

6. Backbone Creek (no ecological survey, Clines 1994, Pacific Southwest Forest and Range Experiment Station 1970)

Location

This established RNA lies within the Sierra National Forest, approximately 1.5 miles (2.4 km) N. of the town Auberry in Fresno County. The RNA comprises portions of sections 32 and 33 in T9S, R23E MDM (37°07'N., 119°31'W.), USGS Shaver Lake 15' quad (fig. 12). Ecological subsection – Lower Granitic Foothills (M261Fc).

Target Element

Carpenteria californica

Distinctive Features

***Carpenteria californica*:** This rare native California shrub is the primary reason for establishing this RNA. This species is of interest not only in terms of its limited natural range (Clines 1994), about 225 square miles (585 km²), but also in terms of its taxonomy. *Carpenteria* evolved in this region of the Sierra National Forest and is taxonomically unique; only one species is in this genus. In the Jepson Manual (Hickman 1993), it is placed in the family of *Philadelphaceae*, but other floras have placed it in the *Saxifragaceae* (Munz and Keck 1959) or *Hydrangeaceae* (Abrams 1944). Some scientists consider it a primitive link between two main orders of flowering plants: the *Rosales* and *Violales*. Because it has survived over the geologic ages, it is a relict species (Wickenheiser 1989).

Unique Ecosystem of Native Shrubs: Along with *Carpenteria californica*, included in this RNA are numerous other native California shrubs, such as *Aesculus californica*, *Cercis occidentalis*, *Dendromecon rigida*, and *Fremontia californica*. Together, they are an unusual variation of the woodland/chaparral vegetation commonly observed in the foothills (fig. 13).

Rare Flora: *Carpenteria californica* (State-listed endangered species, CNPS 1B)

Physical Characteristics

The RNA covers 430 acres (174 ha), and the elevations range from 1250 to 2400 ft (381-731 m).

With the San Joaquin River as the N. boundary, the RNA consists mainly of N.-facing slopes. Three intermittent streams dissect the area. Soils of the RNA are all of the Auberry series: they are noncalic brown soils, a fine-loamy, mixed, thermic family of ultic haploxerales. The surface soil is grayish brown, slightly acid, coarse sandy loam; the subsoil is brown, strongly acid, sandy clay loam, overlying on weathered acid igneous bedrock. The annual precipitation is approximately 25 inches (6361 mm).

Association Types

Interior Live Oak Chaparral (37A00): The whole RNA can be classified into this type, although the classification does not depict the unique presence of *Carpenteria californica*. Within the RNA, there are approximately 262 acres (106 ha) of scattered thickets, mostly of *Carpenteria*, as well as an abundance of associated shrub species common to the area. Major species are *Aesculus californica*, *Carpenteria californica*, *Cercis occidentalis*, *Dendromecon rigida*, *Fremontia californica*, *Quercus wislizenii*, and *Pinus sabiniana*.

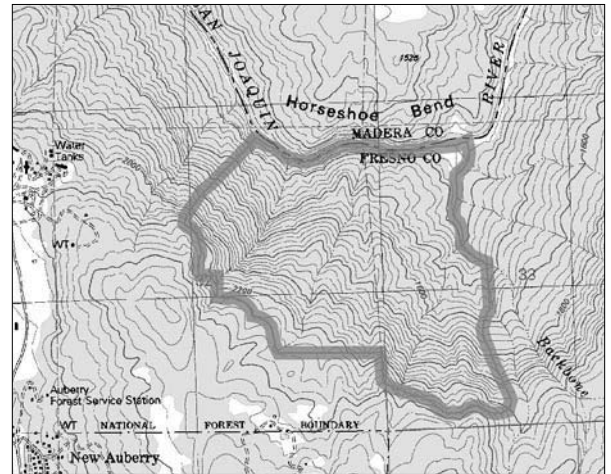


Figure 12—
Backbone Creek
RNA

Fire History

A fire occurred in July 1989.

Plant Diversity

Twenty-two taxa are listed in a preliminary study for the Forest Service Multiple Use Plan in 1971.

Conflicting Impacts

Trampling by cattle posed a tremendous problem for seedling establishment after the fire in 1989. A fence built on the E. boundary of the RNA corrected the problem.

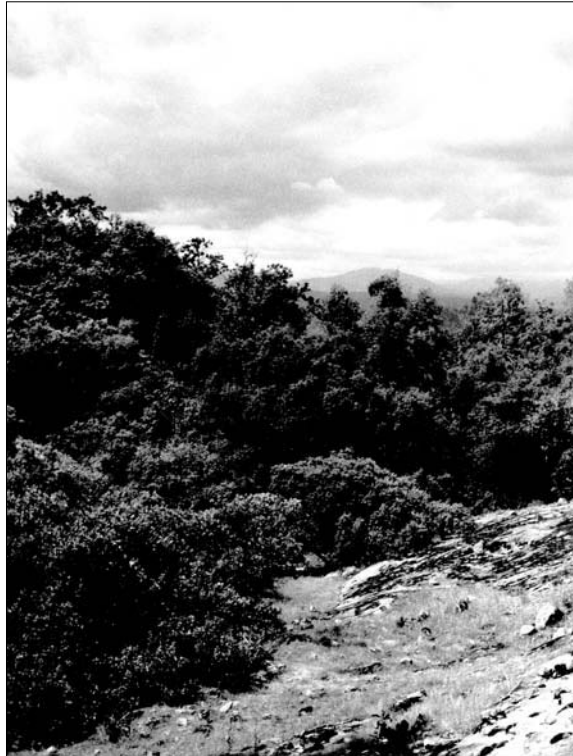


Figure 13—Backbone Creek, typical view of Backbone Creek RNA, *Arctostaphylos manzanita* in the foreground, various scrub oaks in background. Note granite outcrop. (around 1970)