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"Before we let ourselves become too melancholy about the defeat of nature or triumphant about the victory of capitalism, we need to go out on the land itself and see what has been actually happening there as technology has encountered nature."

-- Donald Worster

This issue of the **Reprint Mailing** is devoted to the chapter, *A Country Without Secrets,* from **Under Western Skies:** Nature and History in the American West (Oxford University Press, N.Y./London 1992) by Donald Worster. Professor Worster teaches the environmental history of North America at the University of Kansas, Lawrence, Kansas, U.S.A. His other published works include **Nature's Economy**, **Dust Bowl**, **Rivers of Empire**, **The Ends of the Earth** and, forthcoming in 1993, **The Wealth of Nature:** Environmental History and the Ecological Imagination.

A Country Without Secrets

by Donald Worster

I have recently been reading a book with the melancholy title *The End of Nature.** Its author, Bill McKibben, appears in his dust-jacket photo to be a young man, a fortunate resident of the splendid Adirondack Mountains of New York, an outdoorsy fellow garbed in a checked woodsman's shirt. But despite his happy setting and appearances, he is deeply worried about the global atmospheric changes that humans have set in motion. Within the next hundred years, he points out, we will double the amount of carbon dioxide in the air by burning what's left of the fossil fuels. Scientists calculate that the increased CO_2 will raise the global average temperature by three to eight degrees Fahrenheit. And that is not all: high-level ozone is depleting, the tropical forests are rapidly disappearing, every part of the earth has now come under the exploitative hand of humankind. Nature no longer exists anywhere as a separate, pristine, unmanaged entity. We have conquered nature, McKibben laments, and worse, we have utterly destroyed what we have conquered. "Nature's independence *is* its meaning; without it there is nothing but us."[1] Everything that exists on the earth has become, in some measure, a human artifact, reflecting back our own flawed human nature.

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Henceforth we are urged to try to be more humble, but if McKibben is right about how far things have gone, it is hard to see what good a little more humility would do.

Precisely because I too believe it is time to learn to take a more humble view of our role in the great drama of life, I am compelled to disagree with McKibben's title. If in fact we see ourselves as having succeeded in completely vanquishing nature and taking command of the planet, then we are unlikely to learn the virtue of meekness. Winners don't usually turn in their trophies.

Of course, we have much reason to worry about the ecological havoc we are causing and feel guilty about it. We have indeed become a powerful, dangerous force, not least of all dangerous to ourselves. But have we seen "the end of nature"? Is this planet now nothing but an extension of human culture? No, not at all; that is a victory we could never win. Or perhaps I should say that is a crime we are incapable of committing.

The phrase "the end of nature" reminds me of another one that was hot for a while—"the end of history." Its creator, a 38-year-old State Department official, Francis Fukuyama, maintained that with the collapse of Marxism in the Soviet Union, the United States had vanquished its only adversary and achieved a final victory. We won the Cold War of ideologies—or at least capitalism won—and the dynamic that drove modern history forward has now run out of steam. "In the post-historical period," Fukuyama declared, "there will be neither art nor philosophy, just the perpetual caretaking of the museum of human history."[2] Well, this was all rightly dismissed as solemn nonsense. Like McKibben, Fukuyama was playing a trick on us by first defining his terms in an excessively narrow, dubious way, then abolishing what he had defined. In McKibben's case the result is an excess of gloom; in Fukuyama's, an excess of national self-congratulation. In both cases the rest of us need to step back and free ourselves from the flawed definitions.

I have a personal stake in refuting these two "endisms." My calling in life is that of an environmental historian: that is, I study the interactions of people and nature over time, looking for trends, seeking the origins of contemporary problems, listening to the age-old dialogue of humans and the earth. If all nature has become culture, then there is no interaction to study. If nature is truly dead as an independent force or order, then we are making no new environmental history to write about. And if history is also dead, then I might as well start selling shoes.

Historians tend to become edgy when the air is full of high-flying abstractions or talk about an absolute "end" to anything. Examined in concrete times and places, they believe, endings always seem to be linked

to beginnings and what was supposed to be over was really starting anew. Resolving one conflict laid the groundwork for the next. Before we let ourselves become too melancholy about the defeat of nature or triumphant about the victory of capitalism, we need to go out on the land itself and see what has been actually happening there as technology has encountered nature.

Everyone will have a different place to go. My own choice is the area I know best, the Great Plains of North America, the broad front door of the westward movement. This is the landscape one of its most talented native daughters, Willa Cather, once described as "a country that keeps no secrets."[3] There is nowhere on the plains to hide the truth about ourselves and nature, nothing that can block our perception of that truth if we open our eyes. So revealing and so elemental, it is a landscape that can help us get down to basic questions and get clear, forceful answers to them. Like the rest of the West, the plains were settled late by Europeans, and our (white) history there is short, easily accessible, and written in a language we can ready easily. To be sure, the Indian prehistory of the plains has more secrets from us moderns than Cather allowed—it is in fact filled with mystery. What did those who lived here before the white man's coming think about the place and what did they want to do with it? Aside from a few flint points and bones, a few remnant stories and legends, their world is hopelessly lost in the earth. Still, the modern history of the plains is naked to our eyes, and we can learn here, better than in most places, some essential truths about our changing relations with the earth.

