Reprinted from

Symposium on

Machine Processing of

Remotely Sensed Data

June 27 - 29, 1979

The Laboratory for Applications of
Remote Sensing

Purdue University
West Lafayette
Indiana 47907 USA

IEEE Catalog No.
79CH1430-8 MPRSD

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A COMPREHENSIVE COMPUTER-AIDED SOIL MAP OBTAINED VIA SATELLITE MSS DATA

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Geometrically corrected and temporally registered Landsat data collected over Vigo and Tippecanoe Counties, Indiana have been used to produce computer-aided soil maps at 1:24,000 scale.

A tabulation was made of selected soil properties such as soil color tones, drainage parameters, available water capacity, water permeability, erosion, drought resistance, organic matter content, fertilizer and lime requirement, and topography. These observations were recorded and used as a basis for grouping soil mapping units into a "comprehensive, interpretive" computer map using the "Printresults" LARSYS processor. Soil maps obtained with such data have considerable implications in agricultural planning, in utilization of land resources, and especially in yield prediction for each soil unit after soils are identified and mapped. The yield prediction obtained by satellite data can be easily extended geographically from one area to another. A comprehensive soil map can be very useful for showing salt and sodium accumulation on the soil surface or for indicating levels of organic matter in cropping systems as a guide to fertilizer usage.

The conclusions of the study are that the use of Landsat MSS data for automatic mapping of soil information appears very feasible. The information maps based on soil characteristics are relevant to farmers, planners, economists and other users interested in evaluation of soil resources.