

33. Grizzly Mountain (Big Grizzly Mountain) (Petersen 1994b, Keeler-Wolf 1987a)

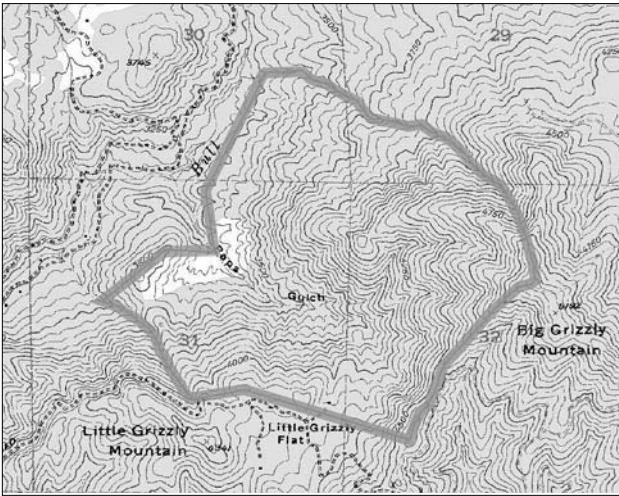


Figure 68—Grizzly Mountain RNA

Location

This established RNA is on the Stanislaus National Forest and is about 8 miles (13 km) NW. of El Portal, the entrance to Yosemite National Park. The area lies within portions of sects. 29, 30, 31, and 32 of T2S, R19E MDBM (37°42'N., 119°55'W.), USGS Kinsley quad (fig. 68). Ecological subsection – Upper Foothills Metamorphic Belt (M261Eg).

Target Element

California Black Oak (*Quercus kelloggii*)

Distinctive Features

Fire History and California Black Oak Forest Structure: The California black oak is fire-adapted

and has burned locally several times in the recent past. The most recent fire, in September 1987, affected most of the area. The fieldwork for the ecological survey took place one year before this burn; hence the opportunity exists for pre- and post-fire study.

Analysis of charred and fire-scarred stems of oaks and other trees indicates that there was a major fire in the mid-1930s. This fire burned the N. slopes of Big Grizzly Mountain more completely than the N. slopes of Little Grizzly Mountain. Hence, survivor stems of black oak (up to 31 inches, 79 cm dbh) were found in the latter locality as well as several ponderosa pines (*Pinus ponderosa*) and incense-cedar (*Libocedrus decurrens*) that pre-dated the 1930s. Before the 1930s, the last fire appears to have occurred about 1885. Thus, the Big Grizzly area has had a major fire on average of once every 50 years for the past 100 years. It is likely that fires have maintained the California black oak forest in this area for centuries.

Comparisons with Other California Black Oak RNAs: Several other areas in California have been selected to represent this target element (Devil's Rock-Hosselkus, Devil's Basin, and Cahuilla Mountain). Each of these areas has unique features but also many similarities. Compared to the others, Grizzly Mountain has the largest percentage of its area dominated by California black oak. It also has a relatively uniform stocking and cover of California black oak, making it less variable than the other areas. The local forest is restricted to N. exposures, whereas Devil's Rock-Hosselkus has largely S. and W. and Cahuilla Mountain has W. and E. exposures. The confined distribution of forest on N. exposures at Grizzly Mountain may be related to the fact that the Grizzly Mountain area receives less summer moisture than the other two sites. *Toxicodendron diversilobum* dominates the understory at most sites, and a number of other species of herbs are shared between the sites.

Rare Plants: Three rare species may possibly occur here. Congdon's woolly sunflower (*Eriophyllum congdonii*, CNPS 1B, State-listed rare species), slender-stemmed monkey-flower (*Mimulus filicaulis*, CNPS 1B), and Small's southern clarkia (*Clarkia australis*, CNPS 1B) have been sighted near the boundaries of this RNA.

Physical Characteristics

The area covers about 668 acres (270 ha) on the N. slopes of Big and Little Grizzly mountains, which are separated by a small canyon with an intermittent stream (Paps Gulch). Elevations range from 3200 ft (975 m) in Paps Gulch to about 5192 ft (1583 m) at the summit of Big Grizzly Mountain. Slopes are moderate throughout the lower elevations, steeper at mid-elevations, and become moderate again at the upper elevations. Exposure is generally N. with some S.- and W.-facing slopes in Paps Gulch.

Rocks are mesozoic granitics of the Sierra Nevada Batholith and shaley to schistose Paleozoic metasediments. Gneissic intergrades between granite and metamorphics occur on upper Big Grizzly Mountain. Two soil mapping units occur. These are the Josephine family, moderately deep Dystric Lithic Xerochrepts association derived from metasediments, and the granitically derived Lithic Xerumbrepts-Holland family deep association. Precipitation averages about 60 inches (1524 mm) annually with very little between April and October. Estimated mean annual temperatures range from 51.4 to 53.6 °F (10.8-12 °C) with January means from 35.1 to 37.2 °F (1.7-2.9 °C) and July means from 69.4 to 71.6 °F (20.8-22 °C).