I want you to travel with me out to a place called the Cimarron National Grassland, which lies in the extreme southwestern corner of Kansas, hundreds of miles from any metropolitan area. It was named for the Cimarron River that trickles through it. The word "grassland" suggests an immense swelling ocean of grasses, and that is in fact what one finds here: 107,000 acres covered with buffalo grass, blue grama, galleta, sideoats grama, western wheat grass, and Indian grass, all native species, along with a few exotics. There are scattered clumps of trees, shiny green thickets of cottonwood and sandbar willow along the river bottom, trees that once furnished a supply of wood and shade to travelers on the Santa Fe Trail. These days there are no bison, as there were until the latter half of the nineteenth century, but one still can see most of the animal life we associate with the wilder days of the plains, including pronghorn antelopes, coyotes, prairie dogs, redtailed hawks, and rattlesnakes. The sky is still so large it makes one feel like a mite crawling across the Astrodome floor. Underfoot the topsoil is pretty much the same old stuff it has always been, deposited by the wind during the Quaternary, darkened through a

million years of dying grasses, marked by an outcropping or two of Triassic sandstone. Noting those facts, most people would agree that this place is certainly an expression of nature. But McKibben says nature is dead; are we, therefore, looking at an artifact of man?

The environmental historian notes that the word "national" is painted on all the signs announcing this grassland. So he gets a grant and takes off for the National Archives in Washington to do some research on the origins of that word. There he finds among the papers of the Division of Land Utilization in the Department of Agriculture that, during the years 1937 to 1943, the federal government purchased this land from destitute, discouraged, blown-out wheat farmers and cattle ranchers. What now is a thriving grassland was then a wasteland, part of the Dust Bowl, and archival pictures from those years show little grass and lots of bare, desolate ground. They show too abandoned farm houses, the traces of which now lie half-concealed in the grass—crumbling pine boards nearly black with age, boards once brought to this place from the forests of Minnesota to provide shelter for a rural family. Hanks of rusty barbed wire still poke up to remind that this landscape was once fenced to manage herds and crops.

Other records show that the Cimarron National Grassland was one of twenty-four such land-purchase projects begun in the Dust Bowl years, scattered over eleven western states, from Oklahoma and New Mexico north to the Dakotas and west to Idaho and Oregon—almost four million acres purchased in all. Then it took the Soil Conservation Service more than a decade, and plenty of farm machinery, to get a stand of native grasses reestablished on those acres. Eventually, when the grass was growing sturdily again, the lands were transferred to the U.S. Forest Service, which began leasing them out to local ranchers and, in 1960, declared them to be national grasslands, equivalent to the national forests. Today, mixed among the antelopes, sharptailed grouse, and jackrabbits are white-faced Herefords, a breed of beef cattle whose ancestors were domesticated in England hundreds of years ago and brought more lately to America. The historian, in other words, finds a great deal of human invasion, human disaster, human restoration, and human purpose in the Cimarron National Grassland.[4] Nature here has certainly been affected by culture. Does that fact make the place a human artifact?

Before attempting to answer that question, I want to broaden it by suggesting that it has long been the ambition of western civilization to make every part of the earth over into a thoroughly cultural landscape. Francis Bacon, René Descartes, John Locke, Adam Smith, the Compte de Buffon, and Karl Marx were among the multitudes who dreamed the dream of

conquest. Under their influence nature came to be seen less as a system of laws to be obeyed and more as a set of potentialities to be exploited. If the planet is now all under human management, as we are told, then their dreams have been fulfilled completely.

Americans did not invent the idea of ecological conquest, but we made it emphatically our own. We saw ourselves marching across a continent not only to dominate other human beings, in the traditional pattern of imperialism, but to subdue "the wilderness," or "the land," or "aridity"—many different abstractions, all of them our chosen adversaries. We thought our conquest would essentially be a benign, happy affair of overcoming nature with technology. With shovels and axes in our bare hands, or with bulldozers, or with nuclear power, we would make the earth yield up its infinite stores of wealth to the benefit of humanity. In that process of conquest, of course, and almost incidentally, the native peoples would have to be defeated too.

