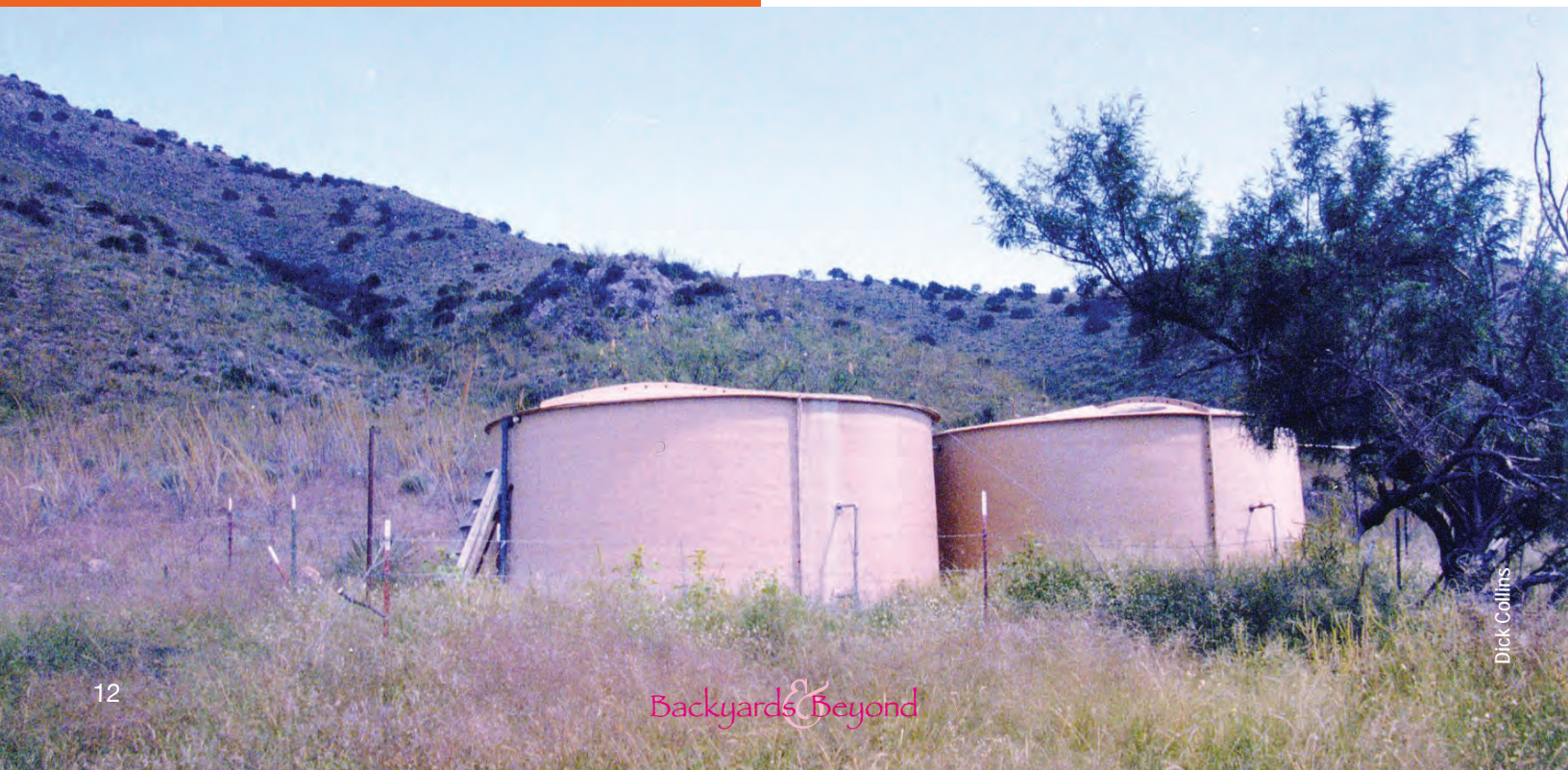


Canelo Hills Coalition: A Watershed-based Partnership to Improve Rangeland Health and Ranch Economics in Red Rock Canyon, Santa Cruz County

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Red Rock Canyon is a perennial intermittent stream draining a watershed of 20,000 acres in the Canelo Hills of the Coronado National Forest (CNF) near Town of Patagonia. The CNF administers four grazing allotments in the watershed: Crittenden/C6 Ranch; Kunde/Red Rock Ranch; Papago/Open Cross Ranch; San Rafeal/Vaca Ranch. Collectively, the four ranches encompass 51,000 acres (including the Red Rock watershed). In 1990, in formal consultations with the U.S. Fish and Wildlife Service over the endangered Gila Topminnow, the CNF reduced the numbers of cattle allowed to graze the watershed by nearly 50% and fenced off the permanent waters in the Canyon. The ranchers complied, but new consultations in the mid to late 1990's placed further restrictions on grazing management and included recommendations to completely close the watershed to grazing. The evaluations of rangeland and riparian health used by the agencies on which to base these restrictions and recommendations were, however, incomplete and out of date, and did not take into consideration the changes in stocking rates and grazing management that had already occurred.

