

Soil and Environmental Factors as Predictors of Cubic Volume Growth in California Mixed Conifer Stands

The Northern California Soil - Site Cooperative

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by

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ABSTRACT

This report describes the development of models to predict the cubic foot productivity of second-growth mixed conifer forest stands in Northern California. These models are developed using only soil chemical and physical site factors or forest stand factors and also using all information combined. Thus, a forest manager can obtain estimates of productivity for bare soil conditions based on soil chemistry, or she can obtain efficient estimates of productivity based upon stand factors alone. In both cases predictions are improved when both stand and soil chemistry factors are used for prediction.

INTRODUCTION

Research in the area of soil-site productivity has usually focused on predicting site index as a function of soil physical and chemical properties and topography (cf e.g. Alban, 1974, Payandeh, 1986, Schmidt and Carmean, 1987, and Wall and Loewenstein, 1969). This technique is valuable when it is difficult or impossible to find adequate site index trees (Schmidt and Carmean, 1987 and Munn and Vimmerstedt, 1980).

Many soil-site studies have been conducted in the United States. Results of these studies vary with different species, regions, soils, topography and climatic conditions (Schmidt and Carmean, 1987). While there have been many studies, few have been conducted in

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