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JUSTICE FOR THE EARTH IN THE TWENTY-FIRST CENTURY¹

Debra L. Donahue^{1a}

Humans make up the most intentional and thoughtful of all species, yet we haven't learned to live on Earth in a way that does justice to our planetary covenants or to ourselves. Despite mounting evidence of planetary decline, we continue to behave as though we've been placed in a garden that we can feed upon and alter at will. We continue to act as if there will always be fresh pastures and new resources. We continue to rest our faith and bet our futures on the cleverness of the human mind to solve the problems created by our overuse of nature's largesse.²

In the nineteenth and twentieth centuries those “fresh pastures and new resources” were largely here, in the West, on the frontier. We came to the frontier to conquer it, to claim its riches as our own. “Our culture’s dominant conception of humans in nature has long been that of the human as conqueror and subduer of the wilds,” Professor Freyfogle writes. “Our ancestors were pioneers, driving out the wolves and turning up the soils and mineral riches. We are heirs of their myths and traditions.³

The conqueror image “presumes . . . that nature exists for the purpose of serving humans. Nature derives its value from its contribution to the utility of humans now alive, as if the field and the forest stood and waited for centuries for the human command to serve.”⁴ Viewing nature as a collection of resources “encouraged the conqueror to break the Earth into component parts, for only discrete compounds and pieces had market value. With resourcism—seeing nature as a collection of actual or potential resources—the whole was nothing.”⁵ As Freyfogle explains,

1. See ERIC T. FREYFOGLE, *JUSTICE AND THE EARTH* (1993).

1a. Professor of Law, University of Wyoming. My thanks to my husband, C.L. Rawlins, for his insightful critique of an early draft of this article.

2. FREYFOGLE, *supra* note 1, at xiv.

3. *Id.* at 7.

4. *Id.*

5. *Id.* at 119. Compare *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1017 (1992) (Justice Scalia quoting Sir Edward Coke’s query: “For what is land but the

this thinking allows us to “distinguish between good and bad species,” and to assume that “actions [taken] on one acre of land and with one resource will have no effect on the next acre.”⁶ The results, of course, have been conflict among land users and degradation of the land.

“Frontier” is not only a recurring western theme, its peculiar phenomena recur as well. Historian Patricia Nelson Limerick remarks:

In the second half of the twentieth century, every major issue from “frontier” history reappeared in the courts or in Congress. Struggles over Indian resources and tribal autonomy; troubled relations with Mexico; controversy over the origins of Mormonism; conflicts over water allocation; another farm crisis; a drastic swing downward in the boom/bust cycles of oil, copper, and timber; continued heavy migration to some parts of the West, with all the familiar problems of adjusting to growth and sorting out power between natives and newcomers; disputes over the use of public lands; a determined retreat on federal spending in the West: all these issues were back on the streets and looking for trouble.⁷

She too views the West’s history and legacy in terms of conquest, a conquest which “shapes the present as dramatically—and sometimes as perilously—as the old mines shape the mountainsides.”⁸

Limerick called the West “a place undergoing conquest and never fully escaping its consequences.” In her view, “[c]onquest basically involved the drawing of lines on a map, the definition and allocation of ownership . . . , and the evolution of land from matter to property.”⁹ She continued:

Western history has been a competition for legitimacy—for the right to claim for oneself and sometimes for one’s group the status of legitimate beneficiary of Western resources. . . . The contest for property and profit has been accompanied by a contest for cultural dominance. Conquest also involved a struggle over languages, cultures, and religions; the pursuit of legitimacy

profits thereof?”).

6. FREYFOGLE, *supra* note 1, at 119.

7. PATRICIA NELSON LIMERICK, *THE LEGACY OF CONQUEST: THE UNBROKEN PAST OF THE AMERICAN WEST* 31 (1987).

8. *Id.* at 18.

9. *See id.* at 24.

in property overlapped with the pursuit of legitimacy in a way of life and point of view.¹⁰

Westerners' "efforts to wrap the concept of property around unwieldy objects"¹¹ led to the attempted conquest of nature and the environment to which Limerick and others have referred,¹² but also to the conservation movement, which struggled with concepts of *public* lands and resources, belonging to all and to none of us.¹³

Nineteenth- and early twentieth-century issues and conflicts persist because in many ways it's still "business as usual" on the frontier. Or, as a *Denver Post* reporter put it, "inertia, in the form of tradition, rules" the modern western range.¹⁴ Although frontiers are, by definition, both places of change, and places at the forefront of change, many westerners cling to the old days and the old ways.

For some, however, the past may prove to be epilogue as well as prologue. Many small western communities will not survive unless they diversify economically and make other accommodations to life in the twenty-first century. Resource economists and the federal government have acknowledged this reality,¹⁵ but apparently only some local governments and landowners do.¹⁶ Many, instead, call for preserving the "Old West," which seems to mean keeping livestock on the land, existing ranchers in business, federal subsidies flowing in, and the federal government from meddling in local affairs.¹⁷

10. *See id.* at 26.

11. *Id.* at 71.

12. *See, e.g.,* Frank J. Popper & Deborah E. Popper, *The Reinvention of the American Frontier*, AMICUS JOURNAL, Summer 1991, at 4-7. Dr. Frank Popper teaches land-use planning at Rutgers University.

13. *See* LIMERICK, *supra* note 7, at 70-71.

14. Mike Ritchie, *Grazing Rights Battle: Fear of Change?*, DENVER POST, June 18, 2000, at 4B.

15. *See* U.S. DEP'T OF THE INTERIOR, RANGELAND REFORM '94 DRAFT ENVIRONMENTAL IMPACT STATEMENT (1994) [hereinafter *Rangeland Reform*]; THOMAS MICHAEL POWER, *LOST LANDSCAPES, FAILED ECONOMIES* (1996).

16. *See* DEBRA L. DONAHUE, *THE WESTERN RANGE REVISITED: REMOVING LIVESTOCK FROM PUBLIC LANDS TO CONSERVE NATIVE BIODIVERSITY* 260 n.104 (1999), for sources.

17. As one official of The Nature Conservancy (TNC) put it: "None of the demographic data indicate that economic activity in the West is threatened. . . . What's threatened is the family rancher." Dan Whipple, *Profs: Grazing Likely to Decline*, CASPER STAR TRIB., May 6, 2000, at B1-2 (quoting Bill Weeks, TNC executive vice president). Weeks also said that the current debate is "about whether the traditional family ranch will survive." *Id.*

Cleaving to the status quo in this way reflects the sentiment, perhaps more prevalent in the agricultural community than in any other segment of society, that the old ways are good and noble, and “change” is an evil to be avoided, a dirty word, if you will.¹⁸ *Denver Post* writer Mike Ritchie quips: “Some ranchers can say the word [change] without fainting.”¹⁹ Farmers, community leaders, and politicians decry the loss of family farms and the increasing industrialization of agriculture. When they argue for maintaining the political and regulatory status quo or press for even more favorable policies, they claim that small, family-run operations feed Americans and form the backbone of the industry.²⁰ Our devotion to the family farm and ranch, which dates to Thomas Jefferson’s time, continues to provide the gloss on, if not the impetus for, most of our national and state agricultural policies.²¹

This infatuation with the past and aversion to change are rife with irony. Consider: The cultivation of crops is, at its essence, a *whole-sale makeover* of natural ecosystems. And pastoralism (ranching), as practiced in modern times, generally involves replacing native vegetation with introduced forage plants, eliminating predators and “pests,” and drastically changing water distribution patterns. In other words, agriculturists’ concerns about change do not encompass alterations of the natural environment.²²

18. See, e.g., Paul F. Starrs & Lynn Huntsinger, *The Cowboy and Buckaroo in American Ranch Hand Styles*, 20 RANGELANDS 36 (1998) (observing that “many ranchers and farmers are tradition-bound, sewn into the old ways. Because ranches are tradition-bound, they tend also to act as the repositories of older and historic ways of doing business”). Starrs offered his own name, “Change on the Range,” for a recent conference, held in Fort Collins, Colorado, entitled “Culture, Economics and Ecology of Ranching West of the 100th Meridian.” See also, Ritchie, *supra* note 14, at 4B. According to Ritchie, “inertia, in the form of tradition, rules” the range today. *Id.* One rancher participant at the conference castigated ranchers for being “so hard-headed and set in their ways.” See *id.*

19. Ritchie, *supra* note 14, at 4B.

20. According to agriculture economists, however, while “Congress talks about saving the family farm, . . . it pours the money disproportionately to larger farmers.” Nicholas D. Kristof, *As Life for Family Farmers Worsens, the Toughest Wither*, N.Y. TIMES, April 2, 2000.

