TRUE GRIT and BIOLOGICAL THRESHOLDS

Dedicated ranchers heal nature against all odds. Words and photos by Steven H. Rich.

Scientists use the word amelioration to describe the process of making things more life friendly. Tony and Jerrie Tipton and their collaborative team are world-class ameliorators. They have mountains of meticulous data to prove it. Most of the team's data were taken by U.S. government officials volunteering on their own time. All of it is real. If these same data were taken by the same federal staffers during on-duty hours, it would have sufficient legal strength to compel full federal action.

Bird surveys taken by well-known environmentalists prove that lands the team has managed have improved dramatically. They hugely increased spring flows without increased rainfall. The improvements were so good that the former Carson City Bureau of Land Management (BLM) district manager (also an eyewitness) described the changes as "almost mystical." Riparian areas healed, stream flows lengthened, meadows appeared and expanded, native grasses and flowers thickly invaded formerly decadent stands of introduced nonnatives, and wildlife flourished.

Trouble is, all this was accomplished using practices outside the approved "standards and guides." Worse than that, the team (especially Tony) insists that such rapid healing could not be achieved within the orthodox doctrine.

Tony loves to find hopeless, sterile places, about a quarter acre at a time, and "pound the hell out of them" with his cows, creating a profound positive change impossible to accomplish so quickly by any other means. Scientifically, this means the animals place all woody organics as a mulch on the soil surface, and fertilize and inoculate the soil with necessary microbes, making a really effective seedbed. Then he loves to watch the native grasses and flowers grow there and carefully manages them. The author has witnessed this process and the Tiptons' and many others' success with it since the 1980s. Experimental results by Drs. Rasmussen and Keyes of Utah State University and others support it.

"Dangerous stuff, this unorthodoxy," is the apparent bureaucratic response from present district officials. Their correspondence is full of "get back in the box" language. Former managers "erred" in granting such latitude, they write. The barren, hopeless sterility of much of Nevada must be defended from that crazy grass-growing, stream-healing Tipton bunch. Imagine if medical regulators had reacted this same way to that wacky, new-fangled penicillin back in the last century because of an irrational prejudice against mold. Present feds have refused to even look at the team's scientific proof. The team's data mysteriously disappeared from the district's allotment files. But the team has backup copies and no intention to quit.

The Tiptons have run afoul of the entrenched prejudice that insists that livestock activity should be limited and eliminated as soon as possible. Science continues to prove that ranchers' and loggers' best practices greatly improve health, function, diversity, and species richness of wildland ecosystems. This should be wonderful news to Americans who love nature and mean their rural fellow citizens well. Both the Sierra Club and the U.S. Environmental Protection Agency have stated online that grass-fed beef production (i.e., careful ranching) in fact sequesters millions of tons of carbon by causing root

Burned over 10 years ago, this site has never recovered despite being reseeded twice. It is clearly below the threshold which supports native perennial grasses. Other sites nearby, which supported herbaceous perennials before the fire, were successfully reseeded on the first attempt. Nonnative hoarhound at wide spacings are the only plants to successfully establish. Sites like this are often burned with the expectation of range improvement. At depressed thresholds there is no chance of this without intense animal impact.

This experimental control plot corresponds to the long-rested site described in the text as teetering on the edge of a desperate threshold. It has thick sage, but no deep-rooted grasses. A few shallow-rooted grasses and nonnatives are present. A fire would put it in the condition of the burned and twice-failed reseeded area. Scientists testing grazing effects created strong positive responses on the experimental plots.

regrowth and is a net decreaser of global warming and an enricher of soils and biodiversity. Such producers are eager land stewards.

Sadly, rather than causing rejoicing among the more radical green policy makers, they greet with alarm and denial the fact that appropriate disturbance in nature is a good thing which rural people will provide for free. The public has never been informed because of a perceived need to keep alive the image of ranchers and timber harvesters as crisis-creating bogeymen for fund-raising purposes. Though radical green groups are sophisticated about science, they believe the public only donates in a crisis. The idea that rural communities can make a good living solving dangerous problems in nature while providing needed commodities is simply not welcome.

