

Proposed Amendment to definition of episaturation to include densic materials

By: Dr. Mark Stolt, Jim Turenne, Donald Parizek, and Debbie Surabian. April, 2013.

Purpose:

To allow for soils with dense till to have episaturation.

Background:

Soils with densic materials such as dense till (2Cd or Cd horizons) often have perched, seasonal high water-tables and have been considered by many in the Northeast (and elsewhere) to meet the classic concept of episaturation. Currently, however, there is inconsistency in the way soils with episaturation are classified with regard to densic materials. A review of 33 Epiaquepts OSDs in MO-12 showed that 9 (listed below) have densic contacts (Cd horizons) while other soils with densic contacts such as Ridgebury are not considered to have episaturation (Endoaquepts). Ridgebury is a benchmark soil that is mapped on over 331,000 acres and has a densic contact between 40 and 60 cm but is currently classified as an Endoaquept. In 2003, Ridgebury soils were changed from Epiaquepts to Endoaquepts, based on an interpretation of Chapter 4 in Keys to Soil Taxonomy. It reads: *“In the “Key to Soil Orders” section and the other keys that follow, the diagnostic horizons and the properties mentioned do not include those below any densic, lithic, paralithic, or petroferric contact.* During the 2011 Northeast Pedology tour the Ridgebury series was reviewed and the consensus among the university cooperators in the Northeast and NRCS soil scientist was that the soil should be classified as episaturated (Epiaquepts as opposed to Endoaquepts). In addition, at the 2012 regional soil judging contest in Ohio, soils with densic contacts were classified as episaturated as is done in Ohio by NRCS soil scientists in the state.

Saturation type plays a very important role in hydopedology and hydrogeomorphic wetland classification. It is important to differentiate soils with “true” or apparent water tables from soils with perched episaturated conditions.

Proposal:

Page 31 of Keys, 11th edition, 8th paragraph the proposed removal of densic contact:

In the “Key to Soil Orders” and the other keys that follow, the diagnostic horizons and the properties mentioned do not include those below any **densic**, lithic, paralithic, or petroferric contact.

This small change would enable soils scientists to correctly classify many of our Aquepts formed in dense till that truly exhibit episaturated conditions.

Examples of soils in MO-12 that have densic contacts and are classified as episaturated: Filion, Kilmanagh, Malone, Parkhill, Punsit, Stissing, Sun, Suny, and Ziegenfuss.