21. In 1999 *direct federal payments* to farmers “rose to a record \$23 billion. That is far more than the federal government spent on elementary and secondary education, school lunches and Head Start programs combined.” Kristof, *supra* note 20. “The larger question,” Kristof queries rhetorically, “is why the government should work so energetically and expensively to preserve the family farm. Family-owned restaurants, bookstores, and newspapers were all widely regarded as beneficial to their communities, yet in each case America allowed many of them to fade and be replaced by more ferocious and efficient economic competitors.” *Id.*

22. Nor does the professed distaste for change necessarily extend to modern technologies. Many farmers and ranchers have welcomed four-wheelers, snowmobiles, GPS,

Furthermore, while a large majority (85%) of farms today *are* small (owned by individuals or families), the average size has grown from 139 acres in 1919 to 435 acres today.²³ Small family farms do *not* feed America.²⁴ The largest 3.6% of farms account for more than 56% of total farm production value, while the *smaller half* of all farms account for *less than 1.5%*.²⁵ Many farm owners are absentee.²⁶ As far back as 1880, more than 25% of farmland was operated by tenants.²⁷ Indeed, Jefferson's nation of yeoman farmers was an ideal, more than a reality, nearly from the beginning. Today's notion of a national agriculture enterprise founded on the family farm is at best nostalgic or delusional. At worst, it is calculated to mislead fatuous politicians and the American public.

In sum, agriculturists' professed distaste for change is not only selective, it is backward-looking and wears blinders. It boils down to an aversion to changes—or perceived changes—in their lifestyle and in the human world around them. Thus, we hear ranchers lamenting that, to make ends meet, they have to run bed-and-breakfast establishments or conduct trail rides for “dudes” or take a job in town. And they rail (nearly with one voice) against increasingly burdensome environmental regulations.²⁸ In fact, ranching in the West has always been a marginally profitable enterprise, and agricultural activities are subject to less regulation than any other commercial activity in the country.²⁹ Professor J.B.

and computers into their operations. “GPS” stands for global positioning systems, a satellite-based technology used by some large farms to map yields across their lands so as to enable site-specific alteration of soil properties and nutrients in subsequent seasons to enhance productivity.

23. Kristof, *supra* note 20.

24. J.B. Ruhl, *Farms, Their Environmental Harms and Environmental Law*, 27 *ECOLOGY L.Q.* 263, 273 (2000) (citing 1997 Census data).

25. *Id.*

26. Only 1.5% of Americans live on farms today, down from 42% in 1900. Kristof, *supra*, note 20.

27. See Linda A. Malone, *Reflections on the Jeffersonian Ideal of an Agrarian Democracy and the Emergence of an Agricultural and Environmental Ethic in the 1990 Farm Bill*, 12 *STAN. ENVTL. L.J.* 3, 46 (1993).

28. See, e.g., Ann Jones, *Roundup of Ranch Vacations*, *National Geographic Traveler*, July-Aug. 1995, at 46, 48-53. See also Ron Micheli, *Ranching with Regulations*, in *Proceedings of the Range Beef Cow Symposium*, Dec. 14-16, 1999, Greeley, CO (bemoaning that the “agriculture community is being run over by zealots from the federal government enforcing such things as the Clean Water Act, the Endangered Species Act, the National Environmental Protection [sic] Act, the National Pollutant Discharge Elimination System [sic: this program is governed by one section of the Clean Water Act], and on, and on, and on”).

29. Production agriculture enjoys express or effective exemptions from nearly every major federal environmental law, including the Clean Water Act; Clean Air Act; Resource Conservation and Recovery Act; Comprehensive Environmental Response,

Ruhl has termed the legal playing field "vast 'anti-law' of farms and the environment."³⁰

The blinders that prevent farmers and ranchers from recognizing their privileged status with respect to regulation have also enabled them to ignore or deny the environmental damage their operations cause. In fact, agriculture is moving "steadily up the ranks of the worst threats to the environment."³¹ It is the leading cause of water quality impairment in the nation.³² Grazing is the number one cause of nonpoint source pollution of surface waters in fifteen western states.³³ Farms (a category encompassing grazing and pasturelands) cover 930 million acres, or nearly half, of the United States.³⁴ It should not be surprising, then, that agriculture is the primary cause of habitat loss and alteration and, consequently, one of the chief causes of species endangerment.

Aldo Leopold wrote, in his essay "The Round River": "What remains of our native fauna and flora remains only because agriculture has not got around to destroying it."³⁵ Fifty years later, Professor Ruhl assures us that "[m]ost direct loss of habitat resulting from conversion of land areas to farming has already occurred."³⁶ Ruhl is largely right with respect to row-crop agriculture, but the destruction of native flora and fauna continues on grazed pasture - and rangelands, especially in the arid West.

Compensation, and Liability Act; Emergency Planning and Community Right to Know Act; etc. See Ruhl, *supra* note 24, at 293-316 (describing agriculture's significant exemptions from federal environmental laws); see also *id.* at 270 n.12 (noting agriculture's "favorable treatment" in other regulatory arenas).

30. Ruhl, *supra* note 24, at 267. Irrigation return flows, for instance, are expressly exempt from point-source regulation under the federal Clean Water Act (CWA). See 33 U.S.C. § 1362(14). Similarly, range- and pastureland grazing are labeled "nonpoint sources" of pollution and thus are exempt from CWA permit requirements. See *id.* § 1288(b)(2)(F). Only a relative few "concentrated animal feeding operations" are regulated as CWA point sources. See 33 U.S.C. §1362(14); 40 C.F.R. §§ 122.23 & pt. 122 app. B (2000).

31. Ruhl, *supra* note 24, at 268 (citing numerous sources for support).

32. EPA Office of Water, National Water Quality Inventory 1994 Report to Congress, ES-12 to ES-19. See also Ruhl, *supra* note 24, at 288 & n.143.

33. This was the conclusion of a 1989 survey of state water officials. Western States Water Council, *Preliminary Summary of Findings: Western States Water Council's Nonpoint Source Pollution Survey, Western States Water Council Conference, in NONPOINT SOURCE POLLUTION CONTROL WORKSHOP—TECHNICAL ISSUES I-B-2* (July 1989) (publishing results of survey).

34. Ruhl, *supra* note 24, at 272 (citing U.S. Census data).

35. ALDO LEOPOLD, *A SAND COUNTY ALMANAC* 199 (Sierra Club/Ballantine Books, 1966).

36. Ruhl, *supra* note 24, at 275.

A recent study determined that livestock grazing has contributed to 22% of the habitat destruction associated with the endangerment of nearly 2000 U.S. species, ahead of both logging and mining. At least 33% of federally listed endangered plant species are or have been harmed by grazing.³⁷ The more arid the landscape, the more likely it is that grazing has contributed to species endangerment.³⁸ Livestock grazing is the primary cause of the loss and degradation of species-rich riparian areas in the West; of the seventy-six species for whose decline livestock grazing is a significant factor, sixty-one are dependent on or associated with riparian areas.³⁹ Livestock's impacts on streamside habitats and species in more humid parts of the country may be nearly as great.⁴⁰

Despite the overwhelming evidence, however, few in the agriculture business accept these indictments. Indeed, it is more common to hear ranchers claiming credit for being the "original conservationists," for "creating riparian areas," for improving land health, and for providing streamflows and habitat for wildlife.⁴¹

Change, like beauty, seems to be in the eye of the beholder. Whether change is perceived as good or bad—indeed, whether it is even

37. See Brian Czech et al., *Economic Associations among Causes of Species Endangerment in the United States*, 50 *Bioscience* 593, (2000).

38. JOHN HORNING, *GRAZING TO EXTINCTION: ENDANGERED, THREATENED AND CANDIDATE SPECIES IMPERILED BY LIVESTOCK GRAZING ON WESTERN PUBLIC LANDS 1* (National Wildlife Federation 1994).

39. See *id.* See also A.J. Belsky et al., *Survey of Livestock Influences on Stream and Riparian Ecosystems in the Western United States*, 54 *J. SOIL & WATER CONSERV.* 419 (1999).

40. See Belsky et al., *supra* note 39. In the West, where water is scarce, these stream corridors provide habitat for sixty to eighty percent of all native species; they are even more vital to aquatic and amphibious organisms. It is thus not surprising that, nationwide, species that inhabit freshwater ecosystems are more endangered than any other group. Two-thirds of freshwater mussels are threatened with extinction; perhaps ten percent have already disappeared. Half of all crayfish species and forty percent of freshwater fishes and amphibians are at risk. Again, the risk to these species is disproportionately greatest in the arid West. See THE NATURE CONSERVANCY, *RIVERS OF LIFE: CRITICAL WATERSHEDS FOR PROTECTING FRESHWATER BIODIVERSITY*, available at <http://consci.tnc.org/library/pubs/rivers/index.htm>.

