



Western SARE Program

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RANGELAND MONITORING PROGRAM

Situation

Red Rock Canyon, located in the Coronado National Forest of southern Arizona, includes a perennial-intermittent stream fed by a 20,000-acre watershed in rugged, mountainous terrain around 4,000 feet. Cattle grazing was begun in the late 1800s and has continued with varying degrees of management and control. Four ranches – Collins C6 Ranch, Vaca Ranch, Red Rock Ranch and Open Cross Ranch – graze cattle on a combined 51,000 acres, with the Red



Richard Collins of C6 Ranch LLC in Sonoita, Arizona.

Farmer/Rancher Grant

Project Number: FW05-005

Title: Partnership for Monitoring Rangeland and Riparian Health in Red Rock Canyon Watershed, Santa Cruz, County, Arizona

Project Coordinator:

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Technical Advisors:

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Cooperators

Bob Hudson, Vaca Ranch
Chris and Larry Peterson,
Red Rock Canyon Ranch
John McDonald, Open Cross Ranch

Amount Funded: \$20,000

Rock watershed making up nearly 40%.

In 1990, as a result of formal consultations with U.S. Fish and Wildlife on the endangered Gila topminnow, the U.S. Forest Service cut the numbers of permitted cattle in Red Rock by 50% on three ranches and 40% on Open Cross Ranch and fenced off the permanent waters. Ranchers complied.

Further consultation in the mid and late 1990s placed additional restrictions with a recommendation to close the watershed to grazing. These recommendations had not taken into account changes in management and stocking rates that had occurred since 1990. Alarmed by the threat, the ranchers formed the Canelo Hills Coalition to seek support to monitor vegetation and build new stock watering facilities and fences, with the Forest Service as a partner.

Objectives

1. Carry out comprehensive vegetation monitoring in the uplands and riparian areas
2. Develop upland livestock waters and fencing to facilitate grazing management
3. Build and repair fences and develop new livestock waters in the uplands to bring cattle out of the bottom lands
4. Involve the U.S. Forest Service as an active partner

Actions

Over five years, seasonal precipitation was measured and baseline data were gathered by the ranchers and Forest Service on these key indicators of rangeland health:



Western SARE, a USDA organization, funds grants for research and education that develop or promote some aspect of agricultural sustainability, which embraces

- *profitable farms and ranches*
- *a healthy environment*
- *strong families and communities.*

The Western Region, one of four SARE regions nationwide, is administered through Utah State University.

Western SARE:
<http://wsare.usu.edu>

National SARE:
www.sare.org

RANGELAND MONITORING PROGRAM



George Ruyle, University of Arizona, explains utilization. Below, rancher and agency collaboration was real plus of the project.

- ground cover: a comparison of litter, perennial plant base, gravel and rock with bare ground in a given space
- fetch: a measure of plant density, or spacing, over a site, indicating the potential for soil erosion
- plant species frequency: a means to detect vegetation changes over time in a given location
- dry weight rank: a measure of botanical composition by weight commonly used to evaluate range condition

Each rancher actively participated in collecting field data alongside Forest Service range staff from the Sierra Vista Ranger District. In addition, the monitored sites were compared with similar sites considered to be in excellent condition using the Similarity Index, a comparable real time example with the same soil type, precipitation, exposure and slope.

In addition, the project put considerable effort into water development. The Forest Service cooperated by drilling a

well and providing troughs, storages, pipe and floats. Ranchers provided labor and pumps.

Results

By the end of the project in fall 2007, the Forest Service and the ranchers in the Canelo Hills Coalition found that:

- Using Forest Service-approved field methods and ecological site guides, all but one of 18 transects monitored on four ranches could be classified as in "good" or "excellent" condition.
- Riparian areas were fulfilling their ecological functions as determined by the Forest Service's Proper Functioning Condition methodology.

The information now provides a baseline from which to measure future trends in these key vegetation parameters.

The requirement of working together built up good working relationships and trust between the ranchers and the Forest Service – a major benefit of the project.

Potential Benefits

Open Cross and Vaca Ranches increased cow numbers and C6 Ranch has high weaning weights (~50 pounds) because of increased forage production resulting from rest-rotation grazing of riparian areas. "We as ranchers were especially interested in improving ranch economics in addition to improving rangeland health," says Collins.

By working together in partnership on the entire watershed, and having the monitoring system in place, the Canelo Hills Coalition has been awarded grants for water development and fencing on all four ranches amounting to more than \$650,000.

The Forest Service was an active partner, working not just for the benefit of the Gila topminnow but also for the benefit of the watershed and its ranchers.

The grant opened dialogue on riparian grazing practices and techniques for measuring vegetation use with other ranchers and organizations, including The Nature Conservancy, Arizona State Parks, Arizona Fish and Game Department, U.S. Forest Service, Bureau of Land Management, Santa Cruz Co. Natural Resources Conservation District and the University of Arizona.

The outreach brought nine new ranches into the coalition, raising the acreage covered by coalition members to 150,000 acres, including not only the watershed of Red Rock Canyon (a tributary of Sonoita Creek) but also the headwaters of the Babacomari and Santa Cruz rivers.