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Intense grazing use by sheep created a community (beyond white posts) dominated by deep-rooted native grasses and a thinned sage component. A fire in this community would simply create healthy grassland. This is precisely the response the Tiptons routinely cause using their cattle. Inset: Tony and Jerrie Tipton get all kinds of positive results from formerly "dead" and "degraded" places.

Instead of focusing on cooperation, problem solving, and public and land-user education, the response to the growing evidence by many activists, policy makers and academics has been to become even more radical and entrenched in the "leave it alone" position.

They cling fiercely to the false and refuted notion that human influences are necessarily destructive. This idea has huge seductive power. It connects smoothly with every resentment of industrial society: authority, bosses, childhood and teenage discipline. Seeing continued development gobble up nearby beloved countryside and seeing the consequences of pollution, this response can be understood. But closed mindedness and gross overgeneralization are far less tolerable when such high stakes are involved.

All this has spawned the present mess where pseudomanagement, misclassification and neglect pass for intelligent stewardship.

Here's why. There are two principles anyone who has lived a life in the wild knows: (1) Randomness equals calamity; and (2) The only constant in nature is change, so be ready for it. Rural people, especially those who are continually out in nature, cannot fathom the urban desire to cast nature and humanities' fate to the wind. Let's look at Principle 1. Randomness is galactically lousy at creating ordered results, like preserving life and biodiversity. Evolutionary theory, for example, doesn't dwell on the billions of disfiguring and fatal random mutations that occur for every beneficial one, but it acknowledges them.

Why would anybody suppose that turning nature over to randomness would improve biological conditions and enhance diversity and health every time? The evidence supporting the leave-it-alone theory comes entirely from poorly designed and/or poorly analyzed short-term studies, lack of objective

This is the night pen for sheep used by Utah State University scientists for this grazing-response experiment exclosure—one of four repetitions. Several nights of sheep use created dense native perennial grassland with rabbitbrush and 100 percent sage mortality. A fire would have created years of bare ground and cheatgrass. When the Tiptons"stomp the shucks" out of a small area, this is what happens. The resulting mosaic benefits all ecosystem values.

Years of management have caused this beautiful, wildlife-abundant landscape. It has every habitat sagebrush steppe can produce. It is biodiverse and healthy. Most of the management of this private-land ranch would not fit Carson City BLM's "standards and guides." Should the owners be stopped?

standards, and the fact that doctrinaire activists won't acknowledge a disaster when it occurs. They just reclassify it. Just calling it "natural" works pretty well. The same people, so passionate about leaving nature alone, generally want to control and plan the dickens out of the economy, citing the need for conscious goals. The logic seems inconsistent.

But, some may say, nature did just fine before humans came along. Did it really? A decade ago, studies of lake sediment cores in the intermountain region showed that erosion was often more severe before Euro-settlers came with their livestock and saws. The cause was huge, severe wildfires, possibly combined with bank destabilization by bison and elk. Fire-caused flood flow increases up to 35,000 percent above those from unburned forest have been measured. A 9,600-percent increase is average (logging effects are tiny by comparison). A big storm on a fire-sterilized, fire-crusted slope makes a flood capable of blowing out miles of beaver dams and moving one third as much dirt and rock as water. Catastrophic events were common. Native Americans (the first ameliorators) worked hard with every tool they had to mitigate the fury of randomness. It is dishonest to pretend that the much-managed productive landscapes pioneers encountered in the 1800s were the result of random abiotic forces and raw competition between species. Life survived before humans. That's all that can be authoritatively stated. Life survived because organisms do everything in their power to stay alive.