41. See DONAHUE, *supra* note 16, at 110-11; see also Ronald Micheli, *Response to "Role of Land Treatments on Public and Private Lands,"* in *DEVELOPING STRATEGIES FOR RANGELAND MANAGEMENT* 1422, 1424 (1984); Nate Green, *Ranchers Vow to Save Public Lands Grazing*, LARAMIE BOOMERANG (Wyoming), May 5, 2000, at 1 (reporting that University of Wyoming range science professor Quentin Skinner's claim that ranching has "created riparian zones"); SCOTT E. COTTON & ANN C. COTTON, *WYOMING CRM: ENHANCING OUR ENVIRONMENT*, n.p., n.d.; Micheli, *supra* note 28 (asserting: "Ranchers provide habitat for wildlife, clean water, and, most of all, open spaces.").

recognized⁴²—depends not only on the nature and extent or duration of the change but on who causes it. It is often said that no one likes change, especially in his own backyard (except, of course, when we intentionally overhaul our own backyards). But the concept of a backyard has become more complicated and diluted as our society has become increasingly global; it is more controversial when we are dealing with *public* lands, which are the “backyards” of all Americans.

Change is inevitable, and humans are masters at it. Unlike perhaps all other organisms, humans more often *change their environment* than adapt themselves to it. While there are other animal engineers (beavers, prairie dogs, and ants are prime examples), next to humans they are neophytes at environmental modification. We cool and heat our homes and buildings and clothe our bodies using nonrenewable resources. We level the land, strip it of vegetation, and cover it with impervious surfaces to build on it. We move water through mountains to distant drainages to grow crops developed in laboratories or imported from other parts of the world. We replace existing biota with plants and animals that we find more decorative, lucrative, or useful. We seldom acknowledge that the changes we cause, whether inadvertently or by design, have adverse consequences—often for our human neighbors, nearly always for the environment and natural systems.

Some would rationalize these consequences, arguing not only that change is inevitable, but that species which fail to adjust to changing environments ultimately are forced out by more adaptive organisms. This approach is a favorite of the “rugged individualists” in economic, social, and political policy arenas. But it ignores certain crucial facts: Alterations of the environment brought about by humans using technologies developed in the past two hundred years are outside the range of historical, natural ecological change. As a result, species are now becoming extinct at rates greater than at any time in the history of the planet. Our eroded soils will take thousands of years to replace. By our use of fossil fuels and other substances, we are causing or contributing to changes in climate that are likely to have widespread and insidious effects. We continue in these destructive patterns even though humans

42. For instance, Bob Budd, manager of The Nature Conservancy’s showcase Red Canyon Ranch near Lander, Wyoming, called on ranchers and environmentalists to “care for the natural world,” warning that “we’re going to lose things before we even know they’re gone.” Coleman Cornelius, *Goals Ranging Closer Together: Environmentalists, Ranchers Join to Talk*, DENV. POST, May 4, 2000, at 6B. I am concerned that we will “lose things” even before ranchers know (or care) that they were there in the first place.

have yet to demonstrate that they can restore, much less create, functioning natural ecosystems or landscapes.

Restoring the land's health—bringing justice to the earth—should have a special place on the twenty-first-century frontier. By this, I do not mean that we could or should attempt to stop change from occurring. Conserving or preserving nature does not mean freezing a place in time or restoring it to so-called “pristine” conditions. Neither is possible; nature is not static. On the other hand, if we wish to maintain a healthy, functioning planet for ourselves and our descendants, we must allow *natural* ecological processes—*change*—to take place. “Preservation” thus means reinstating natural change processes and conserving dynamic, functioning systems—communities, landscapes, even the biosphere. Before natural processes can resume, however, the overwhelming influence of human alterations of the environment must be lessened or removed.

Pursuing preservation objectives will be a huge task whose success will depend on efforts on many fronts. Reforming agriculture (admittedly, both an ambiguous rubric and a challenging prospect) could do more to restore natural ecosystem functioning than any other single measure. The West enjoys a perhaps-unparalleled opportunity to make some headway in this regard. While few if any western landscapes have been unaltered by humans, ecosystems either continue to function semi-naturally or possess the potential to resume natural functioning over a larger area of the West than any other region of the country. This is due in part to its shorter history of settlement, its huge land area, and its dispersed population. In addition, the West contains the vast majority of the nation's public lands. Private property rights and expectations pose less of a hurdle to preservation efforts on public lands, and the federal government can (and should) play a greater role per its responsibility to manage these lands for the benefit of present and future generations of Americans.

I recommend that the task of securing justice for the earth begin with the reform of public land grazing policy. Specifically, I have suggested that we remove livestock from arid public lands.⁴³ Ending or manipulating livestock grazing could be the single most effective tool for restoring land health, given the huge area this land use occupies (nearly 270 million acres of public lands) and its potential to wreak irreversible ecological change on arid landscapes. In the remainder of this paper, I

43. See generally DONAHUE, *supra* note 16.

discuss these and other factors, which have convinced me of the efficacy of ending public land livestock grazing.

Livestock and Deserts

In the past twenty years or less the science of range ecology has undergone a major change in thinking. Long-held beliefs regarding plant ecology and vegetation community dynamics have been deemed inapplicable to arid and semi-arid lands (generally considered those where average annual precipitation is twelve inches or less).⁴⁴

Range scientists and land managers once held that vegetative succession (changes in plant communities over time) was linear and followed predictable patterns on any given site, concluding with an identifiable "climax" community (termed the Clementsian model, after its originator, Nebraska ecologist Frederic Clements). Under this model, disturbances by factors outside the normal range of variability, most often livestock grazing, disrupt natural succession. Removing the source of the disturbance would correct the disruption (sometimes referred to as "retrogression"). In this way, natural succession could "get back on track."⁴⁵ Thus, according to the model, the undesirable effects of overgrazing or overstocking could be undone simply by removing livestock from a pasture for some period of time. Most ranchers and land managers still hold firmly to this view; it underpins the rotational grazing systems widely adopted, beginning in the 1970s, on public and private rangelands.⁴⁶

Most range ecologists now believe that the traditional Clementsian model is applicable only to mesic (humid and semihumid) grasslands. A different vegetative model, supported by extensive empirical evidence from several parts of the world, has been developed for arid and shrub-dominated lands.⁴⁷ Ecologists refer to this model by various labels: the "state-and-transition," "alternative steady states," "multiple

44. See *id.* at 9, 143-59 (and sources cited therein).

45. See *id.* at 143-44 (and sources cited therein).

46. A similarly popular misconception is that "one good rain" will undo the effects of years of drought combined with decades of overstocking. See S.W. McClure, *Address by Dr. S.W. McClure before the National Convention* (Feb. 1932), in NATIONAL WOOL GROWER, Feb. 1932, at 39, 40, 57.

47. See DONAHUE, *supra* note 16, at 152-59 (and sources cited therein). According to the Society for Range Management, ecologists have "largely abandoned" Clementsian successional theory. See *id.* at 153. See also NATIONAL RESEARCH COUNCIL, RANGELAND HEALTH: NEW METHODS TO CLASSIFY, INVENTORY, AND MONITOR RANGELANDS 62-63 (1994) [hereinafter Rangeland Health] (recounting extensive empirical evidence supporting the state-and-transition model).

climaxes," or "multiple steady states" model. A crucial difference between it and Clements's model is the incorporation of a threshold principle. That is, the state-and-transition model recognizes that disturbances on arid lands may cause permanent vegetative change to occur, if some disturbance threshold is exceeded. The change can be thought of as a "threshold shift between two ecological states," one natural and one human-induced.⁴⁸ The threshold may consist of soil or vegetative conditions or both. The change is irreversible: Once site conditions cross a threshold, vegetative succession will not "get back on track" even if the disturbance ceases. Nor will other, pre-disturbance ecological conditions return. Instead, the conditions will produce an "alternative steady state" (i.e., an alternative to the supposed "climax" condition). If the disturbance continues, site deterioration will also continue. Passing yet another ecological threshold will lead to the establishment of yet a different, even more degraded, ecological steady state.⁴⁹

Several regional vegetative shifts, or transitions, have occurred in the West, each within the relatively short time since Euro-American settlement.⁵⁰ One of the most familiar is the replacement of perennial bunchgrass and open sagebrush stands with annual grasses and forbs, particularly nonnative ("exotic") species.⁵¹ The conversion of sagebrush-grass to cheatgrass, a grass native to Eurasia, drastically reduces the land's productivity for both native flora and fauna and livestock. The potential subsequent transition from cheatgrass to another exotic, medusahead wildrye, results in even more impoverished landscapes. Where these species become established, they "may not feasibly be extirpated."⁵² Within a century, cheatgrass has come to dominate more than one hundred million acres in the Intermountain West alone. "Cheatgrass deserts" (monocultures) are found in Idaho, Nevada, Oregon, Utah, and Wyoming.⁵³

48. See Rangeland Health, *supra* note 47, at 62-63.

49. See DONAHUE, *supra* note 16, at 151 (and sources cited in n.112).

50. See *id.* at 148 (and sources cited in nn.102, 104).

51. Others include the shift in California's Mediterranean grasslands from perennial bunchgrasses to annual grasses, and from tallgrass prairies and savannas in the Southern plains to oak, juniper, mesquite, and other scrub woodlands. See REED F. NOSS & ALLEN Y. COOPERRIDER, *SAVING NATURE'S LEGACY* 230 (1994).

