

Going Native

Peace, Fred Provenza, grazing, and saving nature. By Steven H. Rich

Fred Provenza, Ph.D., is a pioneering animal behaviorist and founder of Utah State University's Behavioral Education for Human, Animal, Vegetation and Ecosystem Management program (BEHAVE). He and his colleagues are just now learning—on our behalf—skills required to be real natives. They're developing our ability to protect and heal nature naturally and, ultimately, for free (or at a profit). Real natives *get* nature in their hearts, minds and guts.

Native cuisines still use ashes to concen-

breeding, firetrap tangles that strangle other species. They effectively fostered biodiversity and well-developed, covered, healthy soils. They used fire to keep woody species in check, and kept fire severities low. These are the best defenses against problem plants. They used wild grazers as tools of management. Plains groups called fire “red buffalo,” having seen connections between the two tools' effects. They knew that bison and other herbivores' feeding and other behaviors acted strongly to remove competitive advantages that semi-toxics like conifers and sagebrush now have over grasses and forbs.

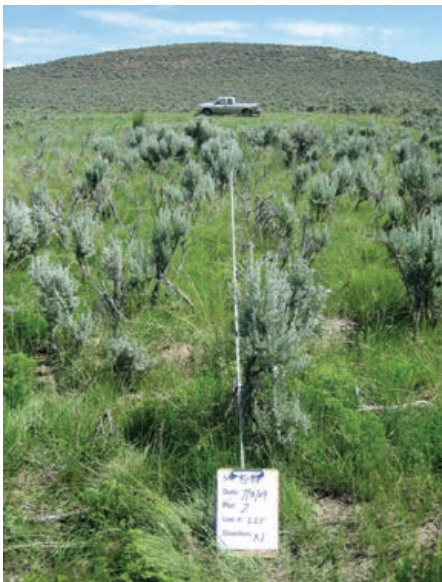
While thinking about our grazing controversy in its complex natural and socioeconomic context, remember the following quotes by Albert Einstein and Will Rogers: “We can't solve problems at the same level of thinking that created them,” and, “It's what you know for sure that just ain't so that gets you in trouble.”

Provenza puts it like this: “In ‘A Sand County Almanac,’ Aldo Leopold wrote: ‘We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.’ Leopold

points out that while the ax, the cow, and the plow can devastate landscapes, those same elements can also rejuvenate land.” In using these tools skillfully and wisely, people can become what Provenza calls “ecological doctors” practicing functional medicine—people who understand that the really big issue is crossing the divides that isolate and polarize us, to work together to nurture healthy soil, plants, animals, and human beings.

Many warriors on either side of the public-lands grazing conflict now show about the same adaptation level as many livestock: their ecological ideas never left the Old World. The anti-grazing *negative* evaluators have had real or education-induced bad experiences. They live with a learned, cultural, gut-level aversion. The sight or smell of grazing stock or droppings makes them sick and angry—unlike the sight of grazing or pile-depositing elk or bison. The *positive* evaluators generally grew up liking livestock, eating them, and feel like there's no real problem. Both sides love nature. Both sides claim a moral advantage. Both sides quote experts. Unfortunately, most miss many life-and-death biological realities and their historic context. It's a recipe for a fight—a useless one—and it painfully misses

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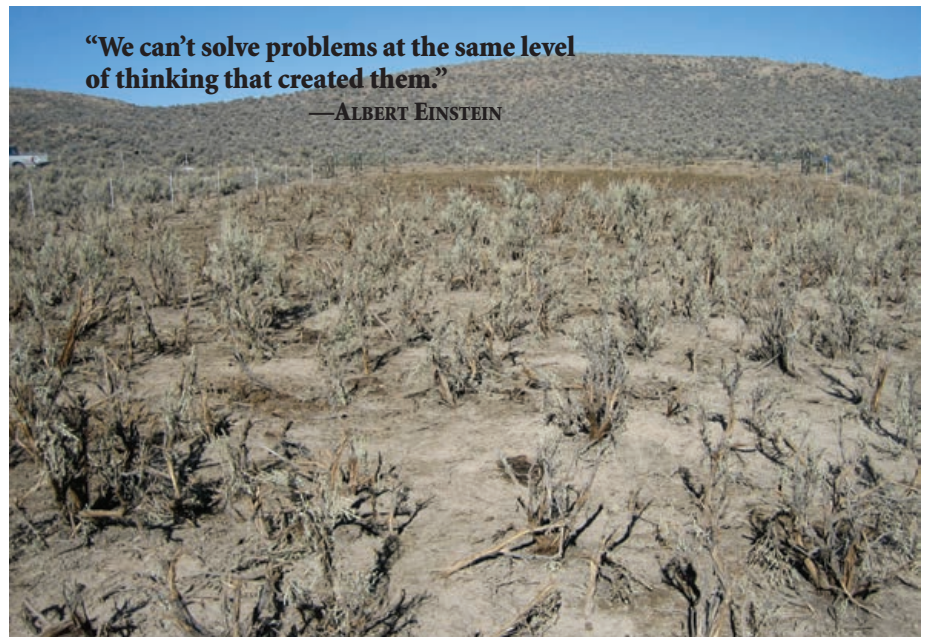
Adaptation Cell—posttreatment. Given food supplements to naturally detoxify sagebrush terpene levels, cows and calves in the experiment (just like bison, elk and pronghorn) chose to eat sagebrush foliage, branches, bark and rabbitbrush at levels that astonished scientists. Was the land destroyed? No, every treatment releases biodiversity.