Obsessed with such abstractions, Americans often failed to appreciate the deadly side of what we were doing. Those were not exactly *people,* Sioux or Comanches, living, breathing tribes of humanity, fleeing from us or suffering by our hand; they were part of the "Nature" we were conquering. No more were those whole nations of bears, moose, beavers, aspens, and pines real beings that we were destroying. Had they been acknowledged as full-fledged beings with lively needs and interests of their own, they would not have been quite so easy for us to approach aggressively, with arms drawn. After all, Americans were, and still are, a people gathered out of grinding oppression. We have had a large capacity to emphathize with the victims of conquest. But for a long time, in taking command of the North American continent, we suppressed that capacity, thereby avoiding the moral contradictions in our situation, insisting that we were not like other oppressors and conquerors. We were not after anything so mere or mundane as profits, markets, land, house sites, or raw materials. We were fighting for an empire of the free human spirit, with liberty and justice for all. Such an empire absolutely required the driving out of all opposing ideas. Do not charge us, therefore, with slaughtering millions of bison; what we actually killed was "the primitive," of which the bison was a mere symbol. So conquest became a noble enterprise, supposedly benevolent in its destruction.

In particular, this nation has made the American West the center stage for our drama of technological conquest over nature. For a full century and more, down to approximately the decade of the 1960s, the history of the West we told was a story of fighting against Nature for the sake of grand

ideals. Take away all the colorful details of Calamity Jane's love life, the gold spike joining the railroad lines at Promontory Point, the grub eaten on a thousand cattle drives, the sound of a bugle in the morning air, and what is left is a saga of competing, winning, beating, succeeding, battering down every obstacle posed by nature, gaining control over the West, all in the name of great principles. Americans were the good people—and good meant strong. Americans in the West were the best of the good and the strongest of the strong. They wore leather, even the women, and packed guns. They fought to the last man. Pick up any Zane Grey novel and the names of its characters still resonate with command: Wade Holden from *Shadow on the Trail,* the lone man Lassiter from *Riders of the Purple Sage,* Jim Cleve from *The Border Legion.* Always they ended up on top, if not in every battle, then in the last great confrontation. If the westerner sometimes did not have broad enough shoulders to fit the role, if he did not always have extraordinary physical strength, then he could conquer nature in other ways and by other agencies: by wit, reason, science, collective energy, a heart of courage, or divine authority. He could become an engineer, entrepreneur, priest, or explorer. Women could tame through the hearthside tasks of domesticity. But always, regardless of the individuals involved, the common end must be one of gaining control over the land in the name of a higher morality. No other outcome was conceivable.

The classic distillation of that traditional story of the West remains Frederick Jackson Turner's terse phrase about the frontiersman: "Little by little he transforms the wilderness."[5] For Turner, as for most of his countrymen, the single significant theme was the abstract struggle between the untamed forces of Nature on the one hand and the individual male Pioneer on the other. Only one of them could survive.

Today, perhaps for the first time in our history, we are able to look with some detachment and skepticism on that old, simplified story of "the Conquest." Many of us are actually embarrassed by any boast of going out to dominate the earth. We are less likely to hear such language these days, for it is no longer quite the fashion to gesture widely toward the horizon with promises of progress and virtue. We are a little more aware of the shortcomings of the past and vaguely sense that any talk of conquest can be both destructive and naive. So we tend to use euphemisms instead: innocuous labels like "growth" or "development" to describe what is going on. Or not quite knowing how to talk about our relation to nature any more, we change the subject—ignore nature altogether, deny it even exists, insist it's all artifact, all absorbed into our culture. The key historical fact that Americans have been a people with conquest in their eyes

is downplayed without really being recanted. And the actual outcome of that conquest, for people as well as for the rest of nature, even now goes largely evaded.

Historians exist to prevent such evasions from occurring. We have the responsibility of bringing old ideas to the surface, showing how they still influence our behavior, and of asking: What did we have in mind in trying to conquer nature in the West and was that what we achieved or not? How permanent was the conquest? What did the effort do to us the conquerors?

Let's examine first the idea that we have at last conquered nature in the West. The truth is, we have not conquered the natural world in some absolute sense; we have only conquered an idea, an abstraction, that we have called Nature. McKibben finally admits as much, and the admission falls with a dull thud midway through his book. "When I say that we have ended nature," he writes, "I don't mean, obviously, that natural processes have ceased—there is still sunshine and still wind, still growth, still decay. Photosynthesis continues, as does respiration. *But we have ended the thing that has, at least in modern times, defined nature for us—its separation from human society.*"[6] The distinction is once crucial and ingenuous. If we decide to define nature as a realm completely separate from people, one that bears no trace whatsoever of human presence or action, then of course nature has ended. But then when, if ever, did it exist? Such a nature began to disappear immediately after the first hominid walked upright across the African savannah over a million years ago. Define nature McKibben's way, as a pure realm that can only exist completely apart from humans and North America ceased to be natural the day a band of wandering Asians crossed into Beringia and began hunting the hairy mammoth. Their descendants, by setting fire to the grassland, putting kernels of corn in the ground, or throwing up burial mounds, were continuing to break down the separation, and breaking it down long before the whites got here, invented the automobile, and added so much carbon dioxide to the air.

