Soil Landscape Studies in Alberta, 1996-2002. (S05goddard183233-Poster)

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Abstract:

Qualitative understanding of relationships between soils and landscapes has been fundamental to soil mapping. New developments such as precision farming and nutrient management planning can benefit from improved and higher resolution soil information. Traditional soil survey methods have become too costly, time consuming and require levels of expertise becoming less widely available. We have investigated approaches for recognizing and quantifying soils-landscape relationships. We present test results of one tool that can automatically classify landscapes into landform units utilizing fuzzy heuristic rules. We have shown that the variation in soil properties as well as fertilizer response can be lower within a defined landform. We can combine high resolution landform classifications with a small-scale soils database to produce first approximations of detailed soil maps. We have automatically partitioned catchments into hydrologic response units required to define the spatial framework for applying WEPP. Automated classification of landscapes has improved our ability to apply agronomy more precisely at a field level and to assess soil characteristics and risks at different scales.

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