

Influence of soil type on

Reforestation

in Humboldt County

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Forestry is the major source of income for Humboldt County, with more than 90% of its land area in wildlands. Approximately three quarters of the wildlands are in conifer forests and one quarter in rangelands.

Intensive logging of redwood and Douglas fir—begun during the 1940's—has left thousands of acres of cut-over lands. Some of the land has a fine stand of young conifers, but much of it has not regenerated. Differences in the plant successions on the different types of forest soil were first noticed on a ranch just north of Bridgeville, where 80 acres of Douglas fir were logged in 1946. Ten years later, the 15 acres on Josephine soil had a heavy stand of young Douglas fir but the remaining 65 acres—on Hugo and Melbourne soils—were only sparsely restocked and the few trees growing there were heavily browsed.

In general, in Humboldt County, red soils of the Mendocino and Sites types and reddish-yellow soils of the Josephine type tend to reforest themselves rapidly if a seed source is available. Deer are present in the young forests, but browsing there is only occasional. Studies showed that 13-year-old trees on Josephine soil averaged 10' in height and

1,880 trees per acre. On the two red soils there were 2,000-2,300 trees per acre, 10-12 years old and averaging 19' high.

The brown and gray soils do not reforest themselves rapidly. Only 75 trees per acre were found on brown Masterson soil, 130 on brown Melbourne soil, and 160 on brown Hugo soil. The trees were 11-12 years old but—because of browsing—they averaged only 2.1'-2.5' in height. Young conifers on Melbourne soil appear to be the trees most favored by deer, but trees on all three of the brown soils were heavily browsed.

Ring measurements from old stumps show that tree growth is actually more rapid on the brown than on the red soils. The brown soils contain more organic matter and more phosphorus than do the red soils. Douglas fir seedlings that grow on brown or gray soils contain a higher percentage of nitrogen than do seedlings on red soils.

Young trees occur as true forests on the red and reddish-yellow soils. On the three brown soils, conifer seeds germinate and young trees grow well only on skid trails, road cuts, or other areas where the subsoil is exposed.

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Right—Young redwood-Douglas fir forest on red Mendocino soil seven miles north of Korb. The area was logged over in 1948 and re-logged in the early 1950's. The trees are from 4' to 16' tall.

Far right—Dense stand of brush on brown Larabee soil, 8½ miles north of Korb, on the west side of the north fork of Mad River. The area was logged in 1946.

Below—Heavily browsed young Douglas fir on skid trail on brown Melbourne soil, 6½ miles north of Korb. Area covered with brush after logging in 1944 and again in 1946. Abundant seed of Douglas fir was available.

