

This report summarizes the committee meetings of the North Central States Soil Planning Conference. The first part of each report outlines any specified charges for the committee and summarizes charges or ideas from recent past meeting discussions. The second part of each committee report identifies what was discussed at this year' meeting and ends with a summary of items for discussion to bring to the national meeting.

Soil Taxonomy and Standards, Chairperson: John Allen

Charges: **Review of proposed changes to taxonomy: How proposed changes to taxonomy will be vetted at the local, state, national, and international levels.**

2016 Resolutions to Proposals on Soil Taxonomy from the 2015 Conference

2016 Soil Survey Manual Update

2016 MLRA Update

2014 Review proposals for changes to Soil Taxonomy, the National Soil Survey Handbook, the Field Guide for Describing and Sampling Soils, the Soil Survey Manual and recommend adoption or denial.

2014 Identify needed and potentially useful changes to the preceding documents as well as standards related to other soil survey activities, dynamic soil property data collection, ecological site inventory, etc.

2014 Report – addressed changes to taxonomy only.

2015 Review recommendations on Proposal #3: Proposed amendment to definition of episaturation to include densic materials

2015 Review recommendation on Proposal #4: Proposed revision to the criteria for Aquic Hapludults

2015 Review any new proposals brought to committee

2015 Discuss ICOMTAX steps and membership

Minutes of the North Central Soil Taxonomy Committee

Date – July 12, 2016

Location – DeKalb County Farm Bureau Ag Center

Time – 4 pm

The meeting was called to order by chair, John Allen. There were 13 committee members in attendance. The agenda for the meeting was to consider proposals submitted by the 2016 NCSS Regional Standards and Taxonomy Committee. Listed below are the actions taken by the committee on each of the proposals received.

Resolutions from 2015 Conference:

1. **Aquic Hapludults** –

Issue: The variable depth effect upon the Aquic subgroup classification when top of the argillic determines starting point of the criteria rather than the soil surface.

Fix it by modifying the criteria for depth to saturation/water table being determined from the soil surface. 2 subgroups would be impacted—Aquic Arenic and Aquic.

Approved by the committee with no objections.

2. **Calcareous Fens-**

Issue: organic soils in fens can be highly calcareous due to precipitation of carbonates from upwelling ground water. Hydrology and chemistry in these soils is much different from other Histosols.

Fix by creating a family reaction class of “kalkic.” Minimal cost, significant impact in separating calcareous organic soils from highly acidic organic soils.

Strongly approved by the committee with no objections. These changes separate fens from other subaqueous soils and creates a new reaction class (kalkic) in Histosols to describe calcareous organic soils.

3. **Epi vs Endo and the Densic Contact-**

Issue: Water tables perched on top of glacial densic contacts key out as endosaturation instead of episaturation due to ambiguity in whether materials below densic contact are considered as unsaturated layers in Soil Taxonomy.

Fix: Clarify statement regarding how materials below contacts (densic, lithic, paralithic, or petroferric contact) are considered in Soil Taxonomy and clarify the definitions of endosaturation (all layers saturated) and episaturation (having unsaturated layers within 200 cm, but below a perched water table).

After considerable discussion on the definition of densic and the impacts of this proposal the committee voted unanimously to not approve the proposal. The committee felt that their needs to be a detailed review of the densic diagnostic definition and interpretations. The committee feels that the current densic definition has changed too much, become too inclusive, relative to its original intent. As a result, this current proposal is difficult to understand or justify.

4. **Subaqueous Soil Revisions:**

Issue: As examination, mapping, and analyses of subaqueous soils continues, changes in terminology or criteria as well as addition of more classes are warranted. Affects areas only in the subaqueous region – approved unanimously by the committee.

New Proposals for 2016:

5. **Densic Great Groups of Udepts and Aquepts**: Densic contacts are not recognized in Soil Taxonomy in the classification hierarchy. **Fix**: For the Udepts and Aquepts Suborders, develop appropriate Great Groups and corresponding Subgroups for soils with densic contacts within 100 cm of the soil surface (*Densiaquepts*, *Densiudepts*)

Unanimously denied by the committee. As stated above there is a need to better and more tightly define densic. Because of the significant impacts in terms of workload to implement this proposal and the impact of this proposal on other soil orders, the committee feels this proposal needs more study and impact review.

