81. Soldier (Leitner and Leitner 1988)

Location

This recommended RNA is on the Six Rivers National Forest about 12 miles (19 km) ENE. of Alderpoint. It lies within portions of sects. 4 and 5 T3S, R7E and sects. 32 and 33 T2S, R7E HBM (40°14'N., 123°23'W.), USGS Zenia quad (*fig. 163*). Ecological subsection – Central Franciscan (M261Bb).

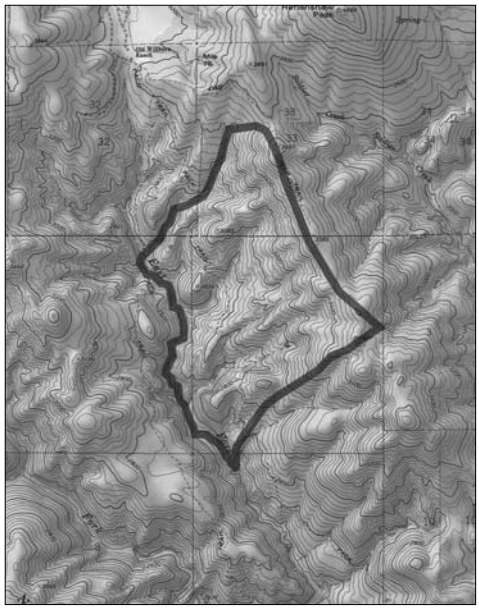


Figure 163—Soldier rRNA

Target Element

Oregon White Oak (*Quercus garrya*na)

Distinctive Features

Oregon White Oak Forest: Oregon white oak is considered a successional species throughout much of its range. In this part of California the dominance of the species was favored by natural and native American-caused fires. As a result of fire suppression in recent decades, Douglas-fir (*Pseudotsuga menziesii*) is rapidly replacing Oregon white oak as the dominant in many areas, including parts of the Soldier recommended RNA (*fig. 164*).

In addition to increases in Douglas-fir, recent poor reproduction by Oregon white oak has been noted in this area. The lack of historical information on fire frequencies, grazing and browsing pressure, acorn predation, and other possible factors contributing to poor reproduction limits the understanding of this association.

The area is at the S. end of the range of the Oregon white oak woodlands and is relatively xeric compared to other such woodlands to the N. in Redwood National Park and elsewhere. The mixed foothill pine (*Pinus sabiniana*) and Oregon white oak association described at Soldier may be relatively stable and less susceptible to conifer invasion and dominance. Local site conditions may represent the dry, rocky, edaphic limit of Oregon white oak and other Douglas-fir associates and the high elevation and high rainfall limit for foothill pine.

Rare Plant: This area contains populations of *Sanicula tracyi* (CNPS List 1B).

Physical Characteristics

The area covers 709 acres (287 ha) between 2300 and 3650 ft (701-1113 m) elevation within the drainage of the North Fork of the Eel River. It occupies SW.-facing slopes above the East Fork of the North Fork of the Eel River. These slopes are dissected by six small ravines affording small areas of NW.- and SE.-facing exposures.

The geology is Franciscan assemblage dominated by late Jurassic graywacke and shale. Soils are considered part of the Doty-Hecker family association mapping unit, ranging from fine to heavy loam in the Doty family to gravelly or gravelly clay loam in the Hecker family. Annual precipitation is estimated at 65 inches (1651 mm); about 60 days are at or below freezing per year.

Association Types

Four associations are described in the survey. Nine 0.1-ha vegetation samples were taken in the three forest types. The grassland is qualitatively described. Acreages of the associations are not given.

Oregon White Oak-Foothill Pine (71110, 71410): This is the most extensive association in the area. It is dominated by medium-sized, moderately spaced Oregon

