



## Research Brief for Resource Managers

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## Early 20<sup>th</sup> Century Perspective on California Chaparral

*Cooper, W. S. 1922. The broad-sclerophyll vegetation of California: An ecological study of the chaparral and its related communities. Carnegie Institution of Washington, Publication No. 319. 122p.*

Chaparral is a uniquely Californian vegetation, covering southern California, the lower and middle altitudes of the Sierra Nevada, as well as much of the Coast Ranges. According to William Cooper and colleagues such as Clinton Merriam and Willis Jepson, by the beginning of the 20<sup>th</sup> century chaparral inhabited only a fraction of its original range. This turn-of-the-century publication is the first and most complete natural history of chaparral and its relationship to fire. It incorporates much of Cooper's own original data and observations along with the ideas of many of his peers.

Cooper described two 'climax' communities: chaparral and broad-sclerophyll chaparral, both comprising sclerophyll-leaved shrubs. These climax communities are two of California's six recognized climax communities of the time, also known as formations. The other four were: the Pacific conifer climax formation, the conifer climax formation, the subalpine conifer climax formation, and the alpine meadow climax formation. It was William Cooper's firm opinion that annual grassland is just a human-induced, secondary succession state of previously broad-sclerophyll chaparral and not a natural climax community.

### Management Implications

- Infrequent fire favors chaparral, while frequent fire favors type conversion to grassland.
- Because chaparral had effectively been cleared and burned for so many human generations, first by the aboriginal people, and then by cattlemen, the original extent of chaparral is unknown. Cooper suggests that its current range is only a fraction of its former, pre-human range.

According to Cooper, examples of primary succession by broad-sclerophyll formations are limited, as most is secondary following burning. Cooper unequivocally states that chaparral clearing for firewood and cultivation through repeated burning had effectively reduced the chaparral climax community to a tiny portion of its former California range. He says that, in effect, the climax chaparral has moved into northern forests and the mesophytic borders as a result of fire, while it has also been pushed out of the south along xerophytic borders consisting of grasses and coastal sagebrush. He argues that these changes began with the entry of the earliest humans into California at the end of the Pleistocene and have continued to the present.