Changes in Soil Properties Important to Erosion in Western North Dakota. (S05-ulmer090135-Poster)

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Abstract:

To meet expanding conservation needs the development of a use-dependent data base was initiated for MLRA 54 in southwestern North Dakota. Soils at twenty-eight sites were described and sampled. Each site consisted of a pair of samples: one from a long-term cultivated field and one from adjacent rangeland. Soils all classified the same and represented the major agricultural soils in the region. All sites were on similar slopes and aspects, were deep or moderately deep, and medium textured. Surface and profile samples were collected and standard chemical and physical characterization was completed. Surface layer aggregate analyses was done with a rotary sieve, the >0.84mm fraction was determined with a rocker sieve, and the 1-2 mm fraction was wet sieved. Under cultivation, organic carbon, total N, inorganic carbon, >0.84 mm fraction, air-dry and field moist stable aggregates, and the 2.00-4.00 mm, 4.00-6.00 mm, 6.00-19.2 mm and the >19.2 mm soil fractions were lower than in native sites. The native sites had lower C:N ratios, and <0.42-.84mm and 0.84-2.00 mm fractions. Results support placing cultivated sites into a higher wind erosion group and investigating the potential of mapping eroded phases in the region.

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