McKibben's strained, pristine idea of nature is, of course, a modern European invention. When the Europeans arrived in the New World, they thought they were encountering a nature completely separate from any human society—a state of "virginity" in their male fantasies. Instead, what they came into was a country existing apart and separate from *white* human society, not from all society; and they set about with ferocious energy to end that condition and possess the land.

Consider again that place we call the Cimarron National Grassland. Long before the Department of Agriculture came to do their work of prai-

rie restoration, long before the wheat farmer came to plow up the sod and raise crops, nature here knew the presence of human society. True, the numbers and technology in that society were much smaller and less powerful than those of the white man. One anthropologist, Jerrold Levy, has calculated that there were approximately 10,000 native Americans living on the southern plains prior to the white invasion. That gives a population density of about one person per thirty square miles, a smaller density than that of almost any other creature there.[7] The Indians, though equipped with an intelligence no less than our own, had only a few tools and all of them were made of stone and wood. They could bring down a few bison, but could make no appreciable dent in their numbers. And when the Indians were driven out by the invaders from Europe, they left little more trace of their history than the bison they hunted. However, while they dwelled on the plains, taking their meager living from the land, they must, by the strained logic I have noted, have spelled the "end of nature."

By now we should be feeling thoroughly confused. Even out on the bare, revealing plains the substance and order of nature can seem bewilderingly complex and elusive. We are driven to the conclusion that nowhere can we find a neat simple definition of what nature is, though it is apparent that there are patterns, processes, events, and beings in the landscape that we did not invent or set in motion. We must admit that our brains can not claim credit for their existence; they are not the work of our culture. McKibben's list of "processes"—sunshine, wind, growth, and decay—are as active in the West today as they were in the beginning of time. The buffalo grass now sprouting from the soil is also a part of nature, although it may have arrived in the 1940s as seed in gunny sacks and have gotten drilled into the ground by Ford tractors. The return of the pronghorns may have owed something to human purpose, but they came on their own four feet, guided by an instinct that had evolved long before *Homo sapiens* did. In many other ways, nature has not been vanquished or even brought much under human rule. Thus, we are forced to admit that nature is something more complicated, tenacious, and subtly ordered than our languages or analyses can pin down. What we cannot easily define, we cannot really conquer.

Seen from an airplane at 30,000 feet, the Cimarron National Grassland appears to be a land under rigid, total human control. Its boundaries conform to the national land survey—the geometric grid of range and township lines that directed the entire westward movement from the Appalachian Mountains to the Pacific. But go a little higher, look at the spot from the moon, and all the man-made lines on it vanish; it appears then

that the clouds and the great masses of earth and water are in control. Or come down to ground level and start walking across the terrain; even a rattlesnake can begin to look more in charge than a man. Have we really achieved total dominance over the insect order, or over weeds, or over the force of gravity, or over the soil bacteria? Mainly what we have established on the plains is a powerful but limited influence over the distribution of many of our fellow plants and animals, and we trumpet that as the conquest of nature. Yet take away that influence for a hundred years, let the plants and animals proliferate again with freedom, and it would soon be hard to find any trace of the white man's regime over most of the countryside.

We come then to a second question: How permanent has our power over nature been to date, and how long will it last into the future? Recall those mouldering pioneer homesteads in the Cimarron grassland, the roofs, floors, doors, and windows rotting into the earth, testimonals to ambitions that once flourished. They are a few of the many ghost farms on the plains. Drought and poor judgment, a lack of skills and a surfeit of greed have again and again turned agricultural settlements into ghosts. Morton County, where the Cimarron grassland is located, lost 47 percent of its residents in the dirty thirties. Despite the fact that the nation has doubled its population since that time, the ghosts have not returned to life. Indeed, more ghost farms are being made every year throughout the rural West.

What has largely kept agriculture going on the southern plains since the 1930s has been deep-well irrigation, drawing on the Ogallala aquifer, the biggest source of underground fresh water in the world—that along with federal crop subsidies and drought disaster aid. Within another thirty years western Kansas will have depleted most of its water supply; the Kansas Water Office predicts a 75 percent decline in irrigated acreage by 2020.[8] Inevitably, as that day approaches, the number of ghost farms will mount rapidly. More and more it is clear that the debacle of the thirties was not altogether an aberration; sustaining so extensive a system of crop farming in the driest part of the country, on the lands beyond the 98th meridan, has been a technological stunt that we cannot keep up indefinitely. Realizing that truth, we must reassess the entire idea of what the conquest of nature in the West has really meant. Making the land productive through agriculture was the essence of that conquest, and the farmer was long hailed as fighting in the front ranks of the battle. But if row-crop agriculture is now facing a period of retrenchment and defeat in the region, then where is the victory we were promised? It now looks more ephemeral than we ever imagined.