Now, let's look at Principle 2: The only constant in nature is change. Remember, random changes are unlikely, to a large exponent, to be beneficial to the present community. We can't preserve nature unchanged any more than we can our own bodies. This raises the issue of biological thresholds.

For example, a wildlife-friendly shrub grassland in an 8-10-inch rainfall area of the Great Basin, with scattered sagebrush, deep-rooted grasses dominating shallow-rooted grasses and flowers (which likely got that way through management), can, in a few decades

More unorthodox management success involving "Tiptonesque" methods: piñon juniper woodland with dense, diverse native shrub/grassland. You'd think federal managers would encourage such a result.

This is a sight the West could use more of. The wash, draining thousands of acres, has entirely covered with vegetation and is stable. In the 1970s, this watershed was declared by both the BLM and NRCS (then SCS) to be in a "highly erosive condition." Nonstandard management has healed every wash on this ranch.

of nondisturbance, become a thick sage-dominated site with little understory or wildlife, teetering on a desperate threshold. That's because during those restful decades, the soil degraded in place as soil organisms kept eating organics, the organic input from grassroots diminished, and erosion started.

A wildfire or continued long-term rest are more than enough to push the site below the threshold into a state typical of large areas of the West (these are the problems the Tiptons so brilliantly repair). Once degraded, there is no natural pathway back to any of its prior healthy potentials. The only possible rescue is human intervention (based on Natural Resources Conservation Service information). The Tiptons found a way to profitably provide that rescue organically.

Similarly, forestlands, left undisturbed, have progressively thicker tree stands until the same threshold problem occurs. The grass and flowers are long gone as are all wildlife species that don't eat trees. A severe wildfire will remove all soil organics and change the plant species, perhaps forever. As we are witnessing presently, a drought may kill almost all of these too-dense trees. When they rot and fall, a wildfire in this huge, heavy, ground-contacting fuel load (which certainly will happen) is a horribly sterilizing, destructive event. Soils on forest slopes are generally thin and vulnerable. On steep slopes, standing treetops burn fiercely next to upslope soils. Flames from treetops often touch the ground. All wildlife is negatively impacted and profoundly altered.

An ameliorated, managed landscape (which the prestigious Society for Range Management generally recommends) has a reduced fuel load of heavy, woody fuels, a lot of grass and flowers, and increasing soil organics. That's what the Tiptons generally shoot for. They make mosaics with brush and tree stands at varying densities in optimal-patch sizes. This landscape can receive a fire without being set back centuries. It can keep the water where it falls and feed it slowly into streams and springs. It has a high biomass of wildlife with high species and genetic diversity. The absorbent grass-fed soil ameliorates droughts. Hoofprints in it ameliorate harsh surface germination and establishment conditions. It's the best way to protect and nurture life. It's the way Native Americans wanted their land to look and function. It's also the prescription that respected scientist Dr. Wallace Covington of Northern Arizona University and his group say 50 percent of western forests (those subject to frequent wildfire regimes) should receive.

It's long past time for a reexamination of the orthodox leave-it-alone religion. We're surrounded by trillions of miles of sterile barrenness where life cannot grow. Do we really want to expand it on earth, the home of life, just so urban elites can call vast tracts of land—hopelessly degraded beyond naturally recoverable thresholds—natural? Is pretending you're all by yourself in the 1830s really worth denying billions of organisms a chance to live?

The use of scientifically managed livestock and range-managed and controlled, biologically designed timber harvest give nature an opportunity to accumulate soil organics, maintain vigorous habitats and move into beneficial natural alternate states like mixes of aspens and conifers, grasslands, Gambell oak, pine or other savannah states, shrub/grasslands and others without passing through the years of erosion, bareness and nonnative invasion that even moderate fire severity can bring to monoculturally depressed sites. It's a choice between more life or less, and less secure.

The real dangers to nature in the West are development and cultural myths about nature. If these were dealt with, it would ameliorate the problem and the Tiptons and their teams could get on with making things better. ■

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