52. Edith B. Allen, *Restoration Ecology: Limits and Possibilities in Arid and Semi-arid Lands*, in *PROCEEDINGS: WILDLAND SHRUB AND ARID LAND RESTORATION SYMPOSIUM 10* (Bruce A. Roundy et al. eds., Sept. 1994). See also Kenneth B. Sanders, *Can Annual Rangelands Be Converted and Maintained as Perennial Grasslands through Grazing Management?*, in *PROCEEDINGS: WILDLAND SHRUB AND ARID LAND RESTORATION SYMPOSIUM 412* (Bruce A. Roundy et al. eds., Sept. 1994).

53. See DONAHUE, *supra* note 16, at 149-51.

Whether disturbance-induced changes exceed some site threshold and become permanent, or are less severe and reversible, the impacts extend beyond plants and soil conditions to native fauna (including insects), water quantity and quality, and all ecosystem functions.⁵⁴ To offer just one illustration: In the twenty-five years since I worked on the BLM's Snake River Birds of Prey Natural Area in southwestern Idaho, more than 70% of the native sagebrush has been replaced by an annual community dominated by cheatgrass. In turn, populations of the principal prey species, Townsend ground squirrels, have plummeted, and the world-renowned nesting densities of nearly all raptors (hawks, owls, and eagles) have declined. Only one raptor has benefitted from this human-induced change, the ground-nesting burrowing owl, which prefers more open vegetative types.⁵⁵

Livestock grazing has been a major cause of each of the regional vegetative shifts noted above. The mechanisms by which cattle, horses, and sheep cause or contribute to these changes are many: They deposit undigested seeds in their feces, and they bring in seed from other areas in their hair or digestive tracts. Cattle, in particular, graze native grasses preferentially, which gives a competitive edge to less preferred plants (including "weedy" species and nonnatives). Livestock trample the vegetation and soil, thus favoring species more resilient to disturbance. They remove vegetative cover, thus contributing to the drying of surface soils and eventual desertification of the site. Other factors, such as drought or altered fire cycles, have played a part in altering the look and health of western landscapes. But in nearly all cases, livestock grazing has had a supporting, if not leading, role.⁵⁶ Sheridan concluded that livestock overgrazing is "the most potent desertification force, in terms of total acreage affected, within the United States."⁵⁷

The *production* of livestock has contributed to the demise of native western species in other ways, notably via predator and pest control activities, the dewatering of streams, and various range "improvement" practices, such as road and fence construction and vegetative manipula-

54. See, e.g., Belsky et al., *supra* note 39; DAVID SHERIDAN, *DESERTIFICATION OF THE UNITED STATES* (Center on Environmental Quality 1981); NOSS & COOPERRIDER, *supra* note 51.

55. E-mail from Richard Howard, Biologist, U.S. Fish & Wildlife Service, to Debra L. Donahue, Assistant Professor of Law, University of Wyoming College of Law (Jan. 26, 2000, 17:32 MST) (on file with author).

56. See William A. Laycock, *Stable States and Thresholds of Range Condition on North American Rangelands: A Viewpoint*, 44 J. RANGE MGMT. 427, 432 (1991); Rex Pieper, *Grazing Systems and Management*, in RANGELANDS 14-15 (Bruce A. Buchanan, ed., 1988).

57. See Sheridan, *supra* note 54, at 121.

tions. All of these management practices help support commercial stocking of ranges at rates governed by short-term economic motives, not by ecological processes, thus ensuring that commercial grazing is an unsustainable land use. Yet the federal government continues to sanction, even finance, many of these measures.⁵⁸

Consequently, western landscapes have changed immensely in a relatively short time (*very* short, by evolutionary or geological standards). While some changes were inevitable accompaniments to Euro-American settlement, others were avoidable, had we “known better” or heeded the warnings of a few seers.⁵⁹ Some of the transformations cannot be undone, given the lands’ aridity and fragility and our current knowledge and technological and budgetary limits. Distinguishing between those sites and others, where conditions have not crossed ecological thresholds, should be the first priority of preservation efforts. In the latter areas, we retain the opportunity, if not an imperative, to arrest our course—to optimize the conservation of native species and to restore functioning, healthy ecosystems.

Removing Livestock to Make Room for Natives

It is beyond dispute that livestock grazing is chiefly responsible for the degraded condition of soils, vegetation, and water on western rangelands, as well as a threat to the survival of many native species. More significant for preservation objectives, there is good reason to believe that removing livestock would go a long way toward conserving native species and restoring ecological functions on landscapes that have not exceeded an ecological threshold. Indeed, the federal land management agencies themselves recently predicted that “watershed and water quality conditions would improve to their maximum potential” if livestock were removed entirely from western public lands.⁶⁰

58. See DONAHUE, *supra* note 16, at 126-32.

59. The potentially irreversible impacts of livestock grazing in arid lands were not widely understood, or explained by ecologists, until late in the twentieth century. Nevertheless, many suspected and warned of these consequences, including members of Congress in the debates leading to passage of the Taylor Grazing Act, 43 U.S.C. §§ 315-315r (1996). See DONAHUE, *supra* note 16, at 34-35 (recounting discussion of western range’s desertified condition, during debates prior to passage of TGA). See also DAVID A. ADAMS, RENEWABLE RESOURCE POLICY: THE LEGAL-INSTITUTIONAL FOUNDATIONS 101 (1993) (quoting John Wesley Powell who warned that western grasses were “nutritious but scanty,” and who believed that the western deserts were “beyond redemption, even for grazing”); USDA-FOREST SERVICE, THE WESTERN RANGE: A REPORT ON THE WESTERN RANGE—A GREAT BUT NEGLECTED RESOURCE. S. DOC. NO. 199, at 1936 (74th Cong., 2d Sess. 1979), *reprinted* by Arno Press.

60. U.S. DEP’T OF THE INTERIOR—BUREAU OF LAND MANAGEMENT, RANGELAND

Removal of livestock will not, in all cases, return the range to presettlement ("natural") conditions. As noted earlier, where an ecological threshold has been exceeded, such reversion is practically infeasible, if not impossible.⁶¹ Even where conditions have not exceeded a threshold, healthy ecological conditions may "need help" reestablishing, e.g., some sort of vegetative manipulation, perhaps using fire or insects. (Proposals to use livestock as tools to achieve these changes should be examined critically, however, and commercial livestock grazing has no utility as a range restoration tool.⁶²) Still, more healthy vegetation, soil, and water conditions can be achieved on many arid ranges simply by removing livestock. This is especially true for landscape-size areas. The larger the area, and the more natural its conditions, the greater its potential for recovery.⁶³ There is substantial, and growing, evidence that terminating livestock grazing on arid rangelands will allow land healing to begin.⁶⁴ Land managers contemplating a restoration program must be willing to examine and consider not only the range ecology literature, however, but the writings of conservation biologists.⁶⁵

Having concluded that removing livestock would reap ecological

REFORM '94 DRAFT ENVIRONMENTAL IMPACT STATEMENT EXECUTIVE SUMMARY 41 (1994) [hereinafter Rangeland Reform Summary].

61. See, e.g., DONAHUE, *supra* note 16, at 180-81 (and sources cited therein).

62. See, e.g., Keith E. Severson & Philip J. Urness, *Livestock Grazing: A Tool to Improve Wildlife Habitat*, in *ECOLOGICAL IMPLICATIONS OF LIVESTOCK HERBIVORY IN THE WEST* 241-42 (1994). See also DONAHUE, *supra* note 42, at 180-82.

63. See Reed F. Noss, *A Regional Landscape Approach to Maintain Biodiversity*, 33 *BIOSCIENCE* 700, 704 (1983). A landscape is "a kilometers-wide area where a cluster of interacting stands or ecosystems is repeated in similar form." See *id.* at 700 (citation omitted).

64. See, e.g., Richard F. Miller, Tony J. Svejcar, and Neil E. West, *Implications of Livestock Grazing in the Intermountain Sagebrush Region: Plant Composition*, in *ECOLOGICAL IMPLICATIONS OF LIVESTOCK HERBIVORY IN THE WEST* 126 (1994); William A. Laycock, *Implications of Grazing vs. No Grazing on Today's Rangelands*, in *ECOLOGICAL IMPLICATIONS OF LIVESTOCK HERBIVORY IN THE WEST* 258-59 (1994); Noss & Cooperrider, *supra* note 51, at 235. See also George Cameron Coggins, *The Law of Public Rangeland Management V: Prescriptions for Reform*, 14 *STAN ENVTL. L. J* 497, 538 (1984).

