

23. Devil's Basin (Martin 1995, Newton 1987)

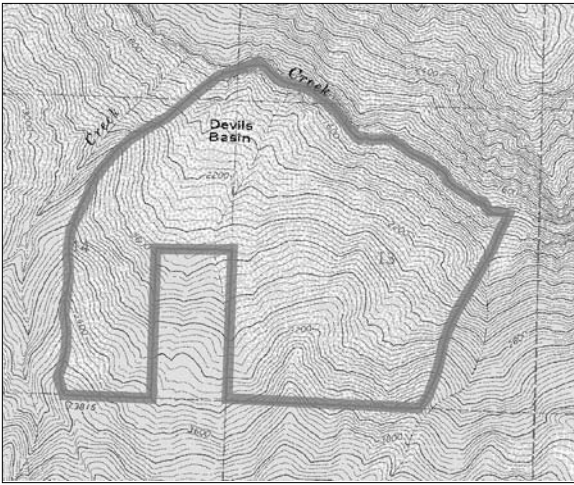


Figure 47—Devil's Basin RNA

Location

This established RNA is on the Mendocino National Forest and is located about 10 miles (16 km) SW. of the town of Paskenta in Tehama County. It includes parts of sects. 11, 12, 13, and 14 T23N, R8W MDBM (39°50'N., 122°43'W.), USGS Hall Ridge quad (*fig. 47*). Ecological subsection – Eastern Franciscan (M261Ba).

Target Element

California Black Oak (*Quercus kelloggii*)

Distinguishing Features

Diversity of Black Oak Types: The presence of relatively young and mature California black oak stands in addition to mixed stands with Douglas-fir (*Pseudotsuga menziesii*) and ponderosa pine (*Pinus*

ponderosa) provides a varied background for an array of ecological studies on the California black oak target element. The Devil's Basin California black oak stands are within the range of optimum development of the forest type in California.

Wildlife Values: California black oak is an important source of food for a variety of acorn-consuming vertebrates including black-tailed deer (*Odocoileus hemionus columbianus*), mountain quail (*Oreortyx pictus*), California quail (*Callipepla californica*), band-tailed pigeon (*Columba fasciata*), and gray squirrel (*Sciurus griseus*). The older stands of black oak in the area are probably near peak acorn-producing capability and thus serve as important resources to a large number of animals.

Rare Plant: California black walnut (*Juglans hindsii*) is a member of CNPS list 1B. The local individuals may be naturalized from planted trees.

Physical Characteristics

The area covers 671 acres (272 ha). Elevations range from 1400 to 3660 ft (427-1116 m). Topography is rugged, with steep N.- to NE.-facing slopes predominating (*fig. 48*). The area is centered on the toe of an ancient slope failure and includes surrounding steep to moderately steep slopes and ridgelines. Slope instability is prevalent throughout much of the steeper areas.

Rocks are entirely Franciscan assemblage and are locally schistose metasediments. Soil series are of two main types: Tyson (poorest sites, with canyon live oak) and Sheetiron (better sites; with California black oak and Douglas-fir). Small portions of Laughlin series (blue oak savanna) and Hulls series occur, as well as small areas of rock-land and colluvial soils. Climate is mild, with estimated mean annual precipitation of 30+ inches (762+ mm). Mean summer temperature maxima are slightly over 100 °F (38 °C), whereas mean winter minima are 28 to 30 °F (-2 to -1 °C) at lower elevations.

Association Types

The size of the associations and the numbers and sizes of plots and relevés are not given.

California Black Oak/*Festuca californica* (71120): The California black oak-dominated forest at the site is composed of both persistent subclimax stands and seral stages, successional to Douglas-fir-dominated forest. These forests may be divided into young and old stands.

The young stands have 60 percent canopy cover dominated by California black oak, with occasional Douglas-fir and canyon live oak (*Quercus chrysolepis*). California black oak reproduction is low, but widespread. This is primarily a young black oak forest, showing little evidence of succession to Douglas-fir dominance. Most oaks are 60-70 years old (4-8 inches, 10-20 cm dbh) with 23-30 m²/ha basal area. Shrubs in the young stands are dominated by *Toxicodendron diversilobum*, with *Rhus trilobata* and *Cercis occidentalis* as secondary species. The herb layer (15-30 percent cover) is dominated by *Festuca californica* with *Galium triflorum*, *Lathyrus nevadensis*, *Silene californica*, and *Chlorogalum pomeridianum*.

The more mature stands are variable in canopy cover (50-90 percent) and dominated by California black oak, with some ponderosa pine and Douglas-fir. Reproduction of all canopy species is present with black oak saplings and seedlings covering up to 20 percent. Basal area cover ranges from 14.5 to 82.6 m²/ha, and trees range from 70 to 120+ years (8-30 inches, 20-76 cm dbh). The shrub layer (5-20 percent cover) is more diverse than in younger stands. In addition to the previously mentioned shrubs, *Cercocarpus betuloides* and *Ribes roezlii* also occur. The herb layer is much more diverse than in young stands (with often 60 percent cover). It is dominated by *Festuca californica* but also includes *Trientalis latifolia*, *Osmorhiza chilensis*, *Bromus mollis*, *Collinsia sparsiflora*, *Galium bolanderi*, *Monardella villosa*, *Wyethia angustifolia*, *Viola sheltonii*, *Asclepias cordifolia*, *Delphinium nudicaule*, *Dichelostemma* (*Brodiaea*) *multiflora*, and *D. pulchella*.