We can also find hundreds of ghost *towns* scattered across the West, some of them once selling merchanise to farm families, some mining minerals from the earth. Like the ghost farms, the ghost towns failed to overcome the limits of nature. Their conquest depended on having an endless abundance of rain or copper or timber or oil. I remember vividly a hike made with some undergraduate friends in 1962 up Geneva Creek, which is in the central part of the state of Colorado. All the way to the headwaters we went, to a patch of perpetual snow lying above the trees near the Continental Divide; and there we found, much to our astonishment, an entire abandoned mining town named Timberline, with cabins and tunnels and mining office virtually intact from their heyday in the early part of the century. In one of the cabins we found a man's way of life frozen in time: old *Saturday Evening Post* magazines and reading glasses, half-filled boxes of oatmeal, a coal-burning stove, bunks with blankets still in them, tools for a forge. The stream ran icily by the cabin's front door and we camped there for several days, drinking our "bourbon and ditchwater," absorbed in this museum of the past as much as in the sublimity of the landscape. Three years later we returned and found porcupines in the cabins, chewing up all the history. Another year or two passed, and some of the town came to be burned to the ground by elk hunters on a revel. Who then turns out to be the final winner in Timberline—nature or man?

The environmental historian has to conclude that, contrary to Frederick Jackson Turner, we Americans have not been triumphing over the wilderness "little by little." Such an image suggests a steady linear progression to some ultimate point called civilization. The real history we have made is rather one of cycles—rises and falls, victories and defeats, neither humans nor nature ever gaining a complete, final mastery. Only in a carefully restricted span, say, a period of a few decades or a century or two, and by carefully specified criteria, can one find more or less straight lines running one way or the other through time. The entire history of the westward movement has to date been written from a highly selective view, enabling us to tell and believe a story that ends in epic success—but the real story is not over, will never be over, and we will have lots more tragedies and failures to record as it goes on.

One linear progression we can indisputably find in modern times is an increasingly larger scale in our relations with nature. Technological and social complexity has increased substantially since the first covered wagon creaked out onto the plains. Instead of lone individuals or single families, we have become corporations and bureaucracies confronting the environment. Unquestionably, we have gained power through that collectivism and can do things that our ancestors never could have imagined,

like stripmining Montana coal and shipping it to Arkansas, burning it to furnish electricity for microwave ovens in Little Rock. This new power depends on very large instruments of transportation and communication that would have been the wildest fantasies to earlier pioneers. The environmental consequences of that power are monumental, though as individuals we have considerable trouble seeing and taking responsibility for them; they seem so remote from our lives. Unlike the Kiowas or Arapahoes of the plains, who looked the death they caused directly in the face, we have grown less and less aware of the dying, the depleting, the destroying that our style of life demands. Paradoxically, this increasingly complicated and impersonal scale in our relations with nature has encouraged an illusion of total victory. We have come to have a complete, childlike confidence in our control.

Such confidence, it seems to a historian, may be quite misplaced. The growing scale of our relations with nature may be matched by the scale of our failures. Instead of a scattering of ghost farms and ghost towns, we may be making our way toward a ghost civilization. Recall that dependency of modern rural life in the West on large-scale water engineering. What future can one expect for a civilization that has come to depend heavily on center-pivot irrigation, on massive dams like Hoover, Fort Peck, and Grand Coulee, on thousands of miles of concrete ditches and canals? The aquifer must dry up at some point. The reservoirs must fill with silt and become a series of man-made waterfalls. The canals must at some point crack apart and weeds grow in the cracks. Every large-scale irrigation society in human history started off with the same assumptions of permanence that we did, but by and by every one of them had to admit defeat. The sureness of one's feeling of omnipotence has never had much to do with reality.

History, I must emphasize, runs in cycles. The cycle of conquest is one of the oldest, as old as Sumer or Mesopotamia. Standing on the Great Plains forces that realization home. We must admit that the most dependable thing humans have achieved here is impermanence.

A third question about this supposed conquest of nature has to do with the conquerors themselves: Is conquest really a one-way process in which power is exercised exclusively over the conquered, or does the conqueror also get transformed? Turner, to his credit, did acknowledge that any conquest includes a process of adaptation: the wilderness masters the pioneer before the tables are turned. This is hardly a new observation about conquests; historians have traced the ways the Normans were changed when they invaded England and defeated the Anglo-Saxons, pointing out that the language spoken in Britain today is not Norman French but an

amalgamation of all the tongues that once contested for primacy. So in the drive to conquer nature in the West, the white conquerors ended up adopting some of the language of the native peoples and the native environments.