Although ranchers were the ones most impacted by the decisions, agencies, in the beginning, paid little heed to their concerns. Alarmed by this threat to their livelihoods, the ranchers formed the Canelo Hills Coalition in 2001 with four main objectives: First, they had to work on a watershed basis, rather than allotment-by-allotment. Second, both the ranchers and CNF needed comprehensive, science-based, long-term monitoring of rangeland and riparian vegetation to gain an accurate, objective assessment of rangeland health on which to base land management decisions. With the help of a Farmer/Rancher grant from the Sustainable Agriculture Program (SARE) of the USDA, ranchers contracted with University of Arizona Cooperative Extension for a five-year monitoring program. The third objective was to develop livestock waters and fencing to facilitate grazing management, keeping cattle out of the Canyon bottoms except during the winter. Finally, the ranchers had to have the Forest Service involved in the total process because, ultimately, they had management authority. Once the Coalition organized and had a plan, the CNF Sierra Vista Ranger District became an active partner, participating in the vegetation monitoring, supplying fencing and pipeline material, and drilling a well for upland water. To be sure, Gila Topminnow was the principal motivation, but the CNF also worked for the benefit of the entire watershed including the ranchers.



Dick Collins



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With the monitoring program in place, the Coalition was able to qualify for cost sharing grants from several agencies (Arizona Department of Environmental Quality, Arizona Department of Agriculture, Environmental Quality Incentives Program (EQIP) /USDA Natural Resource Conservation Service, and the Arizona Game and Fish Department) for new wells and solar power, water storages, pipelines, and fencing, amounting to approximately \$750,000. Ranchers put up about 40% in most cases with their labor and costs of monitoring. Except for the Red Rock Ranch/Kunde Allotment, each ranch had pastures outside the Red Rock watershed. Importantly, the granting agencies understood the rancher's need to make the improvements on all their lands as distinct operating units and not just those in the Red Rock watershed.

By the end of the project in 2007, the Coalition ranchers and CNF found that all but one of the eighteen transect sites monitored could be classified as in "good" or "excellent" condition using interagency approved field methods and Ecological Site guides. In the riparian areas where cattle grazed only during the winter, the vegetation, including cottonwood and willows, had rebounded markedly, protecting stream banks from erosion caused by summer monsoons. These areas now fulfilled their ecological functions as determined by the Proper Functioning Condition methodology, while providing valuable forage to cattle during the critical winter period. The five-years of vegetation monitoring provided a baseline for rangeland health, useful for evaluating future changes that might occur, as for example, the effects of climate change. Recognizing the value of vegetation monitoring for both compliance and for management decisions, Coalition ranchers have continued the program. During the five-year study, Extension specialists trained a local nurseryman in field monitoring techniques, making available a local resource for Coalition ranchers and others in the CNF Sierra Vista Ranger District (funded by Quivira Coalition/ Forest Service small grant). Finally, the requirement of working together on the ground helped build better relations and a measure of mutual trust and respect between ranchers and participating Forest Service personnel, a major benefit of the project. Ranchers and agencies will never agree on all aspects of rangeland use and health, but through dialogue, many issues can now be resolved to the mutual benefit of the parties and the land.

The grants received by Coalition members required outreach, informing others ranchers and agencies of its results and experiences. In late 2007,

the Coalition presented the results of its five years of work to an open meeting at the Fairground in Sonoita, attended by other ranchers and organizations including Arizona State Parks, Bureau of Land Management, Forest Service, Natural Resource Conservation Service, Arizona Game and Fish Department, and private conservation groups like the Nature Conservancy. The Coalition also presented its experiences at meetings of the SARE in hopes that it could be a model for other small-scaled, local groups grappling with similar problems. The most effective have been those started and led by ranchers and others living within the boundaries of the watershed.

Sustainability has become a catch phrase encapsulating the notion of using the land in such a way that maintains ecological integrity. It also implies being able to make a profit—economic sustainability. Based on the demonstrated improvement of vegetation in the Canyon, the Forest Service has restored some of the cuts in cow numbers. These are year-to-year increases conditional on production of forage. On the Crittenden allotment, weaning weights of calves have increased about 50 lb by grazing riparian pastures for 1-2 months during late fall and resting the pastures every year during the monsoon. Assessments of annual production by grasses done after the monsoon and just before grazing have shown upwards of 3500 lb per acre in a year with 12+ inches of summer rain; in a year like 2009 with half the moisture, production will be corresponding less and grazing has had to be reduced.

The principal of holding off grazing during the summer monsoon to restore and invigorate grasses also helps maintain health of the uplands. On the C6 Ranch, new fencing and water development has facilitated resting each upland pasture every-other growing season.

John Wesley Powell, the one-armed Civil War veteran who first explored the Grand Canyon and formed the United States Geological Service probably knew the arid west better than anyone. He recommended establishment of political boundaries based on watersheds rather than on straight lines, arguing that the watershed has continuity of hydrology, topography, plant, and animal life. Unfortunately, the politicians preferred the simplicity of standard cadastral surveys, and we got what we got. But solving problems and conflicts of land use, including management of grazing, within the common boundaries of a local watershed offers a more rational and effective approach.