

Reining in the ecological effects of free-roaming horses

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Free-roaming horses are an icon of the American West, frequently appearing in art and media as exemplars of the spirited freedom that underlies the region's folklore. Viewed through an ecological lens, however, these animals may present a different picture—one of degraded landscapes and shrinking biodiversity.

Writing in *BioScience*, Kirk W. Davies and Chad S. Boyd describe the ecological threats posed by free-roaming horses in the US West and the challenges faced in managing them. According to the authors, the effects of these horses are extensive, ranging from soil compaction and domination of scarce water resources to the over-grazing of native plant species.

Davies and Boyd catalog the numerous effects on local landscapes, pointing to a study that found that "areas from which horses had been excluded compared with horse-occupied areas in Great Basin uplands had two to three times greater native grass cover and frequency." As a result, the authors caution, "free-roaming-horse use over time could permanently affect the productivity and function of some areas." In addition, horses have numerous effects on local fauna, and the authors note that "horses have repeatedly been shown to limit and even exclude [native wildlife](#)'s use of water sources."

The authors point out that the problem is vast, with free-roaming horses and burros occupying 31.6 million acres of federal lands, with a population of 81,951 animals, exceeding the Bureau of Land

Management's established "appropriate management level" by more than 55,000 individuals. Further complicating matters is the uncertainty that beleaguers attempts to understand the horses' effects. The authors note that "domestic livestock grazing often confounds the ecological effects of free-roaming-horse grazing, giving rise to considerable uncertainty regarding the full extent and degree of impact of horses on rangeland ecological processes." The authors draw clear distinction between continuous year-around grazing by free-roaming horses and planned grazing by livestock, which is comparatively limited in duration, takes place during a specific season, and allows for periodic rest. But the uncertainty, caution Davies and Boyd, makes managing horse population challenging, especially in light of free-roaming horses' prominent place in the public's imagination. Horse populations are growing at a mean average rate of 20 percent per year, and public resistance to horse removal has thus far stymied efforts to address their rising numbers.

The solution the authors pose is rigorous ecological research with an eye toward promoting sociopolitical change. It is Davies and Boyd's expressed hope that "change in the sociopolitical arena around free-roaming horses can be stimulated by rigorous ecological research and using that research to inform scientifically sound management of free-roaming [horses](#)." Through this, they argue, it may be possible to address the far-ranging effects of this charismatic but ecologically imposing species.

More information: Kirk W Davies et al, Ecological Effects of Free-Roaming Horses in North American Rangelands, *BioScience* (2019).
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