Take, for instance, the matter of fencing. You cannot establish much control over the land without putting up fences. The original purpose of a fence was, as etymology suggests, "defense," that is, providing protection from marauding animals that threaten one's crops. Defensive fences go back as far as agriculture does; Indians put them up to keep game from trampling down their corn and beans. With modern Europeans fences became an offensive technology too—assertions of one's private estate against the claims of others. Defensive or offensive, the fence has always been a part of nature as much as culture. In England it might have been a grassy ditch or a hedgerow made up of native plants. In early New England the fence was commonly a stone wall. An old adage held that when a farmer bought one acre of land for plowing, he needed another acre to dump the surplus rocks; but if he piled up the rocks in the form of walls he could get two acres to use again.[9] On the plains the Russo-German farmers discovered that they could cut fences from the ledges of limestone that underlay the surface—"post rock" they called it. Others brought in the osage orange tree, which is covered with wicked thorns, to make a protective hedge around their crops, leaving a legacy of bloody scratches for their descendents trying to keep their pastures clear of the nuisance. Did those various strategies of fencing constitute a one-way conquest? Are all those fences exclusively in the kingdom of culture? Obviously not. Each of those species of fence bore the marks of their local environment.

In 1931 Walter Prescott Webb used the development of fencing on the Great Plains to show that the biophysical environment forced an adaptation on the incoming whites. Many of my colleagues find Professor Webb unconvincing these days—too simplistic, too much of an "environmental determinist," they say, and to a point I am forced to agree with them. But Webb had a few things right that modern historians need to remember. The westward movement of agriculture was at once a process of conquest *and* adaptation. To illustrate that process Webb tells the story of the invention of barbed wire, which he calls "a child of the prairies and Plains"—a prickly child, sinister in appearance, but a child of the region all the same. Though there is some disputing the facts, its parents were apparently Lucinda and Joseph Glidden of DeKalb, Illinois, a farm couple who, in 1873, were desperate to keep pigs from rooting up Mrs. Glidden's garden. Working in the kitchen and backyard with a coffee mill and grindstone, they discovered a way to weave two stands of wire around

a row of barbs and thus discourage the marauders. By 1880 they had sold their invention to the manufacturing firm of Washburn and Moeb, who were turning out eighty million pounds of it a year. "The invention of barbed wire," writes Webb, "revolutionized land values and opened up to the homesteader the fertile Prairie Plains, now the most valuable agricultural land in the United States."[10] Soon the wire was stretched all over the region. Competing varieties appeared and found their salesmen; eventually they all became artifacts of the past, tacked onto display boards and deposited in museums of local history. Scholars have published contentious books and papers on the relative merits of the Ellwood Ribbon, the Lazy Plate, Burnell's Four-Point (Vicious), the Necktie, the Brotherton Barb, the Decker Spread (Modified), and the Champion or Zigzag (Obvious).[11] Here, they are saying, we have one of the leading tools of empire; or as more than one smalltown exhibit has proclaimed, we have the "wire that won the West."

Unlike the Massachusetts stone wall or Virginia rail fence, the barbed wire fence was unmistakably a product of industrial capitalism. It required the Bessemer process for making steel cheaply, complex wire-drawing equipment, massive factories for large-scale manufacture, and heavy railway cars for transport to places like southwestern Kansas, and none of those requirements seems remotely "natural." But hold on: there was *something* of western nature that got into the wire too, making it what it was. That something was aridity. Farmers were more or less compelled to buy the wire from Washburn and Moeb because they lacked the wood they wanted for fencing, and they lacked the wood, of course, because they lived in an arid or semi-arid climate. The technology of conquest therefore had to be adjusted to meet environmental exigencies. To be sure, Mr. and Mrs. Glidden might have hit upon a laser-beamed pig-zapper instead of a wire fence, and farmers might have preferred it had it been offered; the environment did not absolutely require a single solution. Still, Webb was right that the barbed wire fence was an adaptation to nature, and it made rural life in the West noticeably different than it had been in the East.

I do not mean to argue against McKibben that we have been *conquered* by nature, only that we have been *influenced* by it in a very material way—by climate, soils, water, terrain, ecosystems, light and color, the presence of animals—and that influence can be located in our technology, clothing, architecture, and landscape design. The irrigation dam is one such manifestation, though ironically an instrument of domination, and so is the western stock saddle. We may live in a world governed by the global marketplace—by what Immanuel Wallerstein calls the world economic sys-

tem—but the astonishing truth is that local and regional material culture has frequently survived that conquering, homogenizing economic force, much as a Lithuanian identity has survived decades of Soviet rule. What is more, industrial capitalism has, despite its homogenizing tendencies, had to adapt now and then to the conditions in which it has found itself. You can't sell a cotton baler in Missoula or a pitchfork in Manhattan. Other environmental influences take a less material form in law, art, poetry, and social habits, making the felt experience of living in the West different from that of other places.