Association Types

Twenty 100-m² plots were sampled in the California black oak forest.

California Black Oak Forest (71120, 81340): 395 acres (160 ha). California black oak strongly dominates, with an average of 1090 stems/ha (relative density 85 percent). California black oak has highest frequency, density, and basal area cover (importance value 230.3). Only occasional small trees of ponderosa pine, incense-cedar, knobcone pine (*Pinus attenuata*), canyon live oak (*Quercus chrysolepis*), and California bay (*Umbellularia californica*) occur. California black oak cover averages 49 m²/ha (89 percent relative cover). As a result of a fire in the mid-1930s, most stems of black oak are of uniform dimensions, averaging 10 inches (25 cm) dbh, 45 ft (14 m) tall, and 3.5 stems per resprout clump (fig. 69). Seedlings of California black oak are abundant; however, saplings and young trees are rare.

The shrub layer is strongly dominated by *Toxicodendron diversilobum*, averaging 35 percent cover. *Ribes roezlii*, *Chamaebatia foliolosa*, and *Rubus glaucifolius* occur irregularly along with five other shrub species. Herbs are uncommon except for *Clarkia unguiculata* and *Dryopteris arguta*. Twenty-four other species occur as trace

cover on fewer than 50 percent of the plots. The understory is conspicuously affected by density of oak canopy, with the occasional small opening having a grassy understory including *Achillea millefolium*, *Bromus tectorum*, *Calochortus venustus*, *Centaurea melitensis*, *Clarkia rhomboidea*, *Daucus pusillus*, *Festuca pacifica*, *Madia elegans*, *Plectritis* sp., *Rumex angiocarpus*, and *Trifolium microcephalum*.



Openings in the rocky upper elevations near the summit of Big Grizzly Mountain house several native perennials including *Melica aristida*, *Koeleria macrantha*, *Bromus carinatus*, *Calochortus venustus*, *Arabis* sp., and *Stipa lemmonii*.

Ponderosa Pine Forest (84210): 143 acres (58 ha). Small lobes of ponderosa pine forest extend into the lower portion of the area on deep soils. This forest also burned in the 1930s, and trees are uniformly young with average dimensions of 19 inches (48 cm) dbh and 66 ft (20 m) height. Other trees are sparse and include scattered young incense-cedar, which may have colonized later than the pines. There are also occasional knobcone pine, California black oak, canyon live oak, and California bay. The understory is sparse, with scattered senescent chaparral shrubs. In small openings, such understory species as *Dichelostemma volubilis*, *Agoseris grandiflora*, *Calochortus* sp., *Bromus tectorum*, *Calystegia* sp., *Hieracium albiflorum*, *Trifolium microcephalum*, *Vicia americana*, *Pteridium aquilinum*, and *Lupinus* sp. occur.

Chaparral (37110, 37520, 37810): 87 acres (35 ha). This type covers the S. exposures of upper Paps Gulch. *Arctostaphylos mariposa* marginally dominates with *Ceanothus cuneatus* as the major subdominant. Shrubby canyon live oak is important, particularly on SW. exposures. The dispersion of *A. mariposa* is fairly uniform, but *C. cuneatus* is more clumped with occasional small pockets of dominance. Occasional snags and a relatively large number of ponderosa pine at the upper reaches of the chaparral suggest that at least portions of this type may have been an open ponderosa pine-dominated forest before the mid-1930s fire.

Canyon Live Oak Forest-Woodland (81320): 43 acres (17 ha). Canyon live oak dominates small areas on steep, concave N. slopes. These forests contain trees of similar age and diameter to surrounding California black oak forest, but are typically up to 15 ft (5 m) shorter (30-35 ft, or 9-11 m tall). The understory is rockier than in California black oak forest, but still dominated by *Toxicodendron*. On shallow soils with a SW. exposure, canyon live oak forms a shrubby woodland mixed with chaparral shrubs such as *Arctostaphylos mariposa* and *Ceanothus cuneatus*.

Riparian (61510): No acreage given. The lower part of Paps Gulch has permanent moisture and some associated riparian growth. This includes white alder (*Alnus rhombifolia*) in the overstory, with an understory of *Rubus laciniatus*, *R. ursinus*, *Urtica holosericea*, *Artemisia douglasiana*, *Ribes nevadense*, *Rumex californicus*, *Woodwardia fimbriata*, *Vitis californica*, *Datisca glomerata*, and *Aquilegia formosa*.

Plant Diversity

Ninety taxa are listed.

Conflicting Impacts

In general, human impact has been slight in the area. However, prior use by Miwok Indians may have been relatively heavy. Several inventoried archeological sites are in and adjacent to the area. The 1987 fire greatly altered the vegetation from the type discussed in the survey. However, this is a natural occurrence and will allow a great deal to be learned about succession in, and stability of, this forest type. Portions of the ponderosa pine forest were thinned around 1976. An overgrown, unused jeep road barely enters the N. part of the area at Paps Gulch.