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FOR FREE MARKET ENVIRONMENTALISM



THE GREAT PLAINS . MOVING THE WIND . ECOSYSTEMS AT YOUR SERVICE
A TALE OF TWO RANCHES . THE ACCIDENTAL ENVIRONMENTALIST

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FEDERAL LAND NON-MANAGEMENT

In 1962, Congressman Wayne Aspinall wrote to President Kennedy asking him to establish a commission to review public land laws. What resulted two years later was the Public Land Law Review Commission. In 1970, the commission released its report, which became a blueprint for subsequent public lands legislation, including the Federal Land Policy and Management Act and the National Forest Management Act.

On this 40th anniversary of the commission's report, it is worth reflecting on its impacts. Did the ensuing legislation and regulations give us better management of one third of the nation's land? Do we have the best people with adequate funding using the best science and practicing "adaptive management" through experiments that balance human and environmental values? If you think the answer is yes, take another look at the emperor; he is naked.

For the latest example, consider the recent federal court decision in Montana to relist the wolf as an endangered species. When the Canadian immigrants were brought to Yellowstone in the mid 1990s, they were an "experimental population" that would be delisted if the numbers grew to 30 breeding pairs or 300 wolves. With wolf numbers in the northern Rockies much greater than this—the population in Idaho, Montana, and Wyoming now exceeds 1,700—the U.S. Fish and Wildlife Service asked the three states to develop management plans so that *canis lupus* could be delisted. The service accepted Montana's and Idaho's plans, which included some hunting, but rejected Wyoming's because it went too far in allowing wolves to be shot. Environmental groups centered far from any wolf's howl filed suit to block the delisting and were successful when Judge Donald Molloy ruled that wolves in the northern Rockies are a single population that cannot be segmented based on political boundaries.

As we continuously see, politics is what federal resource management is all about. Politics dictated wolf reintroduction in the first place, so it is not surprising that politics continues to be the battleground. For example, Defenders of Wildlife, one of the parties to the lawsuit blocking delisting, helped overcome early political opposition from ranchers when it raised private funds to compensate ranchers for livestock losses due to wolf predation. Now Defenders wants wolf populations to continue growing and have the taxpayer foot the bill for compensation. That sounds a lot like politics to me.

Water management is just as bad. Recently, the California State Water Resources Control Board recommended that 75 percent—up from 50 percent—of California's Central Valley water should flow to the Sacramento-San Joaquin Delta to protect the delta smelt and chinook salmon. The ruling prompted Earthjustice attorney Trent Orr to say, "Water officials have made the right call today to fix the Delta by restoring at least minimum water flows to keep nature alive, including our valuable salmon runs. There are a lot of humans that would benefit if the Delta were brought back to health." There are also a lot of humans who will bear the cost of cutting water to agriculture and urban users by 50 percent. It is often said that water flows uphill to money. In this case it gushes uphill to politics.



If you think forest management is any better, check out the red and green mosaic that covers most of the West. The red is a tinderbox of pine trees killed by the pine bark beetle and ready to ignite from the smallest spark. Hiking behind my home, you will find many trees marked for cutting under a plan by the U.S. Forest Service to protect Bozeman's watershed from disastrous fires that will cost millions of dollars to fight and millions more to restore water quality. When I asked a friend at the Forest Service when they would start cutting, however, he laughed and said the plan will be tied up in court for years by environmentalists who claim the forest is habitat for endangered species such as the grizzly bear and lynx. How many bears and lynx will there be when the red and green is replaced by black?

A recent *PERC Policy Series*—“Two Forests under the Big Sky”—contrasts federal and tribal forest management. In that study, Alison Berry shows that the

Confederated Salish and Kootenai Tribes manage their lands better than those in the adjacent Lolo National Forest, in part, because they are not subject to the same environmental laws as the U.S. Forest Service—laws emanating from that commission four decades ago.

Federal land management is a sham. As Jack Ward Thomas, former chief of the Forest Service under President Clinton, puts it, federal land management is tied in a “Gordian knot.” That knot is the result of laws and regulations that allow for environmental litigation at every turn. Berry points out that in 2007, more than 21 million board feet were held up in appeals and litigation on the Lolo. Federal resource management legislation may look like science in sheep's clothing, but the fact is that it is politics in wolf's clothing.

In “On Target,” PERC's executive director TERRY L. ANDERSON confronts issues surrounding free market environmentalism. He can be reached at perc@perc.org.

THE GREAT PLAINS: TRAGEDY OR TRIUMPH?

BY P.J. HILL & SHAWN REGAN



At the end of the 19th century, historians declared that the American frontier had closed.

The Homestead Act had caused population density in the West to exceed two people per square mile—the metric the census used to gauge frontier status. Writing in 1893, historian Frederick Jackson Turner regretted the impact this would have on the character of the American individual. The frontier, he claimed, created freedom by “breaking the bonds of custom, offering new experiences, [and] calling out new institutions and activities.” According to Turner, with the closing of the frontier went the American propensity to forge new ideas, institutions, and solutions in the face of new environments.

The Great Plains



Now, more than a hundred years later, the Great Plains are experiencing Manifest Destiny in reverse—people are leaving in droves. Rural counties have lost 20 percent of their population since 1980, continuing a steady downward trend that dates back to the 1930s. The young are leading the exodus, seeking better opportunities elsewhere, and the median age in some rural counties is pushing 60. This situation in the Great Plains is widely portrayed as dire. *The Atlantic* described a “slow death in the Great Plains,” and the *New York Times* spoke of “dying towns” and futures “mired in poverty.”

Without a doubt, the plains are undergoing a period of economic and demographic change—agriculture provides only half as much employment and income to the region as it did in 1969—but where

some see the death of a traditional way of life, others see a landscape full of new opportunities. Land values are rising and nonlocals are buying up property for investment or recreational purposes. Entrepreneurs are creating new enterprises by capitalizing on ecotourism and the preservation of environmental amenities, thus transforming the region’s traditional agriculture-rangeland paradigm into a new nature-based economy.

Hidden in this dynamic process of change is an irony: population density outside of metropolitan areas in the Great Plains has fallen to 1.5 people per square mile—well below frontier density. The frontier that Turner saw as the engine for new institutions and innovations has returned. What’s emerging is a new type of region—one that is led



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by entrepreneurs discovering innovative ways of combining traditional land management with new opportunities on the frontier.

OLD WEST MEETS NEW WEST

“Move ’em out!” On a warm July morning, Jim Collins, a rancher in Montana’s Powder River County, gave out the traditional yell that marks the beginning of the annual Powder River Cattle Drive. The event usually hosts 60 paying guests and involves up to 50 local ranchers. At \$2,200 per person, guests are provided horses and wagon teams for the six-day trip.

On that same morning, Bryce Christensen, manager of the privately funded American Prairie Reserve, got in his pickup to begin a day’s work on

the property. The 121,000-acre Reserve, located on the northern edge of Montana’s Charles M. Russell National Wildlife Refuge, is dedicated to wildlife preservation. All together, 14,000 acres are fenced and devoted to bison. The Reserve leases the other 107,000 acres to nearby livestock owners who use the land for traditional ranching operations, but do so by utilizing moderate grazing—a measure that assures the integrity of the Reserve’s wildlife habitat.

Similar activity occurs on many newly purchased ranches in eastern Montana and western North and South Dakota, where hunters have bought ranches to secure access to good deer and antelope hunting. In most cases, these ranches are leased to local ranch owners for livestock grazing but with certain constraints, such as the maintenance of brush for deer cover.



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It is on-the-ground entrepreneurs who have the time- and place-specific information to adequately adjust to the changes that are taking place in the region.



Across the Great Plains, entrepreneurial arrangements such as these between traditional land users and a growing nature-based economy are unfolding, creating new experiences, institutions, and activities in the same way that Turner described the frontier. Northwest Nebraska High Country, a group of more than 20 local farmers and ranchers, offers lodging, hunting, and recreation on its land in the scenic Pine Ridge region of Nebraska. Similarly, ranches in South Dakota are providing exclusive pheasant hunting operations—an activity that has generated record numbers of out-of-state hunters and delivered a \$153 million boost to its economy.

SAVE THE PLAINS?

Many journalistic depictions of the region have implied an urgent sense of hopelessness throughout the plains, requiring large-scale government intervention and economic revitalization. Senator Byron Dorgan of North Dakota has repeatedly pushed for a New Homestead Act, which proposes

the repayment of college loans for graduates who locate in high out-migration counties, the creation of a \$3 billion venture capital fund, and generous tax credits for businesses willing to locate in rural counties. At the state level, Montana, North Dakota, and South Dakota each have state-funded economic development agencies, where most of the focus is on providing assistance to the areas where out-migration is occurring.

The problem with these top-down efforts to save the plains is that they ignore a basic economic reality: it is on-the-ground entrepreneurs who have the time- and place-specific information to adequately adjust to the changes that are taking place in the region. Local landowners like the Switzer family in Nebraska are better positioned to make the best use of their ranch. By altering their cattle operation to provide a greater diversity of bird habitat, they, along with their neighbors, have created the first privately owned site to be awarded Important Bird Area Status from the Nebraska Audubon Society, increasing returns to their operation and the environment.

Nonprofit groups such as the American Prairie Foundation are also localized agents of change. Guided by the incentives of private ownership, these groups achieve their ends of preserving wildlife habitat by finding the most cost-effective ways to adjust traditional agriculture operations and by engaging in voluntary exchanges with local landowners. For instance, the Nature Conservancy has purchased 6,000 acres on the edge of Badlands National Park and secured control of an additional 20,000 acres of federal grazing allotments. These areas are used to benefit the endangered black-footed ferret as well as to allow modest grazing activity to continue.

What's happening in the Great Plains is being replicated in many other parts of the West, where traditional agricultural activities are adapting to provide more environmental amenities. The important players in the adjustment process are entrepreneurs with local

knowledge and with the incentives to get the right mix of traditional and nontraditional activities. Success in maintaining economic viability in this region depends on these entrepreneurs.

WHERE THE BUFFALO ROAM

In 1987, two New Jersey academics cast their vision for the future of the Great Plains. Frank and Deborah Popper claimed that the settlement of this region was “the longest-running agricultural and environmental miscalculation in American history” and advocated, instead, the creation of a “Buffalo Commons.” Under their plan, the plains would “be restored to its pre-white state” and “in effect, deprivatized.” Buffalo would freely roam as the plains became “almost totally depopulated” over the next generation.



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If bison are to roam throughout the Great Plains, it shouldn't be because planners mandated it, but because people on the ground find it most effective given alternative choices.



To many, their prediction has turned out to be remarkably prescient. The plains have gradually depopulated and a quarter of a million buffalo now roam throughout the West. So, was the Poppers' vision of a "Buffalo Commons" correct? In a sense, it was. The Poppers forecasted a region undergoing dramatic economic and social change—a claim that has undoubtedly been borne out in recent decades.

The Poppers, however, were wrong about *how* change would occur. In fact, they neglected their own words: "A new use for the region will emerge," they wrote in 1987. And that's precisely what's happening; local solutions are emerging from entrepreneurs. If bison are to roam throughout the Great Plains, it shouldn't be because planners mandated it, but because people on the ground find it most effective given alternative choices. In fact this is already happening. The bison that exist on the plains are largely the result of entrepreneurs creating markets for the animals and demonstrating that new ways of thinking about the plains are alive and well.

In the spirit of Frederick Jackson Turner's frontier, the new emergent order on the plains is "breaking the bonds of custom, offering new experiences, [and] calling out new institutions and activities," and it is the job of the entrepreneur to harness these new opportunities on the Great Plains. As for the economic planners touting top-down solutions to save the plains? They'd do the Great Plains a favor by getting out of the way.



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M O V I N G T H E W I N D

BY JONATHAN FAHEY

Montana is a big, beautiful playground for the wind. It howls down the eastern edge of the Rocky Mountains from the north and west, and flies south and east across the empty plains of the eastern part of the state. But that Montana wind turns just 375 megawatts worth of wind turbines. That's 30 percent as much as comparatively calm and crowded New York State, even though Montana's strong and consistent wind has the potential to produce almost nine times as much electricity as New York's.

Montana even lags its windy neighbors, North Dakota and Wyoming. The reason is location. Montana is the extreme example of the problem with renewable power in the United States and worldwide: Renewable natural resources often exist far from people who need electricity, and it is expensive to build or upgrade transmission lines to move it to them. And in the lower 48 states, Montana is just about as remote as you can get.

TRANSMISSION TROUBLES

"We could be the wind energy leader of the West," says Chantel McCormick, Senior Energy Development Specialist for the State of Montana. "All that stands in the way is transmission." The problem is that there's much that stands in the way of actually building that transmission—including, of course, cost. Wind and solar are already expensive compared with the main sources of electricity in the United States—coal, natural gas, and uranium. Add the cost of building transmission lines (and the cost of the electricity lost in transit), and building in places like Montana just isn't worth it, even with subsidies for green power and mandates that specify how much green power states must use every year.



There are a half-dozen transmission lines in early stages of development in the state, all of which are designed to get wind power to the West Coast or Las Vegas. It's unclear if any will be built and, if so, how long each will take. Transmission is one of the most notoriously difficult projects to site, permit, and construct. Projects are known to take 10 to 15 years to get up and moving juice. The reasons are legion, but stem primarily from the fact that lines cross land owned by so many different owners.

Electricity transmission is regulated by state public utilities commissions, so project approvals often get tangled in politics. Building lines that cross several states is even more difficult because state utility commissions have little interest in approving projects designed to help customers in other states (The Federal Energy Regulatory Commission has no power to site lines for the national good, the way it does with natural gas pipelines).

The fact that bureaucracy and politics are at play is hardly surprising. And building on land owned by various federal agencies is always going to be difficult. But it turns out that even siting transmission lines on private land is difficult—far more difficult than, say, siting a wind turbine. The reason is the way landowners are compensated—or not—for transmission.