65. See, e.g., DONAHUE, *supra* note 16, at 180-81. The production-oriented bias of range science is widely acknowledged and nearly impossible for an impartial or critical reader to overlook. See *id.* at 80-81. Thus, what the range science literature has to say on this subject must be regarded cautiously: Researchers rarely study or consider the effects of eliminating livestock; instead, they recommend rest, stocking reductions, changes in length or season of use, or changes in class of livestock. See generally National Research Council, *Developing Strategies for Rangeland Management* (1984). According to Professor Laycock, "range science has not kept pace with range ecology." Anna M. Gillis, *Should Cows Chew Cheatgrass on Common Lands?*, 41 *BIOSCIENCE* 668, 671 (1991)(quoting Professor Laycock).

benefits, the public land manager must next consider whether she has the authority to take this step. In an earlier analysis, which goes beyond what I can attempt here, I concluded that current federal law would authorize, if it does not actually mandate, the removal of livestock from arid public lands to prevent irreparable ecological damage to those areas.⁶⁶ That analysis focused on lands managed by the Bureau of Land Management, in part because those lands are predominantly arid. As a matter of science, of course, national forest lands that receive twelve inches or less annual precipitation are just as vulnerable to grazing-induced changes. In fact, the legal analysis justifying removal of livestock from portions of the national forests closely resembles that for BLM lands. The principal relevant statutes are the Federal Land Policy and Management Act (FLPMA),⁶⁷ Public Rangelands Improvement Act,⁶⁸ Clean Water Act,⁶⁹ and Endangered Species Act.⁷⁰ In addition, the Taylor Grazing Act⁷¹ pertains to BLM lands, while the National Forest Management Act⁷² governs planning and management on national forests.

Both agencies are directed to manage their lands so as to serve the long-term national interest; to follow multiple-use and sustained-yield principles; to use an interdisciplinary, scientific approach to planning and management; to consider the environmental effects of their activities; and to meet applicable pollution control laws.⁷³ Both must periodically inventory their lands and resources and make appropriate management changes based on changes in uses and demand.⁷⁴ Both have authority to cancel, suspend, or modify grazing permits, including canceling them "in order to devote the lands . . . to another public purpose."⁷⁵

In addition, FLPMA requires the BLM, when planning the use of its lands, to consider the "relative scarcity of values" and the "availability of alternate means . . . and sites" for realizing them, to "weigh long-term benefits to the public against short-term benefits," and to "give priority to the designation and protection of areas of critical environmental

66. See generally Donahue, *supra* note 16.

67. 43 U.S.C. §§ 1701-1784 (1994).

68. *Id.* §§ 1901-1908.

69. 33 U.S.C. §§ 1251-1387.

70. 16 U.S.C. §§ 1531-1543.

71. 43 U.S.C. §§ 315-315r.

72. 16 U.S.C. §§ 1601-1614.

73. See generally 16 U.S.C. §§ 1601, 1604 (1994) (regarding national forests); 43 U.S.C. §§ 1701, 1712 (regarding BLM lands).

74. See 16 U.S.C. § 1604; 43 U.S.C. § 1712. See also 43 U.S.C. § 1903(a).

75. 43 U.S.C. § 1752(a), (g) (grazing authority for both agencies).

concern.”⁷⁶ It further mandates that “[i]n managing the public lands the [BLM] shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands.”⁷⁷ Finally, it authorizes the agency to exclude or totally eliminate on some lands any of the “principal or major uses,” including livestock grazing.⁷⁸

In my view FLPMA *requires* the BLM to remove livestock from arid lands that are being “unnecessar[ily] or undu[ly] degrad[ed]” by livestock grazing. This requirement certainly extends to areas where the exceedance of an ecological threshold is imminent, and arguably to areas where grazing is causing or contributing to violations of state water quality standards.⁷⁹ At a minimum, FLPMA’s provisions *authorize* the agency to remove livestock on the basis of any of the above-stated planning guidelines—e.g., where other resource values (such as wildlife habitat) are more scarce, where the long-term benefits (e.g., improved water quality or native species conservation) outweigh short-term private benefits to grazing permittees, or where continued grazing would violate sustained-yield principles. As I explain more fully below, there can be no dispute that: (1) livestock grazing and pasture lands are not “scarce,” (2) livestock products can more easily be produced elsewhere, and (3) the only benefits produced by public land livestock grazing are “short-term private” ones.

Implicit in these conclusions is a foundational principle of the Taylor Grazing Act, a principle that the Interior Department has ignored for more than sixty years: the 1934 Congress knew that much of the arid West was unsuited to grazing; it directed, therefore, that grazing districts be established only on public lands “chiefly valuable for grazing or raising forage crops.”⁸⁰ The abundance of available pastureland and feedlot facilities in the United States, the minuscule value of livestock production on public lands, and escalating demands for other public land resources, the quality and value of which are diminished by grazing, leave no doubt that public lands are *no longer*, if they ever were, “chiefly valuable for grazing.”

76. See *id.* § 1712(c).

77. *Id.* § 1732(b).

78. See *id.* 1712(e). The statute specifies that elimination of a principal use on more than 100,000 acres or for two or more years must be reported to both houses of Congress. If both houses, by concurrent resolution, indicate their disapproval of eliminating the use, the agency must terminate the action. *Id.* § (e)(2). This provision raises potential unconstitutional “legislative veto” issues, see *INS v. Chadha*, 462 U.S. 919, 931-35 (1983), which are beyond the scope of this article.

79. See DONAHUE, *supra* note 16, at 225-27.

80. See 43 U.S.C. § 315 (1994). See also DONAHUE, *supra* note 16, at 193-203.

The deleterious impacts of domestic livestock on native species and precious western water supplies are further, persuasive reasons for ending this outdated use of public lands. These ecological impacts might contribute or give rise to an "unnecessary or undue degradation" determination under FLPMA, but they can also form the predicate for separate violations of the Clean Water Act or Endangered Species Act.⁸¹ For instance, the Idaho Watershed Project recently mailed sixty-day notice letters to ranchers, agencies, and water users in central Idaho, announcing its intention to sue under ESA section 9. The organization claims that diversions of waters from the Upper Salmon River and its tributaries "take" threatened and endangered species of salmon and trout by literally dewatering the streams or degrading critical habitat.⁸² And in the Southwest, suits brought under the ESA by the Southwest Center for Biological Diversity and Forest Guardians have yielded impressive results: the designation of nearly nine hundred stream miles of critical habitat in the Gila River Basin (and the removal of livestock from three hundred miles) to protect two endangered fish species, both imperiled by livestock grazing; and an agreement by the U.S. Forest Service to consult with the U.S. Fish and Wildlife Service over the impacts of seventeen grazing allotments on several threatened or endangered species.⁸³

Neither economic nor property-right-related considerations should affect this analysis or prevent the agency from taking appropriate remedial steps. First, FLPMA confirms that issuance of a grazing permit confers *no property interest* in BLM or national forest grazing lands.⁸⁴ This feature of the law has been widely recognized by the courts, including the U.S. Supreme Court,⁸⁵ and the federal government has taken this view of grazing privileges on forest reserves since before the turn of the century.⁸⁶

Second, public land grazing makes such an inconsequential contribution to employment, income, national livestock production, and even local economies that any legitimate economic analysis will support,

81. See DONAHUE, *supra* note 16, at 224-27.

82. See N.S. Nokkved, *Environmentalists Threaten Suit over Fish Harm*, THE TIMES-NEWS (Twin Falls, Idaho), Oct. 8, 2000, at 1.

83. See SOUTHERN CENTER FOR BIODIVERSITY, BIODIVERSITY ACTIVIST #254 (Oct. 2, 2000). The species of concern are the loach minnow, spikedace, southwestern willow flycatcher, and Mexican spotted owl.

84. See 43 U.S.C. § 1752(h) (confirming existing law, including 43 U.S.C. § 315b).

85. See, e.g., *United States v. Fuller*, 409 U.S. 488 (1973); *Public Lands Council v. Babbitt*, 529 U.S. 728 (2000). See also DONAHUE, *supra* note 16, at 39, 86-87.

86. See DONAHUE, *supra* note 16, at 17 (describing 1899 General Land Office grazing regulation, which provided that "stockmen used the forest only as a privilege and not as a right, and that the Secretary could exclude them entirely at his direction").

rather than undermine, the conclusion that livestock grazing should be ended on public lands where it is impacting other resources or the environment. To illustrate: Fewer than 23,000 "persons" (individuals, companies, grazing associations) hold federal permits to graze public lands; beef producers with federal permits account for only 3% of the more than 900,000 producers in the lower forty-eight. The actual number of jobs attributable to federal land grazing in the eleven western states is about 18,000—or 0.06% of all jobs in the West. Nearly 270 million acres of BLM and Forest Service lands are grazed, but these lands account for only 2% of U.S. livestock products. Farm-and ranch-related jobs are among the lowest paying; only domestic servants are paid less. Since 1900, western cattle ranches have earned only 1-3% on capital investment; about half of all small and medium-sized operations fail to turn a profit. Three-fourths of BLM permittees run fewer than 100 head of cattle, too few to support a family. Since the early 1970s, if not before, 80% of public-land ranchers in Arizona required other jobs or outside income to help support the ranch; today, more than half of all public land ranches are supported in part by off-ranch employment or other income.⁸⁷

Ranching would never have developed to the extent it did in the West without free or government-subsidized grazing. Homesteaders claimed only the best parcels, usually those along watercourses or containing springs. Most graziers and the states did not want title to the remainder of the western range, much of which was desert or already depleted by overgrazing, or both. Their view, which eventually prevailed in Congress, was: Why pay taxes on these grazing lands if the federal government will allow their use for no charge or only a pittance?⁸⁸

The economic evidence, in other words, supports the ecological evidence.

