Summer, 2017

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Summer, 2017 In This Issue

Upcoming Events

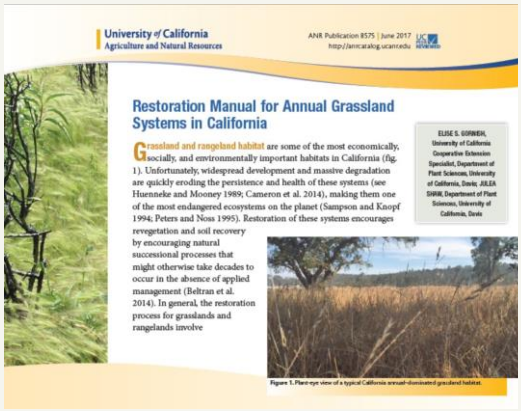
WORKSHOP:
MAINTAINING AND IMPROVING RURAL ROADS
A workshop for ranchers, rural residents, non-profit organizations and agencies responsible for

maintaining and improving generally unpaved roads accommodating resource management, residential and recreational users.

Cost: **$10.00** plus a nominal registration fee.
When: 9:00 a.m. - 3:00 p.m.
Where: Morgan Hill Community Center
17009 Monterey Road, Morgan Hill
REGISTER HERE.

FOLLOWUP FIELD TRIP FOR MAINTAINING AND IMPROVING RURAL ROADS

Mark your calendar!


University of California
Agriculture and Natural Resources

ANR Publication 8575 | June 2017
http://anrcatalog.ucanr.edu

Restoration Manual for Annual Grassland Systems in California

Grassland and rangeland habitat are some of the most economically, socially, and environmentally important habitats in California (fig. 1). Unfortunately, widespread development and massive degradation are quickly eroding the persistence and health of these systems (see Huenneke and Mooney 1989; Cameron et al. 2014), making them one of the most endangered ecosystems on the planet (Sampson and Knopf 1994; Peters and Noss 1995). Restoration of these systems encourages revegetation and soil recovery by encouraging natural successional processes that might otherwise take decades to occur in the absence of applied management (Beltran et al. 2014). In general, the restoration process for grasslands and rangelands involve

RESTORATION MANUAL FOR ANNUAL GRASSLAND SYSTEMS IN CALIFORNIA

UC ANR Publication 8575

Restoration Manual for Annual Grassland Systems in California is a new publication that provides guidance on how to prepare a site for restoration, which native species are likely to be successful at the target site, and different revegetation techniques. Appendix A, which offers a recommended species list based on region, restoration goal and soil

NEW RESEARCH FINDING

Wolf KM, Whalen MA, Bourbour R, Baldwin R. 2017. ***Rodent, snake, and raptor activity in restored perennial native grasslands is lower than in unrestored exotic annual grasslands.*** *Journal of Applied Ecology. On-line. DOI: 10.1111/1365-2664.12990*

Abstract.

1. In California's Central Valley, most native grasslands have been destroyed or degraded due to invasion, farming, and development. Grassland restoration is often

type is particularly useful.

Although grassland restoration offers the opportunity to enhance biodiversity, pollinator and wildlife habitat, and carbon sequestration, successful grassland restoration on California's annual grassland is not only extremely challenging but also has variable impacts, see Wolfe et al. 2017. <further reading>

assumed to provide improved wildlife habitat, ostensibly increasing the abundance and diversity of at least some native wildlife species relative to unrestored, invaded annual grasslands.

2. We compared rodent, snake and raptor activity and species richness at paired unrestored and restored grasslands across four blocked locations in the Central Valley using trapping and observational surveys in up to four seasons per guild from 2014–2015. Restored treatments were planted with native perennial grasses 13–24 years prior to study initiation but were partially re-invaded by Mediterranean annual grasses and forbs. Unrestored treatments contained similar non-native plant species assemblages as restored treatments, but did not contain any native grass.

3. Rodent, snake and raptor activity was generally higher in unrestored relative to restored treatments. For rodents, the non-native Mus musculus (house mouse) showed the greatest disparity in abundance, while greater raptors and snakes likely responded to greater rodent abundance.

4. Within treatments, species-specific rodent responses were related to structure of physical vegetation. In particular, Peromyscus maniculatus (native deer mouse) was associated with more bare ground and shorter vegetation, while the house mouse was associated with less bare ground and taller vegetation, regardless of treatment type. Substantial changes in rodent species composition were observed over short periods of time (< 3 months) after unplanned manipulation of vegetation structure via livestock grazing, with patterns reflecting the species-specific response to physical vegetation structure.

5. Synthesis and applications. Our results reveal that while grassland restoration may promote persistence of native plant communities, restoration may not be beneficial to higher trophic levels, and in fact may reduce habitat value for some native predators in grasslands invaded by Mediterranean plant species. Changes in vegetation structure can strongly impact wildlife species composition, suggesting a more nuanced approach is required for the

restoration of desired wildlife communities. Thus, species-specific goals should be carefully considered to ensure improved alignment of restoration methods with expected restoration outcomes.

This newsletter is provided by the UC Cooperative Extension Natural Resources Program in the San Francisco Bay Area and provides information to managers of both public and private rangelands. RANGELAND, which is land characterized by natural vegetation i.e., grass, forbs and shrubs and managed as a natural ecosystem, is the predominate source of OPEN SPACE in the San Francisco Bay Area.
Sheila Barry, UCCE Bay Area Natural Resources/Livestock Advisor
Certified Rangeland Manager #63
sbarry@ucanr.edu 408-282-3106