trate life-critical minerals, for flavor and to release necessary amino acids in corn. Their ancestors knew how to ensure the abundance of, gather, process and enjoy plants few people can use as food today. Their knowledge of wildlife diets and behavior was just as well adapted.

Native Americans easily solved now-baffling environmental issues using a superior ecological concept. They taught their kids to regard over-thick tree and shrub stands of many species realistically—as lethal, bug-

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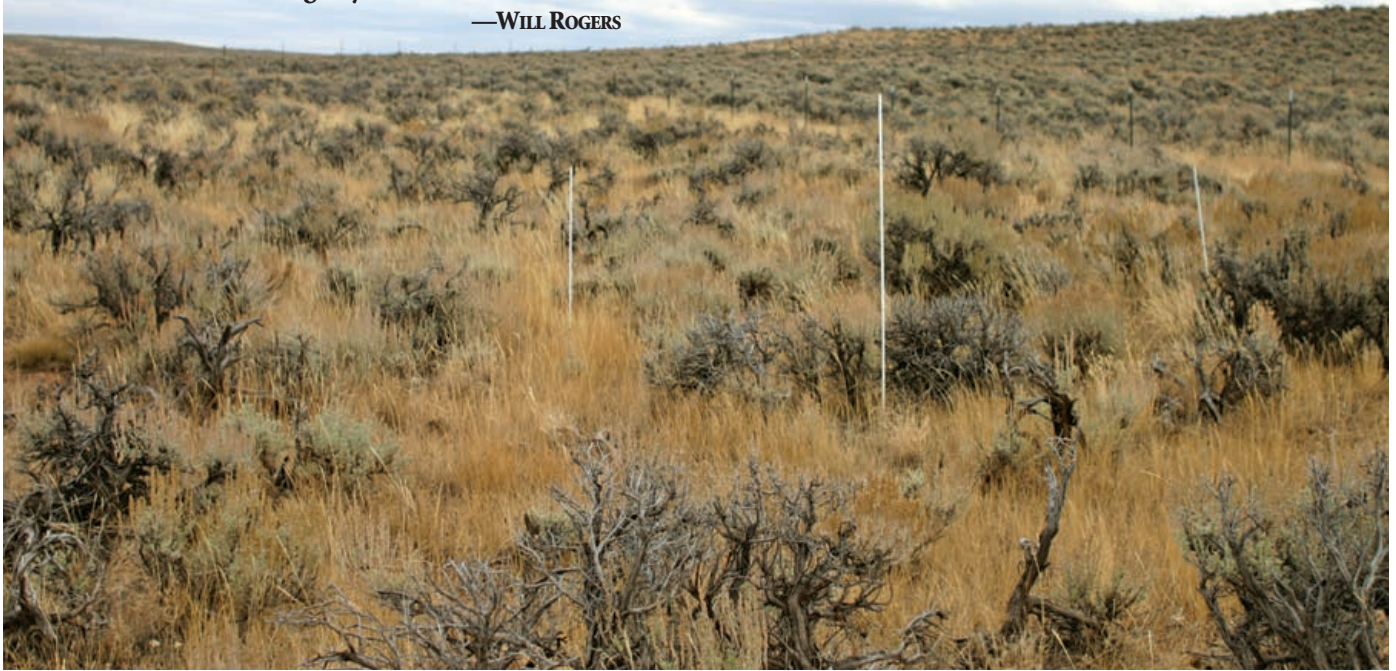
—ALBERT EINSTEIN



Teaching cows and calves to like eating overdense sagebrush during fall in the Adaptation Cell on Cottonwood Ranch in northeastern Nevada. Photo taken by Utah State University grad student, Chuck Petersen, to show posttreatment baseline site. Before treatment, grasses were few, small and weak.