By their own account, most ranchers are in the business not to make money but because they enjoy the lifestyle. The land management agencies and even the courts have recognized that this is so, thereby suggesting that maintenance of a preferred lifestyle is a legitimate objective of federal public land policy.⁸⁹ Neither agency nor any court has cited law to defend this reasoning—not surprising, since no statute even hints that the cultural or lifestyle preferences of any public-land user

87. See *id.* at 250-63 (citing sources for these and similar statistics).

88. See *id.* at 196-99.

89. See, e.g., *Natural Resources Defense Council v. Hodel*, 624 F. Supp. 1045, 1056-57 (D. Nev. 1985), *aff'd*, 819 F.2d 927 (9th Cir. 1987); *Rangeland Reform*, *supra* note 15, at 3-68.

group merit special treatment. On the contrary, as noted above, FLPMA indicates repeatedly that it is the *national* interest, not local or private interests, and certainly not sentiment, that should govern public land management choices.

Ironically, the beneficiaries of this sentimental approach to land management include not only “small, family ranches,” but corporate giants such as Anheuser-Busch and wealthy individuals such as J.R. Simplot, Oscar Wyatt, William Hewlett, and David Packard.⁹⁰ As irrational as it may seem, this phenomenon is consistent with the nation’s approach to agricultural policy as a whole—we formulate policy on the needs or perceived needs of the small farm, even though the lion’s share of production comes from the agribusiness operations.

Public-land ranchers assert two additional arguments for their continued grip on the land: to ensure the continued vitality of certain small western communities and/or to maintain private-land open space.⁹¹ These arguments, too, are easily refutable, if not actually specious. Almost thirty years ago two agricultural economists studied public-land ranching in Arizona and concluded that the “availability of jobs in the local area may well have stronger impact on the survival of current ranchers in the area than the ranchers have on the viability of the local community.”⁹² The “implication,” they said, “is that the town keeps the present rancher going; one might be so extravagant as to suggest that

90. Anheuser-Busch cattle graze along a designated wild and scenic river within the Golden Trout Wilderness Area (designated in large part to protect the last remaining habitat of native golden trout, the California state fish) in California. The managing agency, the Forest Service, acknowledges the impacts of livestock (loss of threatened species habitat, widespread erosion, and degraded water, recreational, and aesthetic qualities). Indeed, the namesake of the wilderness area may soon be added to the endangered species list, thanks largely to the negative impacts of livestock grazing and introduced nonnative trout. See Jim Doyle, *California’s State Fish Is Disappearing: Group Wants Golden Trout on Endangered Species List*, SAN FRANCISCO CHRONICLE, Oct. 14, 2000 at A17, available at <http://www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archives/2000/10/14/MN16450.DTL>. Yet the Forest Service plans to allow grazing to continue in this area. See, e.g., RANGENET NEWS, Oct. 9, 2000, available at <http://www.rangenet.org>. See also Timothy Egan, *In Battle over Public Lands*, N. Y. Times, July 21, 1995, at A1, A12 (reporting that the Forest Service had been “working for years to force [Messrs. Hewlett and Packard] to keep their cattle out of streams and fragile meadows” in Idaho).

91. See, e.g., Micheli, *supra* note 28 (asserting: “Ranchers provide habitat for wildlife, clean water, and, most of all, open spaces.”).

92. Arthur F. Smith & William E. Martin, *Socioeconomic Behavior of Cattle Ranchers, with Implications for Rural Community Development in the West*, 54 AM. J. AGRIC. ECON. 217, 224 (1972).

ranching has no economic impact on the town."⁹³ These scientists suggested that "an alternative use of the local rangelands, such as for recreation, might enhance the town's viability and growth."⁹⁴ But they also warned that community leaders are unlikely to consider economic development proposals seriously, given that the local leadership generally includes ranchers, and ranchers will attempt to hold on to their chosen way of life.⁹⁵

As noted earlier, operators of small farms and ranches rely increasingly on nonfarm or nonranch (off-ranch) income to make ends meet.⁹⁶ As University of Montana economist Thomas Michael Power put it, agriculture "increasingly depends on the vitality of urban and nonagricultural rural economies to provide the nonfarm income that keeps farm operations alive."⁹⁷ Smith and Martin, Power, and other authorities have long recommended that rural communities in the West must diversify if they are to survive.⁹⁸ Economic diversification away from the boom-bust cycles of depletable, nonrenewable resources will not merely allow communities to survive, it is likely to enhance their viability. A 1989 University of Idaho study, for example, showed that "between 1970 and 1985 amenity-oriented California, Colorado, Idaho, Montana, and Wyoming counties with federally designated wildernesses tended to grow more than extraction-oriented rural counties without them."⁹⁹

But even if some local communities depend on ranching, this is not an argument to keep livestock on *public lands*. The General Accounting Office concluded in 1992 that local communities in the Southwest (including Arizona, where half or more of cattle forage comes from public lands¹⁰⁰) "are not dependent on public lands ranching."¹⁰¹ More than 70% of cattle producers in the West own all the land on which they

93. *Id.*

94. *Id.*

95. *See id.* *See also supra* note 89 and accompanying text.

96. *See supra* note 87 and accompanying text.

97. *See Power, supra* note 15, at 188.

98. *See, e.g., Smith & Martin, supra* note 92; Power, *supra* note 15; PUBLIC LAND LAW REVIEW COMMISSION, ONE THIRD OF THE NATION'S LAND (1970); Jerry L. Holechek et al., *Macro-Economics and Cattle Ranching*, 16 RANGELANDS 18, 122-23 (1994); Rangeland Reform, *supra* note 15, at 3-74 to 3-75.

99. Cited in Popper & Popper, *supra* note 12.

100. *See DONAHUE, supra* note 16, at 253. Arizona's level of dependence on public land forage is an exception to the general rule in the West.

101. GENERAL ACCOUNTING OFFICE, RANGELAND MANAGEMENT: BLM'S HOT DESERT GRAZING PROGRAM MERITS RECONSIDERATION (1992), at 4, 47-48. The auditors pointed out that no one (agency officials or livestock operators or representatives) supplied any quantitative evidence to support their view that grazing provided a significant share of the tax base of local communities. *See id.* at 47-48.

operate.¹⁰² Only 22% of beef producers and 19% of sheep/lamb producers in the West enjoy federal grazing privileges.¹⁰³ Furthermore, most federal grazing permittees have indicated that, if they lost their federal permits, they would figure out some way to stay in the ranching business—e.g., take an off-ranch job, diversify on-ranch operations, downsize, consolidate with neighboring operations, etc.¹⁰⁴

In other words, because public lands' contribution to U.S. livestock production is minuscule, and ranchers stay in business for the lifestyle not the economic rewards,¹⁰⁵ ranching will survive without public lands. Even those local communities that depend economically on ranching will be impacted little if at all if *public land* forage were no longer available.

Some of the foregoing analysis also applies in refuting so-called "open-space" arguments.¹⁰⁶ Since only a minority of ranchers use public lands, and most of them assert that they would continue to ranch even without federal grazing privileges, there is little or no basis for hypothesizing a causal relationship between elimination of *public* land grazing and subdivision of *private* ranch lands. Moreover, nothing now prevents ranchers from subdividing their private lands (assuming a market exists for the land) if they so choose. It is not public land grazing privileges that keep most ranchers "on the land," but the real estate market and/or ranchers' desire to maintain a chosen lifestyle.¹⁰⁷

Consider, for example, the recent case of the Willow Springs Ranch in Pinal County, Arizona. Far from resisting pressures to subdivide private land, this cattle ranch was "[l]eading the effort" to push new development on private and state lands. The ranch owner (the Amam family) and other developers, who were "seeking to beat a proposed urban growth boundary initiative," flooded the county planning and zoning commission with proposed rezonings for more than 60,000 new homes. The Amams alone proposed 34,000 of them (literally a new city), along

102. Rangeland Reform, *supra* note 15, at 3-66.

103. *Id.*; see also Rangeland Reform Summary, *supra* note 60, at 24.

104. See DONAHUE, *supra* note 16, at 264-66 (citing sources).

105. See *supra* text at note 89. See also Thadis Box, *The American Rangeland in a Time of Change*, in *ACHIEVING EFFICIENT USE OF RANGELAND RESOURCES 2-3* (Richard S. White & Robert E. Short, eds., Feb. 1988); Starrs & Huntsinger, *supra* note 18, at 40.

