

Implementation of a Thinning and Burning Study in Tanoak-Redwood Stands in Santa Cruz and Mendocino Counties¹

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Abstract

Three silvicultural treatment study sites are being established to examine the effects of thinning and prescribed burning on infection and spread of *Phytophthora ramorum*. Study sites are located in Mendocino and Santa Cruz counties, California. Stands are even-aged redwood/tanoak mixtures.

Key words: *Phytophthora ramorum*, *Sequoia sempervirens*, *Lithocarpus densiflora*, thinning, prescribed burning.

Introduction

Thinning and burning effects on infection by and spread of *Phytophthora ramorum* ("sudden oak death" or SOD) are largely unstudied. A series of thinning and burning studies are being established in Santa Cruz and Mendocino Counties, California to examine the effects of these practices on SOD. The objective of this work is to examine the effects of thinning and burning on spread of SOD in infested and uninfested mixed tanoak (*Lithocarpus densiflora* (Hook&Arn.) Rehd.) and redwood (*Sequoia sempervirens* (D. Don.) Endl.) stands. The Santa Cruz sites are located on Soquel Demonstration State Forest in infested stands. The Mendocino sites are at Jackson Demonstration State Forest in uninfested stands.

Study Sites

All study sites consist of mixed redwood and tanoak in predominantly even-aged stands, 80 to 100 years old. Two sites are located at Jackson Demonstration State Forest and a single site is located at Soquel Demonstration State Forest.

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Treatments and Methods

Each of the study stands has been divided into four treatment areas of approximately 1 to 3 ha each (fig. 1). Treatments are planned to include thinning, burning, thinning and burning and a control. Treatments are expected to occur during 2007. The protocol for thinning treatments includes a low thin to reduce stocking by approximately 50 percent. Tanoak and redwood will be thinned including reduction of density within sprout clumps. Thinning will attempt to homogenize stand structure across all three study areas. Burning treatments will be low-severity surface fires with possible supplemental slash treatment in thinned areas. Three plots per treatment have been established to document pretreatment vegetation characteristics. Plots are 0.025 ha and systematically located within treatment areas.

Outlook

These treatments – once implemented – will provide opportunities to examine the effects of density reductions and/or burning on SOD in mixed redwood/tanoak forests. The study design may also present opportunities to examine the effects of these treatments when implemented before infection if the Jackson Demonstration State Forest sites become infested. In either case, these study installations present opportunities to overlay other related studies to examine interactions between stand-level management and SOD.

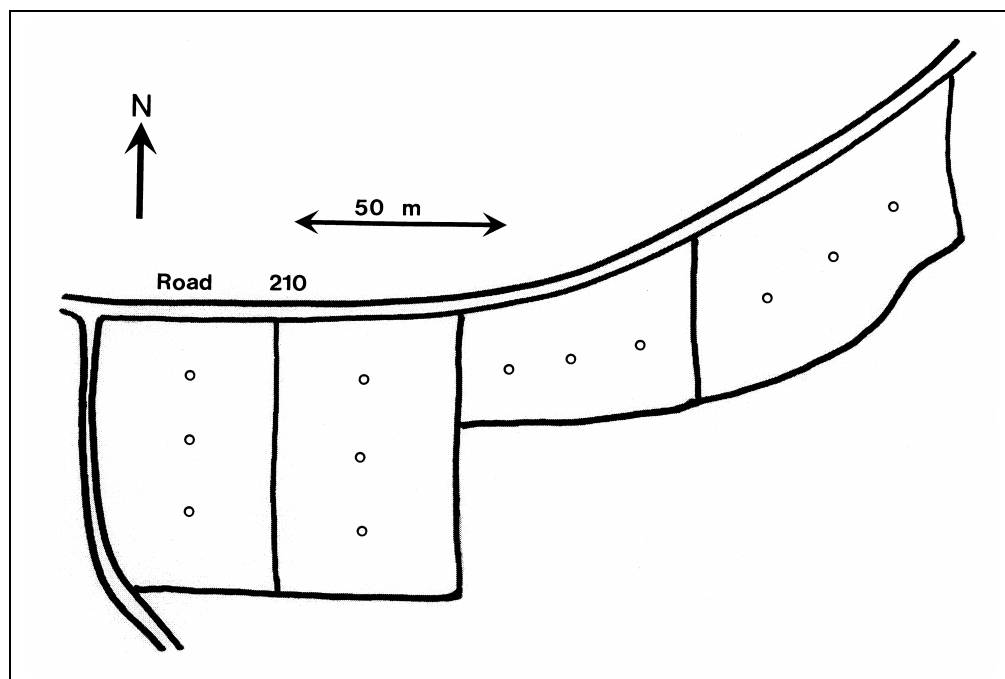


Figure 1—Treatment layout at Jackson Demonstration State Forest showing four treatment areas with approximate locations of sample plots.