

Manzanita Control in Ponderosa

prescribed burning used to kill brush and to deplete seed source in the soil and promote germination of pine seedlings

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Prescribed burning has been used successfully to manipulate brush in second-growth ponderosa pine to increase desirable plants; to kill mature brush plants; to kill brush seedlings and deplete the amount of seeds in the soil; and, at the same time, to prepare a better seedbed for pine seedling germination.

A prescribed fire in mature manzanita under ponderosa pine in early April killed 93% of the mature brush plants. A second burning—under slightly drier conditions—killed the remaining brush.

On several plots, the pine trees were thinned with the slash and dead material burned in small piles beneath the trees, in February 1953. Following this treatment manzanita seedlings appeared in the spring in great numbers. Some of them died but others emerged in 1954, 1955, and 1956. In 1954 many pine seed-

lings appeared after a fairly good seed crop in the fall of 1953.

In March, 1956, the plots were reburned to see how many of the brush seedlings would be killed, how many would appear the next spring, and if repeated treatments of this kind would gradually deplete the amount of seed in the soil. Manzanita seed germination is stimulated by fire and without some such treatment they may lie dormant in the soil for many years.

At the time of reburning in March many small cones on the trees indicated a good seed crop in the fall of 1956. Before burning, the manzanita and pine seedlings were counted and charted, as shown in the top portions of the illustrations. The fire killed all seedlings except one manzanita which was in a spot where the fuel was too light to carry fire.

The plots were recharted in early June 1957. A few new seedlings of manzanita had emerged in the spring of 1957, but many pine seedlings came up as indicated in the lower portions of the illustrations.

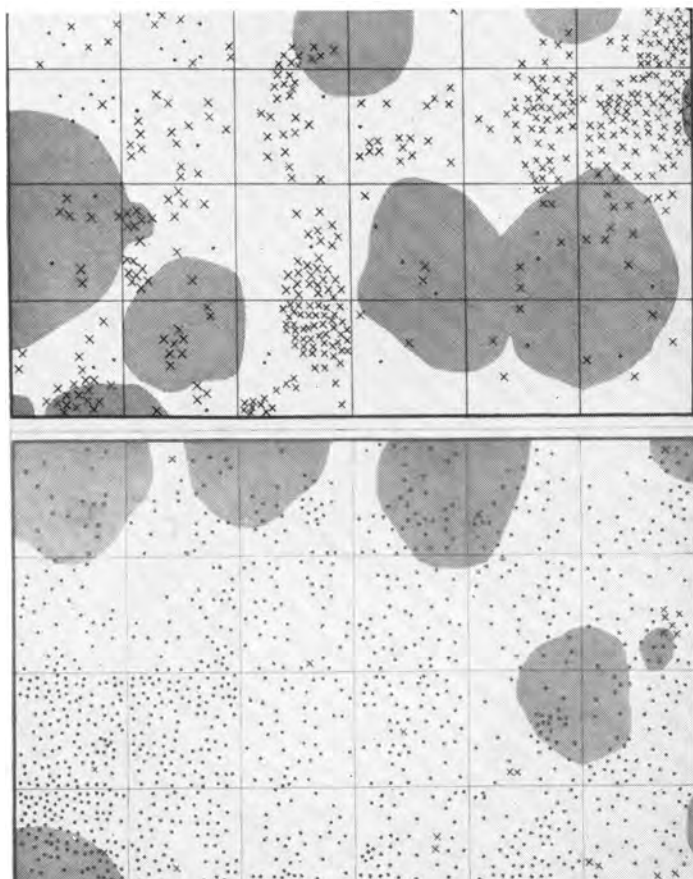
On the basis of these results, it is evident that the number of manzanita seedlings in second-growth ponderosa can be reduced by prescribed burning, and—if timed with a seed crop of pine—pine seedlings may appear in abundance.

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Manzanita—x—and pine seedlings—•—on plot No. 1. Top—March 1956 just prior to prescribed burning; bottom—in June 1957. Shaded portions are projections of tree canopies. Plot 60'x60'.



Manzanita—x—and pine seedlings—•—on plot No. 2. Top—March 1956 just prior to prescribed burning; bottom—in June 1957. Tree canopies are represented by shaded areas. Plot 60'x60'.