Douglas-Fir/Mahonia (*Berberis*) *dictyota* (84110): The upper canopy of this forest is open (20 percent cover) and dominated by Douglas-fir, with smaller amounts of ponderosa and knobcone pine (*Pinus attenuata*). The subcanopy averages 70 percent cover; it is 50-70 ft (15-21 m) tall and dominated by California black oak. Reproduction of both major trees is low. Basal area averages 50.5 m²/ha, with trees averaging 150-200 years old. Shrub and herb layers are low in cover (10 percent). *Berberis dictyota*, *Cynoglossum grande*, *Osmorhiza chilensis*, *Galium triflorum*, *Viola sheltonii*, and *Symphoricarpos mollis* are the principal understory species.

Blue Oak (*Quercus douglasii*)/*Stipa lemmonii* (71140): This blue oak savanna has an open canopy (5 percent cover) dominated by blue oak about 50 ft (15 m) tall and 100 years old, with some Oregon white oak (*Quercus garryana*) interspersed. Basal cover averages about 9.2 m²/ha. No shrubs occur, and the herb layer (100 percent cover) is dominated by a mixture of native and introduced species including *Stipa lemmonii*, *Aira caryophyllea*, *Avena barbata*, *Bromus mollis*, *B. rubens*, *Melica hartfordii*, *Vulpia* (*Festuca*) *microstachys* var. *ciliata*, *V. myuros* var. *hirsuta*, *Eriogonum nudum*, *Delphinium hesperium*, *Torilis arvensis*, *Thysanocarpus curvipes*, *Trifolium albopurpureum*, and *T. ciliolatum*.

Canyon Live Oak/*Sedum* sp. (81320): This forest occurs on the poorest sites (steep, rocky slopes). Canopy height averages 60 ft (18 m); it is dominated by multiple-trunked canyon live oak. California buckeye (*Aesculus californica*) and a few California bay (*Umbellularia californica*) are also present. Reproduction of canyon live oak is occasional. Shrub and herb layers are variable (10-90 percent) depending on canopy openness and slope characteristics. Shrubs range from 5 to

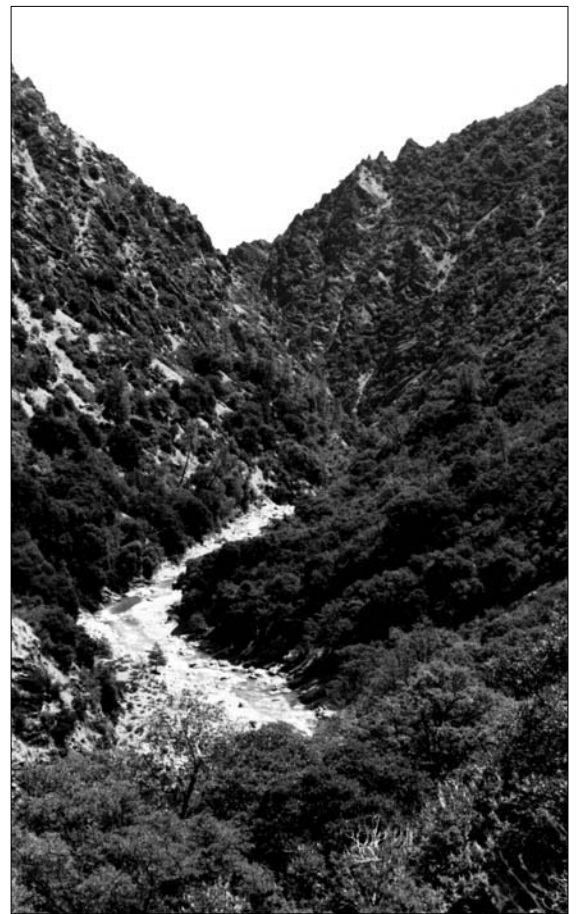


Figure 48—Devil's Basin, view east down Thomes Creek gorge, canyon live oak forest in middle-ground, mixed California black oak and buckeye brush in foreground. (1986)

30 ft (1.5-9.1 m) tall and include *Toxicodendron diversilobum*, *Cercocarpus betuloides*, and shrubby California black walnut. Herbs include *Sedum* sp., *Galium bolanderi*, *Dichelostemma* (*Brodiaea*) *volubilis*, and, in some areas with better soil development, grasses similar to those of the blue oak savanna.

***Quercus dumosa*/California buckeye (37110):** This brushy woodland type has a very low canopy cover (<5 percent). Canopy species include sparse foothill pine (*Pinus sabiniana*) up to 50 ft (15 m) tall with occasional black oak and canyon live oak. Shrubby trees of the two canopy oaks and of California buckeye are fairly common. Shrubs are dense (90 percent cover) and dominated by *Quercus dumosa*, along with *Cercocarpus betuloides*, *Toxicodendron diversilobum*, *Rhus trilobata*, *Adenostoma fasciculatum*, *Ceanothus integerrimus*, and *Heteromeles arbutifolia*. Herbs are generally low in cover and include *Festuca californica*, *Trientalis latifolia*, and *Dichelostemma volubilis*.

Plant Diversity

One hundred forty-five species are listed.

Conflicting Impacts

Controlled burning may be necessary to maintain black oak stands on better sites where succession may lead to conifer dominance. The area is within the Thomes Creek Roadless Area, and little human impact is apparent.