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—WILL ROGERS



Deseret Ranch: BEHAVE trained and supplemented sheep versus dominating sage. Native plant diversity and health exploded as a result of intensive grazing and trampling by heavily concentrated sheep—followed by recovery time. To achieve ecological goals, various levels of sage density reduction can be created by livestock. The public must be educated about the power of domestic livestock to save nature—and ranchers pay for the privilege!

the Einstein/Rogers’ points about solving problems.

Aversion reactions and finicky eating by animals shape ecosystems. Provenza uses spoiled potato salad to make this point. “The body *remembers* early negative post-ingestive experiences with *bad* foods, and no amount of hearing *try it you’ll like it* can convince certain people that potato salad tastes good.” A scientific, sympathetic view of the severe psychological/digestive/ecological challenges animals face pioneering new country should be enlightening. Western pioneers were strangers in a strange land. The New World really began where the European-steppe-like tall-grass prairie ended. Further west, many plants, climates, soils, even rates of decay were critically unfamiliar to northern Europeans. In 1850, bison mothers showed their calves how to eat almost all local plant species either as food or for self-medication or both. Pioneer livestock had gotten sick eating stuff Mamma didn’t—or too much of things she did. Mature animals get ever less experimental. Leaving home is stressful. So because of strong resistance to new, “non-mother-approved” foods, cows, goats, sheep or horses from Illinois, Missouri, etc., had to be starved into eating semitoxics like sagebrush, conifers, or rabbitbrush, and they

learned aversions to these plants. One of our problems is that most of their descendants still have them. “They eat the best [familiar low-toxin plants like grass],” Provenza says, “and leave the rest [unfamiliar, perhaps

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Provenza’s colleagues and cooperating ranchers shed some peaceful light on perceived conflicts. Some anti-livestock experts insist that bison’s ability to handle high-roughage (cellulose, etc.) diets is genetic—and a cow’s different forage choices prove how necessarily destructive nonnative cattle must be. Makes sense until animal behaviorists/nutritionists discovered cattle can be

taught by their mothers—or by wised-up humans—to thrive on the bison’s same diet.

Ranchers have several effective riparian-protection strategies—but the same anti-grazing experts say cattle harm stream, pond and lake riparian areas because of genetically determined behavior and nutritional need. Could be, but not according to BEHAVE research. Without knowing why (perhaps), most bison still avoid lingering in riparian sites: their ancestors were taught to fear wolves and bears near water; to better meet their needs on the dryer uplands; and maybe most of all (aware or not), to avoid picking up wet-area parasite loads that made them weak and easy to kill. This also broke parasites’ life cycles. Provenza quotes a colleague: “All organisms have evolved coping mechanisms for obtaining nutrients [Fred calls this the ‘gut defense’—avoiding suspect foods] and protective mechanisms to keep from becoming nutrients [called the save-your-skin defense].” Concerning livestock, Provenza says, “A few thousand years of domestication has not hindered the ability of today’s domesticated animals to learn. Cows can be taught to use uplands.”

BEHAVE researchers taught cattle—able to produce fertile, hybrid offspring with bison, so, genetically similar—to use dryer



areas by luring them to feed supplements a quarter-mile or more away from water. They spend no more time near streams than bison, especially when taught to eat a broad diet. They feel better on dryer sites, too, because their parasite loads decrease. The supplements aren't needed when cattle know how to use native plant choices. Adapted cattle act like bison—except cattle are friendlier and much more manageable.

During the past century, people came to believe that cattle degrade riverbank ecosys-

tems and that nothing short of removing them or fencing riparian areas would rectify the situation. But fences as cow-sitters are expensive to build and maintain and they may, at times, adversely affect many wild species of birds and mammals.

Alternatively, BEHAVE research and concerned ranchers have proven that a rider on horseback can also train cows and calves to forage on upland plants, and discourage their use of riparian areas by moving and placing them in desired locations. A rider can also identify and cull cattle that refuse to leave riverbanks. In so doing, people can change the culture of the herd, which is then maintained as calves learn from their mothers what to eat and where to forage.

