

Recommendations of the Western Region Soil Taxonomy/Standards Committee for the NCSS

Committee Members:

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Discussion of last charge in 2010.

1. Use of suffix **si** for presence of Sulfide, accepted as **se** to avoid confusion with silica
2. Miscellaneous Areas (list of acceptable and definitions), accepted incorporated into the NSSH
3. **V** Master Horizon, will be resubmitted with edits and clarifications

Discussion for 2012 conference.

1. **V** Master Horizon, **Submit for approval without change** to the National Standards Committee.
2. The final proposal of ICOMANTH, the International Committee for Anthropogenic Soils, that was chaired by Dr. John Galbraith. Also included is a summary report, some examples of the impact on soil series, and a separate proposal for changes to Part 629 of the NSSH on anthropogenic feature terms (geomorphology). The ICOMANTH website (<http://clic.cses.vt.edu/ICOMANTH/>) also has useful information.

The western committee appreciates the efforts that were involved over the years on this project and feel there is just too much here to return a **Submit for Approval or a Rejections**. The proposal has much language in it that is either vague or requires interpretation. Examples of this are in Proposal 3: “intentional alteration”, “were made to enhance”, “sustainably altered” all are open to interpretation unlike a typical key to taxonomy. Proposed action 4 includes ...”added to enhance fertility or water-holding capacity) profoundly altered the physical and chemical properties” implies process and is not appropriate.

This proposed action (Anthropic Epipedons) also discounts irrigated soils that have colors and organic-carbon contents that meet the mollic epipedon. This appears to be an important group of soils that would be eliminated from Anthropic epipedons.

Proposed action 5 adds a new dimension to soil taxonomy, no longer does the pedon stand on its own to be classified, but adds the landform to the requirement.

The Required characteristics of Human Altered Material - again requires the landform in addition to the soil properties of the pedon.

Proposed action 30 adds 19 Human-altered and Human-transported Material classes which is excessive. Ranging the rupture resistance classes from extremely weakly to indurated is also excessive. The Aquadensic class is a mixture of material and aquic conditions. These should be

limited to material. Was this list created by determining every material that could exist or are these documented to occur?

3. A proposal to clarify the mineral soil surface. **Submit for approval without change.**
4. Proposed amendment to soil depth classes of Soil Taxonomy and root restricting depth of Soil Survey Manual. **Submit for approval without change.** Keys to Soil Taxonomy has added the Master M horizon but fails to list human manufactured layers as root restricting.
5. A set of proposals to expand the definition of the abrupt textural change and add mention of its presence as a standalone criterion in certain taxa of the Aridisol, Mollisol, and Alfisol orders of Soil Taxonomy. **Submit for approval without change.** Discussion topic of example on pg. 2 of the proposal, minimum of 8 percent clay, this conforms to the World Reference Base.
6. Proposal for adding anhydrite soils to USDA soil taxonomy. **Reject as proposed.** Problems with the proposal as written mainly are focused on identification and quantifying the anhydrite. The WRD methodology as written is inaccurate on identification of anhydrite because it measures first total sulfates, and then the second method distinguishes between anhydrous and hydrous salts. Neither of these methods accurately identifies or measures anhydrite. As such a minimum XRD analysis should be included – but in addition - details about sample, transport, processing and analytical methods should be presented so that humidity or temperature changes do not affect analytical results. For example, plastic sample bags should not be sealed as condensation can alter anhydrous minerals during shipment/storage. We also wonder if the humidity at the National Lab could affect XRD results? Other questions include: Is the Anhydrite significantly different from other salts to be singled out, or should anhydrous salts in general be recognized? (i.e. what in particular is unique about the behavior or properties of anhydrite as compared to a soil horizon dominated by other anhydrous salts such as thenardite? - Such horizons are known to occur in Chile. We wonder if it would be better to define horizons based on anhydrous salts in general instead of anhydrite in particular? This would remove the issue of identification of anhydrite specifically. Also, if the goal is to indicate the properties and behavior of anhydrous minerals in soil then this would be more inclusive of soils worldwide that contain anhydrous minerals (including anhydrite and not excluding numerous others). Is this unique to one part of the world or can it occur in other parts of the world with extreme aridity? Questions on validity of color requirements.
7. A proposal to add a new subgroup of the Petrocalcic Calcudolls to Soil Taxonomy and includes references to literature documenting the new soils. **Submit for approval without change.** Petrocalcic horizons are recognized in other moisture regimes of mollisols and the new subgroup is documented to occur in the Everglades.
8. A set of proposals to improve the classification of Udolls in Argentina. **Submit for approval with change.** Although this adds consistency to the depth requirements we would like to see the reasoning behind the proposal. How do these depth classes affect interpretations? How does this affect series that exist in the system?
9. Changes to Chapter 3: Horizons and Characteristics Diagnostic for the Higher Categories – Melanic Epipedon. **Submit for approval without change.** Clarification due to changes in the Munsell Color charts
10. We added the review of the Field Guide to Classify Biological Crust for Ecological Site Descriptions. The intent here, as a group recognize the need for a coordinated regional (Nationally may not work) system for identifying, describing and documenting (in NASIS, ESIS etc.) biological crusts.