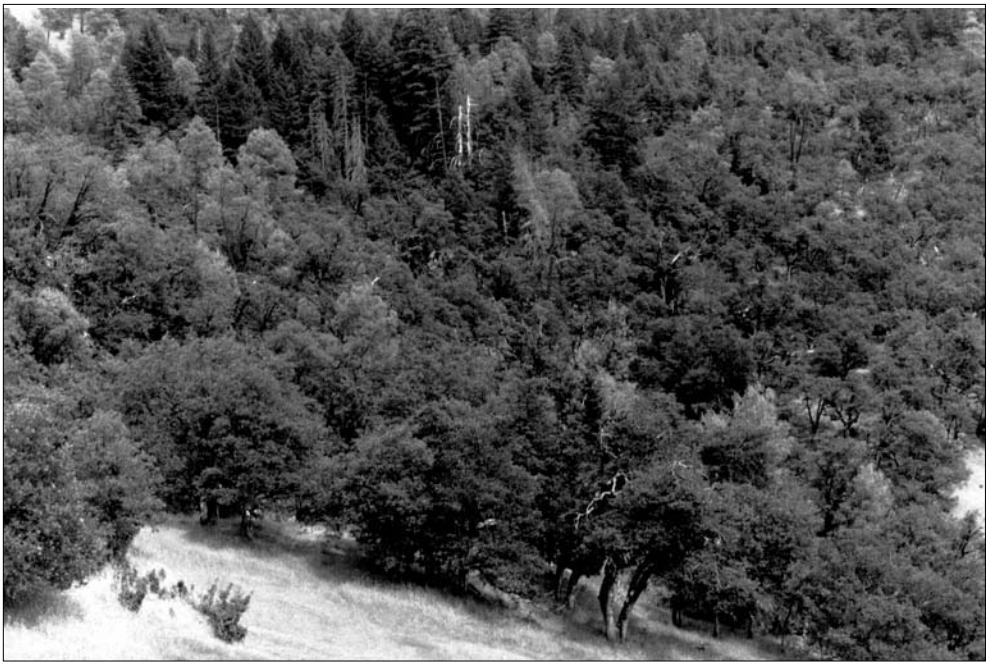
white oaks with younger, faster-growing foothill pines overtopping the oaks. A small number of young Douglas-fir also occur. Oregon white oak 3.5-6.3 inches (9-16 cm) dbh dominate with 300-590 individuals/ha. Foothill pine is substantially less dense, with most individuals in the smaller size classes, 0-3.5 inches (0-9 cm) dbh, but with occasional individuals (<50/ha) 22-25 inches (56-64 cm) dbh. California black oak (*Quercus kelloggii*), canyon live oak (*Q. chrysolepis*), and Douglas-fir are scattered and of low cover and density. Canopy cover on three plots is estimated at 70 percent. Shrub and herb layers are well-developed and include *Toxicodendron diversilobum*, *Elymus glaucus*, *Clarkia* sp., *Agoseris apargioides*, *Brodiaea laxa*, and *Arctostaphylos canescens*.

Upland Douglas-Fir (82420): Douglas-fir dominates with California black oak, Pacific madrone (*Arbutus menziesii*), ponderosa pine (*Pinus ponderosa*), sugar pine (*Pinus lambertiana*), and Oregon white oak. Much of the understory is covered with litter and duff. The shrub and herb layers are sparse. This association is most extensive on the main ridgeline along the E. boundary and on smaller ridgelines with well-developed, deep soils. Two types of this forest are described.

The climax type is exclusively dominated by Douglas-fir. The sparse understory is made up of *Toxicodendron diversilobum*, *Hieracium albiflorum*, *Cacaliopsis nardosmia*, and *Viola* sp. The largest Douglas-fir are between 31 and 35 inches (80-88 cm) dbh, but the majority are seedlings (330/ha) or in the 0- to 3.5-inch (0- to 9-cm) dbh size class (380/ha).

The late-successional type is successional from oak woodland to Douglas-fir forest. Here, Oregon white oak has been overtopped by Douglas-fir. Seedlings and saplings of Douglas-fir are abundant (670/ha in 0- to 9-cm size class). Shrub and herb layers are diverse, a carryover from the oak woodland which preceded it. Understory species include *Cynosurus echinatus*, *Arctostaphylos manzanita*, *Clarkia* spp., *Cynoglossum occidentale*, and *Eriophyllum lanatum*.

Figure 164—Soldier, view of Oregon white oak – foothill pine in the Soldier rRNA with a small "island" of Douglas-fir in the upper left. (1987)



Oregon White Oak, Dense Stands (71110): This association consists of dense, small-diameter, nearly pure Oregon white oak stands about 20-26 ft (6-8 m) tall. The canopy is nearly closed. Minor tree associates include Douglas-fir, California black oak, and foothill pine. Foothill pine and Douglas-fir are of approximately equal frequency. Some shrubs and herbs here also occur in Douglas-fir forest, while some occur in Oregon white oak-foothill pine forest. The most abundant shrub is *Toxicodendron diversilobum*. Others include *Cercocarpus betuloides*, *Arctostaphylos manzanita*, and shrubby canyon live oak. Herbs include *Cynosurus echinatus*, *Brodiaea* sp., *Elymus glaucus*, *Silene californica*, *Agoseris* sp., and *Ranunculus* sp.

Grassland (42200 and 41200): Grassland occurs mainly on the lower, steep S.- or W.-facing slopes on soils high in clay and prone to slumping. The local grassland is a mixture of non-native annual grassland and bald-hills prairie. Dominants include *Bromus mollis*, *B. diandrus*, *Avena barbata*, *Cynosurus echinatus*, *Festuca* spp., *Melica californica*, *Poa scabrella*, *Elymus glaucus*, and *Stipa lemmonii*.

Plant Diversity

One hundred fifty-seven taxa of vascular plants are listed.

Conflicting impacts

Fire likely will be necessary to maintain or enlarge the cover of the target element. Little is known about the requirements of the Oregon white oak association. Thus, management of the target element will require some research.