Researchers find that riding by BEHAVE-aware herders is actually less costly than fencing and more effective in the long run. The costs of riding are offset by the benefits from additional forage in uplands, improved herd care and health, better riparian areas, and enhanced diversity of plants and wildlife. Until the industrial age, most Americans had stock-herding skills. We've now come to rely on fences to influence the foraging behavior of livestock. The practices of shepherds and cowboys may seem simplistic to the uninformed.

Nonetheless, herding is the lowest-cost, most eco-friendly, most sophisticated way to manage livestock and, in turn, the health of soil and plants, herbivores and people.

"Fences can't do what a knowledgeable shepherd can do to optimize grazing from a diversity of forages," Provenza says. "By designing daily grazing circuits, herders move livestock across terrain from meal to meal in ways that stimulate appetite, thus improving the nutrition, health, welfare, and production of animals. By knowing which plants work best as appetizers, main courses, and desserts, a skilled herder can maintain plant diversity by encouraging the herd to eat a mix of plants, some palatable and others less palatable."

BEHAVE researchers find that by far the highest level of sophistication in "targeted grazing" of weeds can be achieved through the relationship of a herder, a flock (trained livestock), and a landscape of "desirable" and "undesirable" species. The United States has more herbicide-resistant weeds (nearly 125 species) than any other place in the world. People spend over \$120 billion annually in a never-ending, largely unsuccessful attempt to control weeds. "Instead of trying to kill problem plants with herbicides, we should be using herbivores to love them to death."



The "now and future nightmare"—caused by alien, Old World ecological beliefs—on millions of public acres. No grass, no flowers, no seeds, no new plants, trees encroaching, shrubs dying, crusted, lifeless soil, erosion, little wildlife. Fire can only hurt land like this. Properly managed, properly supplemented livestock (using BEHAVE principles) can pay us to rescue these sad places. AT TOP: Fred Provenza, a profound scholar, has a cheerful, humorous intelligence. "Instead of trying to kill problem plants with herbicides," he says, "we should be using herbivores to love them to death."



Sterilized bare ground is because fire crushed native biodiversity here. Seedlings are almost all nonnative cheatgrass. Fire's a foolish choice where dense woody species have already purged the grasses, etc. Far more scientifically sound and far better economically, livestock under BEHAVE methods rejuvenate crushed ecosystems.

Open, solution-minded humans have used livestock as eco-management tools for a long time. It takes a particular, creative awareness to want to learn rather than fight. Provenza is a profound scholar with a cheerful, humorous intelligence. It speaks well of him as a human being that he moved mountains creating a network of universities that share knowledge and educational programs.

If you want to save sage grouse, sagebrush-obligate species, and other wildlife, take note: BEHAVE researchers have taught

livestock to rejuvenate ecosystem habitats such as sagebrush steppe and thrive while eating significant amounts of sagebrush. If wise policy prevails, properly supplemented and scientifically prescribed armies of cattle, goats and sheep should *soon* be concentrated to create an ecologically desirable mosaic of grass, forbs and sagebrush at various densities. They will bring to life the vast, sickly, sterile, eroding, wildlife-useless sage-monoculture barrens of the West.

Most lands are so unhealthy now, that

the shrubs rarely bear seed. And all woody species bring that same fate on themselves if not thinned. Huge overdense chaparral stands are similarly soil-sick, seed-poor, and unbiobiodiverse, as are most pinyon/juniper woodlands and conifer forests. All are lethal-to-wildlife and deadly-to-native-plant-diversity firetraps. Livestock could pay us to fix this. BEHAVE science has taught livestock to eat and control a rogues' gallery of problem weeds, shrubs and trees and improve fire safety, while making soils much more fertile and plants more nutritious and inviting to wild and domestic herbivores. Are humans open and scientific enough to allow it?

Congress, federal and state executive branches, state legislatures, federal agencies, livestock producers and the public must get up to speed. As you probably already know, our country cannot really afford to dither with failed ecological concepts, or throw technology and money at these problems. Most environmental solutions now can be accomplished best, perhaps exclusively, by livestock operators and forest-products producers. American culture is in real danger of failing because our brains, hearts, and guts never went native. ■

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Flowers and grass (herbaceous plants) are outcompeting sagebrush (notice, no sage seeds) on this properly grazed land. Grasses and flowers depend on soil disturbance and nutrient cycling from grazers. They need help competing with taller, less grazing-desirable species like sagebrush. BEHAVE-trained livestock self-balance their diets (or use supplements) so they can eat sage and other semitoxics—and give the little guys a chance.