieu of texture
- Substitute Particle-size classes
- Mineralogy Classes
- “Whiter” color book chips
- Descriptive terms for gypsum in pedons