

AN ABSTRACT OF THE THESIS OF

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Title: FOREST VEGETATION AND SOILS OF TERRACES AND  
FLOODPLAINS ALONG THE MCKENZIE RIVER, OREGON

Abstract approved: \_\_\_\_\_  
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A study of the McKenzie River floodplains, terraces and glacial outwash plains was undertaken to classify and describe the vegetation and soils of a previously little studied synecological unit.

During the summer of 1971, 54 analytic vegetation and soil plots (stands) were studied. Cover and frequency of all trees, shrubs, herbs and mosses were recorded as well as a soil description for each stand. Using Braun-Blanquet manual-visual association tables and computerized SIMORD analysis, four communities were identified. Further analysis of the four communities revealed two sequences of seral associates leading to the development of two basic habitat types: one a climatic climax and the other a topo-edaphic climax association.

Succession on floodplains, terraces, and glacial outwash plains appears initially to follow a change from coarse, shallow soils to fine, deep soils. The climatic climax (Tsuga heterophylla/Acer circinatum/Polystichum munitum-Oxalis oregana association) then develops on

floodplains and terraces with deep, fine textured soils. The topographic climax (Tsuga heterophylla/Berberis nervosa-Gaultheria shallon/Linnaea borealis association develops on terraces and glacial outwash plains with shallow, coarse textured soils that have large amounts of stones and cobbles in all horizons of the soil profile.

Further modifications of sites by fire and flooding also create different plant communities which add to the total diversity of forest vegetation occurring on alluvial deposits of the McKenzie River, Oregon.