106. See generally DONAHUE, *supra* note 16, at 273-76.

107. Colorado loses 250,000 acres of farm and ranch land annually to commercial and residential development, according to Dr. Richard Knight of CSU. See Cornelius, *supra* note 42, at 6B. Not all western states, of course, are undergoing the boom or economic prosperity Colorado is experiencing. The demand for developable land depends on a number of tangible and intangible factors.

with “five golf courses and resorts, shopping centers, vineyards and high-tech industries.” The \$500-800 million development would be “leapfrog sprawl,” located principally on state lands.¹⁰⁸

This raises another important point, which advocates of the open-space argument conveniently (or intentionally) overlook. Open spaces in the West are predominantly *not* privately owned. Arizona again provides an illustration. Only 17.6% of the land area of Arizona is in private hands; 30.6% is federal; 12.8% is State-owned; and Indian tribes hold 27.4%. This means that the overwhelming majority of Arizona “open space” will never be for sale. Keeping ranchers on private ranch land in Arizona would have, at best, an imperceptible effect on the apparent openness of Arizona landscapes.¹⁰⁹

In any event, if a majority of citizens wish to protect private-land open space, the responsibility for achieving that objective falls to state and local governments, or to the voters themselves via ballot initiatives, not to federal agencies. The proper tools are local zoning, comprehensive state land use legislation, tax incentives or exemptions, transferable development rights, and other state or local law mechanisms.¹¹⁰

The abiding dilemma is that nearly all of the public lands (as well as a good portion of the private ones) across the West have cattle or sheep on them. Therein lies the fatal flaw of the open-space argument. Advocates of ranching as an open-space conservation tool (whether ranchers, politicians, agency officials, or conservationists) seldom consider the ecological condition or habitat quality of the private open space they aim to preserve, nor the ecological impacts of the asserted remedy—continued livestock grazing on public lands.¹¹¹ “Open space” means merely an uncluttered landscape. It is not synonymous with healthy functioning ecosystems. Healthy, functioning ecosystems will not persist in “open space” characterized by weeds and dirty (or no) water, a lack of native species, and eroded soils. Yet this is an accurate description of much of the grazed land, private and public, in the West.

108. See Tony Davis, ARIZONA DAILY STAR, Sept. 18, 2000. Internet source: www.azstarnet.com/public/dnews/000918newpinal.html. (online access requires membership).

109. E-mail from Dr. Robert A. Witzeman, Conservation Chair, Maricopa Audubon Society, Phoenix, to Debra L. Donahue, Assistant Professor of Law, University of Wyoming College of Law (Sept. 13, 2000, 08:42 MST) (on file with author).

110. See DONAHUE, *supra* note 16, at 275-76.

111. See Whipple, *supra* note 17 (quoting TNC official about the importance of saving family ranches).

Keeping cattle on public lands in order to keep ranchers, and open space, on private lands is misguided and short-sighted public policy. A sounder approach, ecologically and fiscally, would be to end the public land grazing program and offer deserving public-land ranchers transition payments, conservation easements or incentives, and/or purchase options. In this way we might begin the process of restoring health to arid public lands.

Only in places with water can we expect recovery to be rapid. On the dry ranges and rocky slopes the scars will remain (or worsen), reminders for decades of our ignorance and lack of care. Removing livestock from riparian areas, where water is present, can yield dramatic results, benefiting hundreds of species. Biologists estimate that 60 to 80% or more of western vertebrate species depend on or are associated with these areas. The San Pedro River alone, in southern Arizona, is home to more than five hundred species of birds, mammals, amphibians and reptiles, and fish. These native inhabitants compete with livestock for forage, water, and cover—and they generally lose the contest. The availability of water in riparian areas, and their more moderate microclimate, enhances the potential of riparian vegetative communities to recover when stressors (e.g., livestock) are removed.¹¹² The removal of livestock also facilitates the reestablishment of natural hydrological processes, because bank erosion and bedload are decreased, and the enhanced growth of woody species contributes to bank stability.¹¹³

These “ripple” effects remind us that water is the lifeblood of the arid West. Indeed, it is the fount of all life on earth, as we know it. The homesteaders and ranchers who claimed this country were well aware of this central truth. They demonstrated that awareness by the lands they took under ownership and by the rights they asserted over the rivers and streams.

Our common language, too, echoes the sound of water—in our metaphors for change and our attitudes towards it: “go with the flow,”

112. See generally DONAHUE, *supra* note 16, at 124, 152, 172-73 (and sources cited therein). Cattle, too, prefer riparian areas, which is the root of the problem. In one stark example, from Oregon, riparian areas comprise only 2% of a grazing allotment's overall area, but produce 20% of the available forage and 80% of the forage actually consumed by cows. See Belsky et al., *supra* note 39, at 427 (citing Roath and Krueger 1982).

113. See, e.g., Jon M. Skovlin, *Impacts of Grazing on Wetlands and Riparian Habitat: A Review of Our Knowledge*, 1001-1103, in RANGELAND HEALTH, *supra* note 47; Wayne Elmore, & Boone Kaufman, *Riparian and Watershed Systems: Degradation and Restoration*, in *ECOLOGICAL IMPLICATIONS OF LIVESTOCK HERBIVORY IN THE WEST* 212-31 (M. Vavra et al., eds., 1994).

“don’t rock the boat,” “water under the bridge,” “you can’t hold back the river.”¹¹⁴

Water is the most dynamic part of the landscape, scarring with erosion, yet at the same time healing—dispersing fertile sediment and engendering new growth. Water tears down the mountains, enlarges the sweep of the plains, and deepens the courses of canyons. To know the work of water is to know change itself. But, ironically, those controlling the greatest share of water in the arid West seem least able to accept the inevitability of change, let alone to understand it.

Is the West Enslaved to Its Past?

In calling for a reinvention of the western frontier,¹¹⁵ for a change in the cause of justice, one does well to search our common history: What changes—“unthinkable” perhaps in their time—have taken place that might offer examples, or give us a measure of hope for the future?

One hundred fifty years ago, one region of the United States felt especially threatened by the prospect of change. Agricultural landowners felt that not only their property rights but their very relationship to their land—the “custom and culture” inherited from their forebears—was in jeopardy. In numbers a minority, even in their home states, they were nevertheless powerful, dominating their state legislatures, holding decisive power in Congress, and contesting the issue, case-by-case, in the courts.¹¹⁶

The region, of course, was the Old South. The “custom and culture” was that of slavery. As Professor Limerick observes:

Like slavery, conquest [of the West] tested the ideals of the United States. Conquest deeply affected both the conqueror and the conquered, just as slavery shaped slaveholder and slave. Both historical experiences left deep imprints on particular regions

114. See, e.g., Charles Schroeder, Address at the Frontier Justice Symposium (October 20, 2000) (referring to the federal “policy cross currents that are buffeting the [range livestock] industry”).

115. See Popper & Popper, *supra* note 12, at 4-7.

116. Southern planters were also disproportionately wealthy, compared to both northern farmers and southern free farmers (non-slave-holding). ROGER L. RANSOM, *CONFLICT AND COMPROMISE: THE POLITICAL ECONOMY OF SLAVERY, EMANCIPATION, AND THE AMERICAN CIVIL WAR* 62-63 (Cambridge Univ. Press, 1989).

and on the nation at large. The legacy of slavery and the legacy of conquest endure, shaping events in our own time.¹¹⁷

The present struggle over the West is not over the ownership of human beings but for control of the land and water. The tiny minority of ranching residents are heirs to a vast and deeply ingrained stereotype: noble pioneers converting the wilderness to a garden. The arid lands, and Alaska, are the last bitter stronghold of Manifest Destiny.

In their time, proponents of slavery predicted that its end would bring the collapse of commerce, the death of agriculture, and the loss of irreplaceable tradition. But the war that followed, a war fought in defense of the "custom and culture" of a minority of citizens, wrought even greater devastation.

But who would argue today that a great wrong and terrible suffering were not thereby corrected? And who could argue, despite the anguish and disruption proceeding from this particular change, that justice was not done?

Limerick concedes that "to most twentieth-century Americans, the legacy of slavery was serious business, while the legacy of conquest was not." Whereas the "subject of slavery was the . . . occasion for serious national reflection," the "subject of conquest was the domain of mass entertainment and the occasion for lighthearted escapism." As she put it: "Children happily played 'cowboys and Indians' but stopped short of 'masters and slaves.'" ¹¹⁸

Some may be offended at the comparison being drawn here. I am not equating, or even comparing, livestock grazing with slavery.¹¹⁹ Rather, I am suggesting that the history of the Old South offers a lesson for balancing society's (and the earth's) need for change with the demands of one group for preserving its social, economic, and cultural traditions. Both the Old South and the New West are defined in part by a traditional social class, in numbers a small minority, struggling to ignore, or evade, inevitable change.¹²⁰

117. Limerick, *supra* note 7, at 18.

118. *See id.* at 18-19.

