Advancing Towards a Universal Soil Classification System

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Within the variability of soils across the globe, there are common soil attributes that pedologists have used to group soil within taxonomic classifications. Classification systems are necessary for the communication of information about soils. There are many national classification systems used within designated countries and two classification systems used globally, the US Soil Taxonomy and the World Reference Base. There is a great need for soil scientists to develop one common language or taxonomic system to communicate information within soil science as well as to other scientists in other disciplines. The International Union of Soil Sciences Working Group for Universal Soil Classification was officially established by an IUSS Council decision in August of 2010 at the World Congress of Soil Science in Brisbane, Australia. The charge for the Working Group includes development of common standards for methods and terminology in soil observations and investigations and the development of a universal soil classification system. The Universal Soil Classification Working Group was established and the initial meeting was held at Purdue University in West Lafayette, Indiana USA. The Working Group has evaluated the current national systems and the two international systems to identify gaps in knowledge. Currently, it was determined that gaps in knowledge exists in cold soil, hydromorphic, salt affected, anthropengic, and tropical soil groups. Additionally, several members of the Working Group have utilized taxonomic distance calculations from large databases to determine the clusters of similar taxonomic groupings utilizing the classification. Additionally, the databases are being used to make allocations into logical groups to recognize "Great Soil Groups". The great soil groups will be equivalent to great groups level from Soil Taxonomy along with similar levels in the World Reference Base, Australian Soil Classification and other defined soil classification systems. The Working Group has identified gaps in knowledge of current classification systems, utilized soil databases to determine natural clusters and identified an ideal structure for soil classicization systems.