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Lynn Huntsinger  
*University of California, Berkeley*

Larry C. Forero  
*University of California, Davis*

Adriana Sulak  
*University of California, Berkeley*

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## The decline of transhumance in the west and the implications for private grazing lands : California case studies

Lynn Huntsinger<sup>1</sup>, Larry C. Forero<sup>2</sup>, and Adriana Sulak<sup>1</sup>

<sup>1</sup>Environmental Science, Policy, and Management, 137 Mulford Hall MC 3110, University of California, Berkeley, CA 94720 USA, [huntsinger@berkeley.edu](mailto:huntsinger@berkeley.edu); <sup>2</sup>County Director, Shasta County UC Cooperative Extension, 1851 Hartnell Ave. Redding, CA 96002-2217 USA, [lforero@ucdavis.edu](mailto:lforero@ucdavis.edu).

**Key words** : Forest Service, grazing, ranchers, AUMs

**Introduction** The interaction of an arid, topographically complex landscape, colonial and imperialistic aspirations, and the framework of land tenure institutions available to enterprising settlers shaped land ownership patterns in the western US. The resulting improvisation, together with changes in the cost and supply of alternative modes of production and uncontrolled urban sprawl, underlies the decline and loss of traditional transhumance systems of livestock production, particularly cattle production, in the latter half of the twentieth century. The Forest Service manages grazing leases on the majority of high elevation rangelands, and allowed grazing has been declining since the 1920's. There is more than nostalgia for what in comparison to Europe and other parts of the world was in the U.S. a short-lived tradition. A declining ability to use diverse rangelands through transhumance is a problem for ranchers, but also for land conservationists and ecosystem managers. Rancher transhumance depends on linking private and public ecosystems in a cycle of production, and this connection is being broken. This paper focuses on the relationships with and consequences for private rangelands. Private rangelands are generally on better soils and have more water, and have been shown to in many cases have higher biodiversity and other values than public rangelands (Maestas et al. 2001).

**Methods** Forest Service grazing was used as a proxy for transhumance grazing. Records were reviewed for the western U.S. Ranchers in two case study areas were surveyed and interviewed (Sulak 2007; Forero 2002). Meticulous review of grazing records was conducted in the northern study area. Study areas are California's west-central Sierra Nevada foothills and northern Sacramento Valley foothills.

**Results** Cattle grazing authorized by the Forest Service in the western regions declined from 7.1m AUMs in 2000 to 4.7m AUMs in 2005. Ranchers in case study areas attributed close to half their income to use of Forest Service administrated range. Many work off the ranch and most of them have household members working off the ranch, which can make it more difficult to participate in transhumance. Ranchers with Forest Service grazing permits are different from those without such permits in a number of ways. Their land tenure has been more stable, and they report that they have been affected more by land use, vegetation, and community change. North Sacramento Valley ranchers who lost their permits generally saw their ranches become smaller. The ranches with permits retained more land, and more livestock, than those who gave up permits. In the Sierra, most ranchers had increased their privately-leased land in the last 5 years. In both study areas ranchers are active seekers of the available private forage for lease, with nearly all of them leasing some land and in some cases, managing multiple leases in order to support a viable herd. Vegetation change coupled with fire suppression has been another important factor in the decline in California Forest Service rangeland productivity. Over time in the northern Sacramento Valley, and in many other areas, the numbers of animals using Forest Service rangelands, and the amount of time they are allowed to spend on public rangelands, has declined.

**Conclusions** Forest Service grazing permits historically have contributed to tenure stability on associated private lands by providing a relatively stable source of upland forage at a reasonable cost. However, as there is increased development pressure on the private lands, we are concerned that because of growing insecurity of access to public lands, owners of private lands may be less likely to enter into long-term conservation contracts. Ranches that lose permits may be more likely to sell their properties, and without a permit, they may lose viability as an economic unit for livestock production, making them more likely to be developed for housing. In the southwestern United States, easements that consider the reliance of ranchers on public land have been created and deserve further study.

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