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INTERNAL REPORT 112

SOIL VARIABILITY, OREGON IBP: ANNUAL REPORT 1972

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ABSTRACT

Goals in 1972 included characterization of the soils of the Oregon IBP reference stands, development of information on the soils throughout the H. J. Andrews Experimental Forest, and evaluation of nutrient provision to the major kinds of soils. Field reconnaissance, soil morphology studies, and sampling were carried out. Lab analyses are in progress. Field and lab data will be compiled in an internal report.

INTRODUCTION

This group's primary objective in 1972 was to characterize the soils of the reference stands and selected unit watersheds in and near the H. J. Andrews Experimental Forest. Secondary objectives were to develop information on the characteristics, distribution, classification and genetic relationships of soils throughout the Andrews Forests, and to evaluate nutrient provision to the major kinds of soils.

Principal investigators were Dr. E. G. Knox, Department of Soil Science, Oregon State University, and Dr. R. B. Parsons, Soil Conservation Service, Oregon State University. Assisting since 1 May 1972 was R. B. Brown, Department of Soil Science, Oregon State University.

MATERIALS AND METHODS

Soils of Reference Stands 1 through 19, located variously at (1) H. J. Andrews Experimental Forest, (2) Cone Creek, near McKenzie High School, and (3) Wildcat Resource Natural Area, were studied. Two each of these reference stands reside, in whole or in part, on Watersheds 9 and 10, so these watersheds received scrutiny coincidental to reference stand investigations.

Soil-landscape distribution patterns on and near the reference stands were evaluated, and a total of 32 pedons were chosen near the reference stands for intensive soil studies. Each reference stand had a minimum of one and a maximum of four such pedons, depending on how many were thought necessary to adequately characterize the soils, and in an effort to gain limited information on small-scale soil variability.

Profile descriptions were made of soil morphology for each of the 32 pedons. The pedons were sampled by horizons for lab analyses. Core samples were taken, where possible, for determination of bulk density. One-hundred eighty bulk samples and 57 core samples were taken.

The bulk samples were prepared and submitted to the IBP Chemical Analysis Lab, Corvallis, for determinations of pH, CEC, available P, exchangeable K, Ca, and Mg, exchangeable, H, total organic C, and total N.

Bulk density determinations and mechanical analyses to determine

particle size distributions on major genetic horizons are being performed in the OSU Soil Physics Lab by R. B. Brown.

RESULTS AND DISCUSSION

All lab analyses are in progress.

It is anticipated that lab analyses will be concluded and compilation of data will be commenced by late March. Lab and field data will be presented in a summary document characterizing the soils of the reference stands. The report will include calculations and interpretations of the readily available nutrient capital in the soils under consideration. We expect to submit this document as an internal report prior to commencement of the 1973 field season.

Dr. E. G. Knox has departed from Oregon State University.

Dr. R. B. Parsons continues as principal investigator in the Soil Landscape Variability segment of the Geochemical Processes Committee.