Environmental adaptation is, in other words, a real phenomenon that survives all our power and effort to impose ourselves on the land. We try to rule—but we also must bend. The environmental historian must look for both behaviors. To do so, he may have to overcome a lot of blindness, even a refusal to accept the reality of adaptation. Why would people refuse to accept that reality? Because it would contradict the idea running deep in American culture that the individual is, or ought to be, free of all restraint, whether it comes from genes, climate, microbes, one's own inventions, government, all forms of authority, or fate. Any form of restraint on our sovereign individuality has generally been regarded as a bondage imposed on us for dark reasons. In America, the land of the self-made man, so strong is that tradition of nonadaptive individualism that even those arguing that western settlement was essentially a collective affair, dependent on the group, still balk at the notion that nature has influenced who we are. So even do some of us environmental historians when we write about nature as though it were simply shapeless putty in human hands.

We will not wholly overcome this assumption of human autonomy without, as I have suggested, uprooting ideas going back to eighteenth-century Europe and before. But in the meanwhile we can at least try to loosen the West from some of the binding assumptions we have inherited. We can begin to try to tell its story not simply as a conquest, an imposition of an invading culture on the land, but as a process, however imperfect, of environmental adaptation.

I don't see how anyone who has spent any time on the Great Plains, studying and thinking about what has gone on here, could truly miss seeing that its history has been one of trying to meet, in Henry David Thoreau's phrase, the expectations of the land. In the first place, they must admit that environmental history is basic to the place; then, they must grant that environmental history tells a story of reciprocity and interaction rather than of culture replacing nature.

Most of that process of adaptation has been on an unconscious, unintended, often indirect level, creating a tangled web of nature, technology, and folk mentality; but there is also a story of conscious, *intentional* adaptation to tell. Now and then people did deliberately try to understand their ecological situation and developed explicit ideas about how to adjust their culture accordingly. If we look for those adaptive intentions, we might begin to see the coming of the first explorers as something more than a prelude to conquest; we might present the explorer as, in some degree, an advance man for adaptation. John Wesley Powell would be the most celebrated figure in that history, but there were dozens of others, scientists of all sorts, many of them in geology, ecology, and geography, along with agronomy, anthropology, and cultural ecology. We also have a tradition of appropriate technology in the region to write about, from windmills and solar energy to ideas about ecologically sustainable agriculture, along with a history of landscape restorations like Cimarron National Grassland. Sometimes it has been architects who have been in the forefront of cultural adaptation. Or it has been visual artists and writers. These days it is often fashionable to view all painting, building, novel writing, photo taking, indeed every human creative act, as an ordering we impose on nature—a "construct" or "design" we make out of the chaos around us. When we look at a picture or a landscape, some critics maintain, all we should see is a human hand organizing it. But some of our predecessors in the West did not understand that they were "constructing a reality." If we dismiss all their work, their designs, their creativity, as more expressions of power and conquest, we distort their purposes radically. Art can speak of the presence of the human without arguing for the annihilation of the natural.

In addition to recovering that artistic and intellectual tradition of adaptiveness, we need to pay more attention to the lives of all those anonymous people who came into the West wanting to stick, who did stick, and consider how they did it. Their stories are not to be found in the ghost settlements that thousands left nor in the booming cities where so many western historians have dwelled. Wallace Stegner writes: "If we want characteristic western towns we must look for them, paradoxically, beyond the West's prevailing urbanism, out in the boondocks where the interstates do not reach, mainline planes do not fly, and branch plants do not locate. The towns that are most western have had to strike a balance between mobility and stability, and the law of sparseness has kept them from growing too big. They are the places where the stickers stuck, and perhaps were stuck; the places where adaptation has gone furthest."[12]

Only a little of the history of those places has yet been told, perhaps because historians like me have been too interested in dramatizing the messes we have made.

Many living in Stegner's out-of-the-way places came into the West seeking wealth and opportunity but found something more satisfying. They changed their sense of who they were, becoming people of the prairies or mountains, of Wyoming's Sweetwater valley or California's Mohave Desert. When people give some of their allegiance to a place, they become more complex minds than they were before, more filled with contradictions, more unpredictable, more capable of learning. They may still persist in taking the wild risks of the uncommitted; on the other hand they may seek to discipline their desires and nurture that relationship. We have had both sorts of people in the West, as we have had elsewhere on the continent, though we have not always given those stickers and nurturers their due.

I make no claim that a history discovering the roots of environmental adaptation would, by itself, be more true than the old one of conquest, or attempted conquest. Any familiarity with the ups and downs of settlement on the plains would quickly scuttle such a notion. But we do need a better story than the one we've been telling about the West, if nothing else than to save us from gloom and excessive pessimism. We need new kinds of heroes, a new appreciation of nature's powers of recovery, and a new sense of purpose in this region—all of which means we need a new past, one with the struggle for adaptation as its main narrative, one that regards successful adaptation as a kind of heroism too.