119. As an aside, however, I note that Professor Freyfogle has written: "If we are serious about improving relations with nature, we must stop thinking of it as a slave." FREYFOGLE, *supra* note 1, at 56.

120. "For the vast majority of [southern] planters, [the Civil War] was the War for Southern Security. To make secure the way of life associated with plantation slavery was their primary motivation." JAMES L. ROARK, *MASTERS WITHOUT SLAVES: SOUTHERN*

Southern planters entered the Civil War convinced that plantations and slavery were one. Plantations would not have developed except for slavery, and without slavery they would die. The growers of sugar, rice, and cotton agreed that,

“this country without slave labor would be wholly worthless, a barren waste and desolate plain.” Emancipation would mean not only that grass would envelop proud plantations but that it would grow in the streets of every Southern city as well. Without slavery they believed, the South would experience racial warfare, social anarchy, and economic collapse. Because they identified their entire society with their labor system, they concluded that emancipation would mean the end of everything decent in Southern life.¹²¹ “[Planters] could not reject or even compromise their central myths, for to do so would mean condemning a whole culture as a lie.”¹²²

The author of this insightful history, *Masters Without Slaves*, goes on to describe the aftermath of the War and its consequences for plantation life:

The planters' readjustments proved that men and women are capable of surprisingly rapid shifts in ideas and technologies, even when those are related to the central issues of their existence. After the defeat, planters had little choice but to find a place for themselves in the accepted intellectual framework of the day, just as they had little choice but to reconstruct plantations with-

PLANTERS IN THE CIVIL WAR AND RECONSTRUCTION 31-32 (W.W. Norton & Co., 1977) (citing Rowland Berthoff). See also *supra* note 116 and accompanying text.

121. ROARK, *supra* note 120, at 106. The planters believed that the “destruction of plantation agriculture would mean the obliteration of Southern ‘civilization, society, and government.’” *Id.* at 101 (citing Robert F. Durden for quote). See also *id.* at 206-07 (“Masters without slaves, thrust into an alien, unpredictable world, planters felt a loss of historical continuity, a loss of sameness and wholeness. . . . [T]o a Georgia planter, ‘All that we were seemed to be passing away’” (quoting Rev. John Jones)). While not all Southerners, and not even all planters agreed,

a significant portion of the gentry hoped that the Confederacy would roll back a large portion of modern history. The South would become . . . a society of “conservatism,” as one South Carolinian proclaimed in 1860, a society which was “better classified” and in which “distinctions between classes are better marked.” Power would lie entirely “in the hands of men of property & of education, who from the very fact of ownership of the soil and its production and their education are alone qualified to be the ruling class.”

Id. at 24 (citing W.P. Craighill to Benjamin Allston, May, 27, 1860).

122. ROARK, *supra* note 120, at 107. “Change had not been totally alien to the Old South, but that conservative society had hobbled modern ideas.” *Id.* at 206.

out slaves. . . . Planters did not have the luxury of pining for an irretrievable institution.¹²³

“Even after emancipation,” James Roark continues, “when [the planters’] commitment to agriculture waned, preservation of the plantation usually remained the central priority in their lives. The plantation gave them a standard by which they could evaluate the rush of change.”¹²⁴ After emancipation, planters “never again regained an identity as sharply drawn, as universally accepted, and as completely satisfying as that of master. Plantations survived, but plantation life was transformed.”¹²⁵

The stultifying effect of the planters’ commitment to their peculiar form of agriculture could, arguably, have extended to the South as a whole. Perhaps that was what a contemporary of the time intended when he wrote: “The ‘mind’ of the South . . . is continuous with the past. And its primary form is determined not nearly so much by industry as by the purely agricultural conditions of that past. So far from being modernized, in many ways it has actually marched away, as to this day it continues to do, from the present toward the past.”¹²⁶

So it is with the New West and ranchers. Like Southerners of the early and mid-1800s, many western ranchers are locked into traditions and artifacts of a bygone day. The parallels between these two eras and social classes are startling. Today’s public land ranchers decry the so-called “War on the West”—interference by the federal government in their affairs and insensitivity to their needs and autonomy.¹²⁷ They and their politically influential defenders warn of the collapse of rural economies, the loss of an important culture, and the broad consequences for the West as a whole if grazing is ended on public lands. They laud the virtues of political conservatism. And, just as the South, “[o]utnumbered, . . . fell back to the traditional check on the national majority—the principle of local self-government, a defensive posture which ironically traced its roots back to Thomas Jefferson,” ranchers and other western ultra-conservatives promote the “County Supremacy Movement.”¹²⁸ Cotton could legitimately be called “King” in the Old

123. *Id.* at 208.

124. *Id.*

125. *Id.* at 208-09.

126. RANSOM, *supra* note 116, at 284-85 (quoting W.J. Cash).

127. *See* DONAHUE, *supra* note 16, at 97-98, 107-08.

128. *See* ROARK, *supra* note 120, at 17. Regarding the County Supremacy Movement, *see. e.g.*, Peter D. Coppelman, *The Federal Government's Response to the County Supremacy Movement*, NATURAL RESOURCES & ENV'T 30 (Summer 1997).

South from 1790 though at least the 1840s.¹²⁹ Western livestock producers make the same claims for cattle and sheep, without which, they claim, many western lands would be worthless. Like the southern plantation owners, western ranchers would survive after the "great change" (i.e., loss of federal grazing privileges). They might change their methods and downsize their operations, but they would preserve the coveted ranch lifestyle to the best of their ability.¹³⁰

The New and Old Wests are simply not continuous. The Old West exists in our imaginations; in movies, story, and song; and in Chamber of Commerce promotional literature. Home but briefly to cowboys and buckaroos,¹³¹ rustlers and cattle barons, it was a very short episode in western history. We have forgotten or glamorized the violence, the destruction, and the factionalism, as well as many of the characters. Though we live with its "legacy of conquest,"¹³² we have chosen to remember and dignify only the admirable personalities and a presumed idyllic way of life. The Old West, in other words, is nostalgia of the most selective sort.¹³³

The West's present challenge is to go beyond its cowboy stereotypes. The time is ripe to extend our concept of justice to the arid land upon which so many schemes proved fruitless and so many dreams were dashed. It is not the agricultural paradise we have long claimed it to be. There is another West, which is the product not of myth but rather of

129. "From the outset of the antebellum period, southern planters believed that 'King Cotton' was the driving force behind economic growth not only for the South, but for the rest of the United States as well. . . . [I]n the period after 1790 . . . 'cotton was the most important influence in the growth of market size and the consequent expansion of the economy.' The South's cash crop, [Douglass] North points out, accounted for one-half of the total exports from the United States at this time." See Ransom, *supra* note 116, at 10, 47-48. Between 1812 and the 1840s, the cotton production of the South was a major factor driving the economic expansion of the United States. See *id.* at 10. "Planters' faith in a Southern victory rested, at bottom, on their estimation of the economic power of their staple crops, particularly cotton. . . . ["King Cotton"] was the 'all-powerful faith without distracting heresies and schisms.'" ROARK, *supra* note 120, at 29 (citing William Howard Russell).

130. Cattle, arguably, were "King" in the West from about 1870 to the early 1880s. "The 1870s to 1880s are generally considered the 'high period of the reign of the cattle barons.'" DONAHUE, *supra* note 16, at 231 (quoting E. LOUISE PEPPER, *THE CLOSING OF THE PUBLIC DOMAIN* 22 (1951)). For only a few years, prior to the development of refrigerated rail cars and increasing use of feedlots, could the western cattle industry claim any national significance. See *id.* at 232. As noted earlier, today the public lands produce only 2% of the nation's cattle and sheep.

131. For a discussion of the differences, see Starrs & Huntsinger, *supra* note 18.

132. See LIMERICK, *supra* note 7.

133. See generally WALTER PRESCOTT WEBB, *THE GREAT PLAINS* (1931); DONAHUE, *supra* note 16, at 88-113, 263-72.

ecological, evolutionary, and human forces acting over millennia. It has its true native peoples and its “newcomers”—not just farmers and ranchers, but storekeepers, government workers, artists and writers, miners, lawyers, teachers, schoolchildren, and untold others. It possesses a great diversity of native fauna and flora, of climate and topography, and of human vision and aspirations. Its broad landscapes are continually called upon to provide amenities for a growing, and more appreciative, population.

By averting our gaze from the past to the future, by heeding the lessons of science and history, by discarding our personas as conquerors and embracing the roles of co-tenants and caretakers, we can bring justice to the earth in the twenty-first century. With that justice will come a new western culture as healthy and vibrant as the western landscapes.¹³⁴

134. “A culture is no better than its woods.” W.H. Auden, *Bucolics*. “Woods.” (quoted in BARTLETT’S FAMILIAR QUOTATIONS 721 (16th ed. 1992)).

