

Restoration through modern interpretations of yesterday's actions

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Grazing animals have always been an integral force in changing California's landscapes. Before European settlement, large flocks of native antelope and bison species grazed in grassland habitats by continuously moving to find sufficient forage and avoid predation. Typically, these animals only clipped the tops of native bunchgrasses, then moved on to other areas. This resulted in a relatively infrequent and moderate disturbance to the landscape.

European colonization in the Nineteenth Century displaced the native grazers with millions of domestic sheep and cattle. Native antelope were eventually decimated by the sheer volume of the introduced herds. The domesticated livestock ate grass much differently than did the native animals they displaced. Cattle and sheep, unless moved frequently, will eat plants down to the ground. Domesticated animals typically stay in one place and graze continuously, never lifting their heads when they are protected from predators by people and dogs.

Fast forward to today, where Riverside County Habitat Conservation Agency (RCHCA) ecologists are experimenting with a hybridization of historical and modern grazing styles, often referred to as "targeted grazing." These scientists are using modern domesticated sheep to mimic historical antelope grazing behavior. That is to say, the sheep continuously move throughout the landscape in a manner similar to historic antelope grazing patterns.

The long-term objective is to reduce the annual nonnative Mediterranean grass seed by clipping the seed heads before seed set, eventually depleting the seed bank, thereby reducing grass density. Nonnative grasses reduce native plant cover by competing for limited resources and also persist as thick thatch layers, unlike native plants that desiccate and break up.



Sheep managed to mimic historical antelope grazing behavior

or January and removed or restricted just as the native forbs really start to flower. Of course, this also allows some grass to set seed, but such are the tradeoffs in life; so far, this one is acceptable. A careful balance must be maintained; this requires diligent care and timing by the land managers, and these factors change with each rainy season.

The results after 3 years of targeted grazing are dramatic. Previously, nonnative grass cover approached 100 percent and choked out a large portion of the native forbs and grasses. Recent vegetation monitoring demonstrates that nonnative grass cover is declining and native vegetation abundance is increasing, with only a slight loss in native richness. The most abundant natives making a comeback include tidy tips (*Layia platyglossa*), goldfields

(*Lasthenia californica*), popcorn flower (*Plagiobothrys tenellus*), *Cryptantha intermedia*, red-maids (*Calandrinia ciliata*), and *Amsinkia menziesii*, among others that are being added during the restoration. However, a few native forbs such as lupine (*Lupinus* spp.) may be declining; consequently much remains to be learned and studied. But at Lake Mathews, it is clear that habitat for endangered Stephens' kangaroo rats is increasing as grass density decreases.

As an added benefit, burrowing owls have returned and begun nesting for the first time in nearly two decades. If the owls

Nowhere is this methodology more evident than at RCHCA's land within the Lake Mathews/Estelle Mountain Ecological Reserve. This reserve was primarily established for the long-term conservation of Stephens' kangaroo rats (*Dipodomys stephensi*), an endemic, threatened California species, as well as other grassland species. RCHCA is working closely with the ovine grazers to achieve the goal of landscape conservation and the benefits of free-range food and wool production.

The optimum number of sheep per acre appears to be around five to seven but can change with the weather. The sheep are brought out beginning in December

Photo: Brian Shomo

MODERN INTERPRETATIONS, continued on page 7

Area of Critical Environmental Concern

TAKE ACTION: SAVE WALKER RIDGE

ANDREW FULKS, CNGA Board Member

Walker Ridge public lands cover an area of 14,000 acres along an 11-mile, north–south trending ridge located on the boundary of Colusa and Lake Counties, north of Highway 20 in California’s Inner Coast Range. The Ridge has significant ecological, scenic, and educational values. It is situated immediately to the west of Bear Valley—a renowned wildflower area—and immediately to the north of the Cache Creek Wilderness.

California’s Walker Ridge is cherished for its wildflower displays. It is an ecologically important site, and the California Native Plant Society (CNPS) has petitioned that it be protected as an Area of Critical Environmental Concern (ACEC) because of its many unique and rare plants. A proposed Walker Ridge Wind Project would have significant impacts to the area’s biological resources, including potential mercury and chromium contamination of water resources, and alteration of wilderness-quality lands.

Canadian developer Alta Gas Income Trust has proposed a 29-tower commercial wind development project on Walker Ridge. This would require earthmoving on a massive scale, approaching ridge-top removal. And yet, the project represents marginal wind energy potential associated with the significant level of ecological damage. Were it not for massive subsidies, this project would not be cost effective. Renewable energy is an essential part of our nation’s clean energy future, but some wild places just aren’t right for development—of any kind. In California, Walker Ridge is one such place.

The California Native Grasslands Association is concerned about the very real and substantial impacts this project will have on the rare plants inhabiting the serpentine grasslands within Walker Ridge.

CNPS has nominated the entire Walker Ridge public lands as an ACEC. An ACEC designation recognizes the special ecological, educational, recreational, and scenic values of the region. Help us support CNPS in this effort!



Clustered broomrape (*Orobanche fasciculata*) at Walker Ridge
Photo: Andrew Fulks

Take Action Today

Tell BLM to designate all of Walker Ridge as an Area of Critical Environmental Concern.

Call, or send an e-mail or letter to:

Jim Abbott, State Director
Bureau of Land Management
2800 Cottage Way, Suite W-1834
Sacramento, CA 95825
(916) 978-4600

JIM_ABBOTT@CA.BLM.GOV

MODERN INTERPRETATIONS, from page 6

successfully fledge nestlings, the first generation to be born here after being absent so long will hopefully settle and begin raising families of their own.

Surprisingly, after stripping away the nonnative grasses, the sheep revealed a previously undocumented vernal pool containing vernal pool fairy shrimp (*Branchinecta lynchi*), a species federally designated as threatened. The surprises continue as large patches of *Plantago erecta*, the host plant for the rare Quino checkerspot butterfly (*Euphydryas editha*), have begun to pop up throughout the area.

As RCHCA continues to refine its methods, one thing is for sure: modern interpretations of yesterday’s actions are restoring habitat and species once thought lost.



Mimulus sp. in Idaho fescue field, Walker Ridge

Photo: Andrew Fulks