6. **Changes for Spodosols and Spodic Horizon Designations**: many Aquods lack sufficient iron to produce redox features; the maximum Fe content is set too low for many taxa to meet. There is ambiguity in distinguishing Bh from Bhs horizons in the field with current definition. **Fix**: Require Aquods to only meet Aquic Conditions (remove redoximorphic feature requirement); redefine the requirement for Alaquods and Alorthods to require $<0.1\%$ ammonium oxalate extractable (AOE) Fe, or *3 times more AOE Al than Fe*; refine distinction and definition of Bh and Bhs horizons— **The committee felt the proposal was a sound proposal but we are not certain about the impacts. As a result the committee provisionally approved the proposal with a more complete review of impacts.**

7. **Changes in Limnic Horizons and Materials**-- **Issue**: Limnic horizons and materials are treated as organic soils as currently placed in Soil Taxonomy. These materials occur in significant quantities outside of the soils meeting the requirement for Histosols, yet very little treatment is given them. Redefinition and clarification of limnic materials is needed as well as the addition of taxa and classes to adequately convey important characteristics in Soil Taxonomy. **Fix**: To more completely describe, classify, and interpret soil material or soil horizons containing significant amounts of limnic material which do not classify as Histosols. Five proposals have been made regarding the description and identification of limnic materials: 1) consideration outside of Histosols, 2) limnic materials as texture modifiers, 3) creation of new Limnic subgroups, 4) use of in-lieu-of-texture modifiers for limnic materials, and 5) addition of a diatomaceous mineralogy (Opaline).

The committee felt the proposal was a useful idea but needs more investigation on the impact of this proposal. The committee felt this proposal has a big workload that needs to be considered versus the benefits.

Other items for Discussion and Further Development:

We ran out of time during our committee breakout session to discuss the following issues, but we did receive some comments through e-mail:

8. **Surface mantle and buried soil concepts not adequately defined**-- **Issue**: Surface mantle and buried soil concepts not adequately defined. **Fix**: Added description of surface mantle and clarified concepts and distinctions between surface mantle and buried soil.

Okay with proposed additions defining when human transported materials are considered a surface mantle.

9. **Bedrock, Fragments and Densic Materials**—**Issue**: Need for a unified decision tree regarding bedrock, densic material, and fragments in soils.

Looks like a good start in better defining densic materials and contrasting with paralithic and lithic situations, but still some vagueness. For instance, the term “geologically old” is used to define some densic materials apart from till. What is the term referring to? How old is geologically old”?

10. Isotopic Mineralogy in Sandy Soils---no comment

11. Initiation of Yermic Diagnostic Feature—no comment

Respectfully submitted,

Doug Malo and John Allen

Soil Taxonomy and Standards, Chairperson: John Allen

Committee participants: Curtis Monger, Doug Malo, Twelve others. **SUMMARY**

Specified Charges:

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Talking Points (bulleted format): Committee focused on proposed taxonomic changes. Time was too short to complete the list of all taxonomic issues and other specified charges. "...ran out of time during our committee breakout session to discuss the following issues, but we did receive some comments through e-mail:"

Narrative Summary: Several taxonomic issues were discussed some were approved. An issue with the definition of Densic affects some of the proposed changes.

Pre-2016 revisions:

Calcareous fens: approved 'Kalcic' reaction class;

Epi vs Endo and the Densic Contact: Not approved. Need for detailed review of densic diagnostic definition revision;

Subaqueous soil revisions: Approved the need for revisions with no revisions specified.

2016 proposals:

Densic Great Groups of Udepts and Aquepts: Not approved—citing need for better densic definitions;

Changes for Spodosols and Spodic Horizon Designations: Sound proposal, provisionally approved pending review of impacts;

Changes in Limnic Horizons and Materials: Useful idea than warrants more investigation of impact, also considered to be a potentially high workload with cost\benefit reservations.

E-mailed suggestions:

Surface mantle and buried soil concepts not adequately defined: "ok with proposed additions";

Bedrock, Fragments and Densic Materials: "A good start", also the definition of densic affects the decision.

No Comments were made on:

Isotopic Mineralogy in Sandy soils or

Initiation of Yermic Diagnostic Feature

NCSS North Central Region Soil Taxonomy and Standards Recommendations: