

# **Fundamental Changes in Soil Taxonomy Task Force**

## **2023 Annual Meeting Agenda**

Sunday October 29, 2023. 7 to 10 pm Room 360 Americas Complex Convention Center

- 1) Review of previous annual report (see below).
- 2) Revision of NSSH part 614 with regard to procedures for making changes to Soil Taxonomy (Joey).
- 3) Have the criteria for defining OSM (saturated vs unsaturated) been finally resolved in the 13th Edition of the KST (Joey/Dave).
- 4) Definition of mollic and umbric epipedons (John).
- 5) Status of Artesol proposal (John).
- 6) Status of Aquasol proposal (Mark).
- 7) Criteria for classification of an Aquasol (ICOMSAS, see current draft below).
- 8) Discussion on proposed Aquasol suborders.
- 9) Other proposals for consideration?

## 2022. Body of Report

Members of the Fundamental Changes to Soil Taxonomy Task Force met at the SSSA annual meeting in Baltimore on November 7<sup>th</sup>. Focus at the meeting was on how to communicate to the soil science community the process of moving proposals through the National Cooperative Soil Survey toward final approval. Our goal has always been to make this a transparent process and we want to make sure that goal is maintained.

Throughout the year there were numerous email communications around the current Soil Taxonomy issues being debated. Members of the task force participated in the National Cooperative Soil Survey (NCSS) regional conference discussions focused changes to Soil Taxonomy (mostly those proposed by the task force). Three fundamental changes were the focus of this year's discussions: 1) a change in the definition of the mollic epipedon; 2) creating a wet soil order (Aquasols), and 3) creating a soil order for anthropogenic soils (Artesols). At the meetings comments on each of these proposals were provided by each region and these are currently being addressed by task force members.

The definition of organic soil materials was incorporated into the 13<sup>th</sup> edition of the Keys to Soil Taxonomy (in press). Task force members drafted language for the change.

The proposal for changing the definition of the mollic epipedon was thoroughly debated at the regional NCSS meetings in the summer of 2022. The continued issue was defining the thickness of the epipedon. The task force has worked on resolving this issue and we expect our resolution (continued use of the sliding scale) to be accepted by the NCSS and the redefinition approved for inclusion in Soil Taxonomy.

Proposals for a wet soil order (Aquasols) and a soil order for anthropogenic soils (Artesols) in Soil Taxonomy was presented at the NCSS regional meetings. Both proposals were in general well supported. Comments and feedback were received and are being integrated into the proposals. The goal is to have both the proposals approved at the national NCSS meeting. The task force continues to debate and work toward the development a full proposal for moving soil moisture regime from the suborder to family level in Inceptisols, Mollisols, Ultisols, Alfisols, Vertisols, and Oxisols. We expect a draft proposal will be ready for discussion at the NCSS Soil Taxonomy committee meetings this spring and summer.

Items to bring before the Board.

We want to thank the board for their continued support of the Fundamental Changes to Soil Taxonomy Task Force.

Draft Oct 18, 2023

## KEYS TO ORDERS

A. Artesols (proposed)

B. Gelisols

C. Histosols

D. Other soils that have: (NOTE: THE CRITERIA BELOW LARGELY REFLECT WHAT CURRENTLY IS IN SOIL TAXONOMY FOR AQUIC SUBORDERS (within 50 cm) AND BRINGS THE FOCUS TO WITHIN 30 CM.)

1) a Histic epipedon, or

2) aquic conditions for some time in normal years (or artificial drainage) within 30 cm of the mineral soil surface, and one or more of the following:

- a. *A Mollic or Umbric epipedon where the lower portion (within 30 cm) has*
- Chroma  $\leq 2$ , and contains distinct or prominent concentrations, or*
  - Chroma  $\leq 1$  and is immediately underlain by a horizon where  $>50\%$  of the soil (on ped faces or within peds) has one of these combinations of Munsell hue, value, chroma and redox concentrations*

Hue	Value	Chroma	Redox Concentrations
Neutral (N)	$\geq 4$	0	No
10YR or redder	$\geq 4$	$\leq 1$	Yes
2.5Y or yellower	$\geq 4$	$\leq 1$	No
2.5Y or yellower	$\geq 4$	$\leq 2$	Yes
5Y or yellower	$\geq 4$	$\leq 3$	Yes

b. A soil horizon with textures **finer than LFS** and >50% of the soil (on ped faces or within peds) has one of these combinations of Munsell hue, value, chroma and redox concentrations

Hue	Value	Chroma	Redox Concentrations
10YR or redder	$\geq 4$	$\leq 2$	Yes
2.5Y or yellower	$\geq 4$	$\leq 1$	No
2.5Y or yellower	$\geq 4$	$\leq 2$	Yes
5Y or yellower	$\geq 4$	$\leq 3$	Yes
Neutral (N)	$\geq 4$	0	No

c. A soil horizon with textures of **LFS or coarser** and >50% of the soil (on ped faces or within peds) has one of these combinations of Munsell hue, value, chroma and redox concentrations

Hue	Value	Chroma	Redox Concentrations
10YR or redder	$\geq 4$	$\leq 1$	No
10YR or redder	Any	$\leq 2$	Yes
2.5Y or yellower	Any	$\leq 1$	No
2.5Y or yellower	Any	$\leq 3$	Yes, dist or prom
Neutral	Any	0	No

3. Sulfidic materials within 30 cm of the soil surface; or
- 4) Inundation with 2 cm or more of water for at least 21 hours per day, for every day of the year;  
or
- 5) Have peraquic conditions (within 30 cm of the mineral soil surface).

**Aquasols**