Fuzzy Systems Application to Soil Interpretations. (S06nielsen152957-Poster)

Authors:

• R.D.Nielsen - USDA-NRCS, Lincoln, NE

Abstract:

Fuzzy systems and fuzzy logic techniques have been applied to soil survey interpretations to improve the quality of the soil interpretive result. This study presents a method, as employed by the USDA-Natural Resources Conservation Service, of applying fuzzy logic methodology and conventions to the art of generating soil interpretive ratings for a variety of land uses. Fuzzy system membership values determine a soil limitation or fitness for the interpretive application and are set relative to the truthfulness of the interpretive rule or statement. Using a fuzzy system to evaluate a soil potential or limitation for a specified land use allows the differentiation of interpretive results between and among soils. Soils that were grouped for interpretive purposes into the same class are still within that class, but they are also rated as to their membership value within the class. The application of fuzzy systems to soil interpretation and interpretive ratings improves the interpretive product and provides the user with additional information upon which to base decisions.

Corresponding Author Information:

Robert Nielsen USDA-NRCS Fed. Bldg, Rm 152, MS 33 100 Centennial Mall North Lincoln, NE 68508-3666 phone: 402-826-4628 fax: 402-437-5336 e-mail: bob.nielsen@nssc.nrcs.usda.gov

Presentation Information:

Presentation Date: Wednesday, November 13, 2002 Presentation Time: 4:00-6:00 pm Poster Board Number: 2209

Keywords:

Fuzzy Systems, Soil Interpretations, Soil Potentials