



## Research Brief for Resource Managers

**Release:**

February 2012

**Contact:**

Jon E. Keeley  
Marti Witter  
Liz van Mantgem

**Phone:**

(559) 565-3170  
(805) 370-2333

**Email:**

[jon\\_keeley@usgs.gov](mailto:jon_keeley@usgs.gov)  
[Marti\\_Witter@nps.gov](mailto:Marti_Witter@nps.gov)  
[evanmantgem@usgs.gov](mailto:evanmantgem@usgs.gov)

Central and Southern California Team, USGS Sequoia and Kings Canyon Field Station, Three Rivers, CA 93271

## Grazing Keeps the Chaparral Out

Johnson, W. H. 1990. Grazing helps maintain brush growth on cleared land. *California Agriculture* 44(5):31-32.

Ranchers remove chaparral and replace it with grassland for many reasons. Besides the main objective to improve livestock forage, other reasons given for type conversion to grassland have been increased fire control, reduced soil erosion, increased water yield, and improved wildlife habitat. Here, Walter Johnson observes the effects of 20 years of grazing and browsing by cattle and deer on chaparral re-growth in the Sierra Nevada foothills. He found that grazing by both deer and cattle slowed the regrowth of brush (chaparral) and postponed the need for follow-up mechanical, chemical, or burning treatments.

In 1969, on a chaparral dominated landscape east of Redding at 2,200 feet, a 0.9 acre CDF enclosure was established on a previously grazed clearing that had been bulldozed and seeded with clovers and Harding grass in 1960. One of the enclosures was closed to cattle but not to deer. The other excluded both cattle and deer with an 8 ft. high woven wire fence. Plant composition was recorded at the beginning of the experiment and then again 20 years later in 1989.

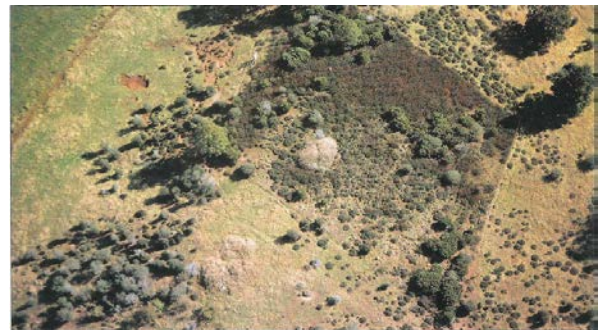
After 16 years the exclusion of deer and cattle resulted in the site being once again dominated by chaparral. In this enclosure shrub cover increased from 40% to 73%. Herbaceous species declined over this period from 52% to 15% cover. Chaparral recolonized to a lesser degree where only cattle were excluded, with shrubs increasing from 32% to 48% and less herbaceous species

### Management Implications

- Regular grazing slows chaparral regrowth and can eventually eliminate some shrub species.
- When grazing is reduced or eliminated **from previously disturbed sites**, non-native weed species may become established.

decline. The reduced shrub cover in the open area compared to the enclosures was due to both fewer and smaller shrubs.

Only the unenclosed grazed and browsed areas maintained enough herbaceous forage to support both deer and cattle. On these open sites the invasive Klamath weed (*Hypericum perforatum*) was not present but it increased in both enclosures.



**Figure 1.** Enclosure that excluded cattle and deer (upper middle) adjacent to enclosure that only kept out cattle surrounded by open grazing area.