Today, the West has become a very urban place, indeed it is the most urbanized part of the United States in terms of where most of its people live. Yet for all that, westerners may be more aware today of the significance of nature and of its role in their lives than they were fifty or a hundred years ago when they were down on the farm. So it is all over the earth. Though seemingly encapsulated in an urban cocoon, people are awakening to the whole branch, the whole great green tree, on which their cities hang. One of the surprises of our time is that people have begun to acknowledge their continuing dependency on nature wherever they live. I have to conclude from that growing awareness that many of us do not feel very much like conquerors. We are too nervous and fearful for that. If as a species we have truly conquered nature, why do we feel so insecure about the achievement?

The lessons found out here on the plains are clear and yet complex. They say that we can live without the old fantasy of a pristine, inviolate,

edenic wilderness—it was, after all, never adequate to the reality of the natural world as we found it. But we could never really turn all of nature into artifact. Nor could we live without nature. For all our ingenuity, we sense that we need that independent, self-organizing, resilient biophysical world to sustain us. If nature were ever truly at an end, then we would be finished. It is not, however, and we are not.

A Country Without Secrets — **Notes**

1. Bill McKibben, *The End of Nature* (New York: Random House, 1989), 58.

2. Francis Fukuyama, "The End of History," *The National Interest,* no. 16 (Summer 1989): 3-18.

3. Willa Cather, "Nebraska: The End of the First Cycle," *The Nation* 117 (5 Sept. 1923): 238.

4. The story of the national grasslands can be found in R. Douglas Hurt, "The National Grasslands: Origin and Development in the Dust Bowl," *Agricultural History* 59 (April 1985): 246-59; "National Grasslands Established," *Journal of Forestry* 58 (Aug. 1960): 679; and H. H. Wooten, *The Land Utilization Program, 1934 to 1964,* U.S. Department of Agriculture, Agricultural Economic Report No. 85 (Washington: Government Printing Office, n.d.).

5. Frederick Jackson Turner, "The Significance of the Frontier in American History," *Frontier and Section: Selected Essays of FJT* (Englewood Cliffs: Prentice-Hall, 1961), 39.

6. McKibben, *The End of Nature,* 64.

7. Jerrold E. Levy, "Ecology of the South Plains," *Patterns of Land Utilization and Other Papers: Symposium,* Viola E. Garfield, ed., Proceedings of the American Ethnological Society (Seattle: Univ. of Washington Press, 1961), 18-23. Levy calculates that, from at least 1836 to the reservation period, there were 1800 Kiowa and Kiowa-Apaches, 3500 Cheyennes, and 2500 Arapahoes, along with smaller numbers of Comanches, Wichitas, and Tonkawas. He adds: "Even using the minimum buffalo population, the maximum human population, the maximum consumption, and assuming the most wasteful butchering techniques, and the slaughter of females exclusively, the effect upon the herds was probably minimal" (p. 22). However, recent historians and anthropologists have argued that we have much understated the devastating impact of European diseases on North America's aboriginal populations, and if so, that fact might cause us to revise Levy's numbers upwards for the pre-1836 populations.

8. Kansas Water Office, *Ogallala Aquifer Study in Kansas: Summary* (Topeka: Kansas Water Office, 1982), 3.

9. Rowland C. Robinson, "New England Fences," *Scribner's Monthly* (Feb. 1880): 502-11.

10. Walter Prescott Webb, *The Great Plains* (Boston: Ginn and Company, 1931), 317.

11. Henry D. and Frances T. McCallum, *The Wire That Fenced the West* (Norman: Univ. of Oklahoma Press, 1965), chap. 19.

12. Wallace Stegner, *The American West as Living Space* (Ann Arbor: Univ. of Michigan Press, 1987), 25.

A thought for these times from Henry Geiger, *founder, and for over 40 years until his death a few years ago, publisher of* ***MANAS****. The following excerpt is taken from the front page article "The Unfinished Revolution" (****MANAS****, January 7, 1948):*

"It takes no special faith in man to believe that underneath the protective shell of cynicism worn by most people of today, there is a secret hoping for the birth of unashamed idealism in human life. It is as though there were an unspoken cry, lodged in the throat of millions: What shall we believe in? What can we work for that will mean something and will last?

"There are answers, of course--too many answers, and too few of them credible. A thousand organizations.... claim to know the 'right' answer. The trouble is, we have heard all these answers before. Nearly every speech on behalf of a 'cause' sounds like an old phonograph record of a played-to-death popular tune. Sincerity of the speaker is not the issue; it is simply that we are tired of plans and projects which can be described by an uninterrupted flow of hackneyed phrases. Thought which can be expressed in pat and familiar terms, these days, is thought in disregard of facts.

"We have, in short, no creative thought today; only formulas. We have no genuine religious inspiration; only creeds. And we have no real science, in its highest sense, but only advanced technology. And finally, we see no uniformities of moral experience in terms of which a Thomas Paine could write the challenge of these times.... So, it is plain, while we need a Tom Paine for today, we need also something more. We have to come to grips with the moral realities of our lives, in order to have ears to hear what the Paines born to this generation may say."

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