WIND RESISTANCE

If a developer wants to put a wind turbine on a patch of private land, he offers to pay a per-acre fee and a percentage of the revenues produced by the turbine. Landowners jump at the chance; siting wind

is not a problem in Montana or elsewhere across the West. Ranchers and farmers are eager to harvest wind along with wheat and cattle.

But when a developer wants to build a transmission line, he seeks approval from state regulators. In Montana, this is covered by what's called the Major Facilities Siting Act. If the project is approved, states can condemn land if need be. The landowner is paid a one-time fee for the land under the wires, but the fee can be small—80 to 90 percent of the land's fair market value. After all, being able to threaten condemnation does a lot for one's position at the negotiating table.

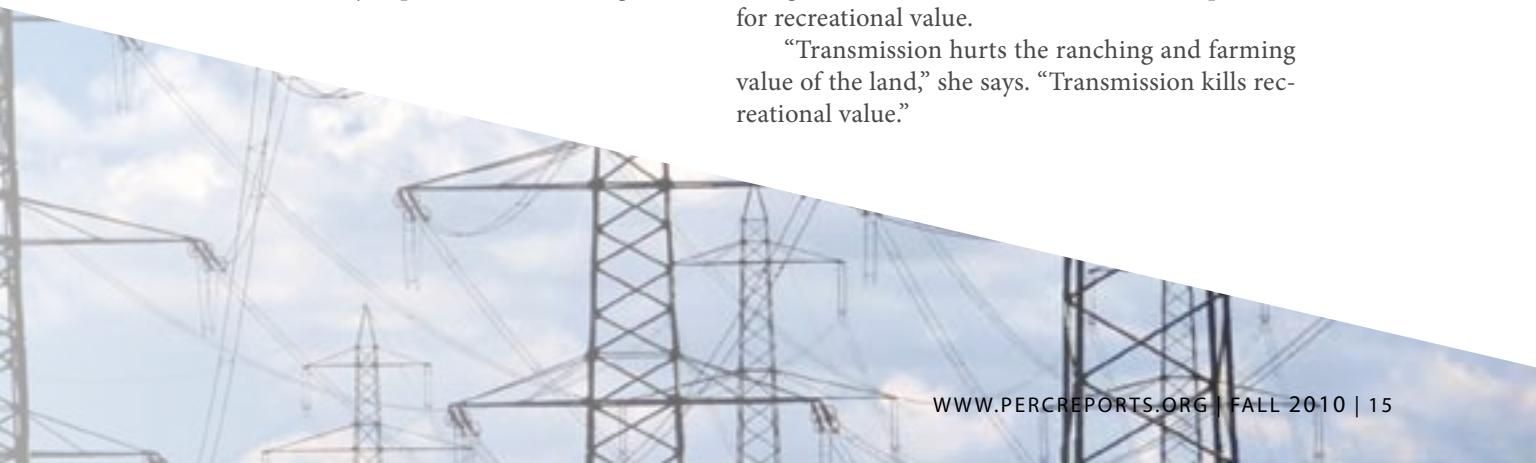
Predictably, it's not nearly enough to compensate owners for what the wires do to the value of their land, so they fight against it instead of for it. It's a case of "not in my backyard"—at least at that price.

"If you paid a fairer price, people would be fighting for transmission to be on their land," says Hertha Lund of the Wittich Law Firm in Bozeman. Lund helps landowners and developers negotiate wind transactions. "It's the single most important factor in getting transmission built."

McCormick notes that the state is trying to help: in 2007 it passed a law to exempt land under transmission lines from property taxes. But that is still not enough.

A transmission line through a ranch reduces the value of the property. It makes the ranch more difficult to farm, and it takes usable acres out of service. Worse, it makes the land less attractive to buyers—especially to buyers who want to own a ranch for its aesthetic value. Lund says ranchland around Bozeman goes for \$800 to \$1,000 per acre for agricultural value, but \$1,200 to \$1,500 per acre for recreational value.

"Transmission hurts the ranching and farming value of the land," she says. "Transmission kills recreational value."





If landowners were paid some fee, even if it were relatively small, for the electricity coursing through those wires, the land could increase in value instead. Paying landowners more for transmission would, of course, just add more to the cost of an already expensive proposition. Yet willing landowners might reduce financing and legal costs if, instead of fighting projects, they advocated for them.

Developers of one new line being built in Montana, called the Montana-Alberta Tie Line (MATL) hoped not to have to use the condemnation powers afforded them under the Montana Major Facilities Siting Act. Now, though, they are faced with opposition along certain points of the line. In July, MATL's developer, Tonbridge Power, filed a complaint (through a subsidiary) for condemnation of land owned by a couple who live near Cut Bank.

Because Tonbridge, which is based in Toronto, is a merchant transmission company and not a regulated utility, there is some question whether it should have been given condemnation authority in the first place. Lund, for one, says she would be willing to litigate it on behalf of landowners.

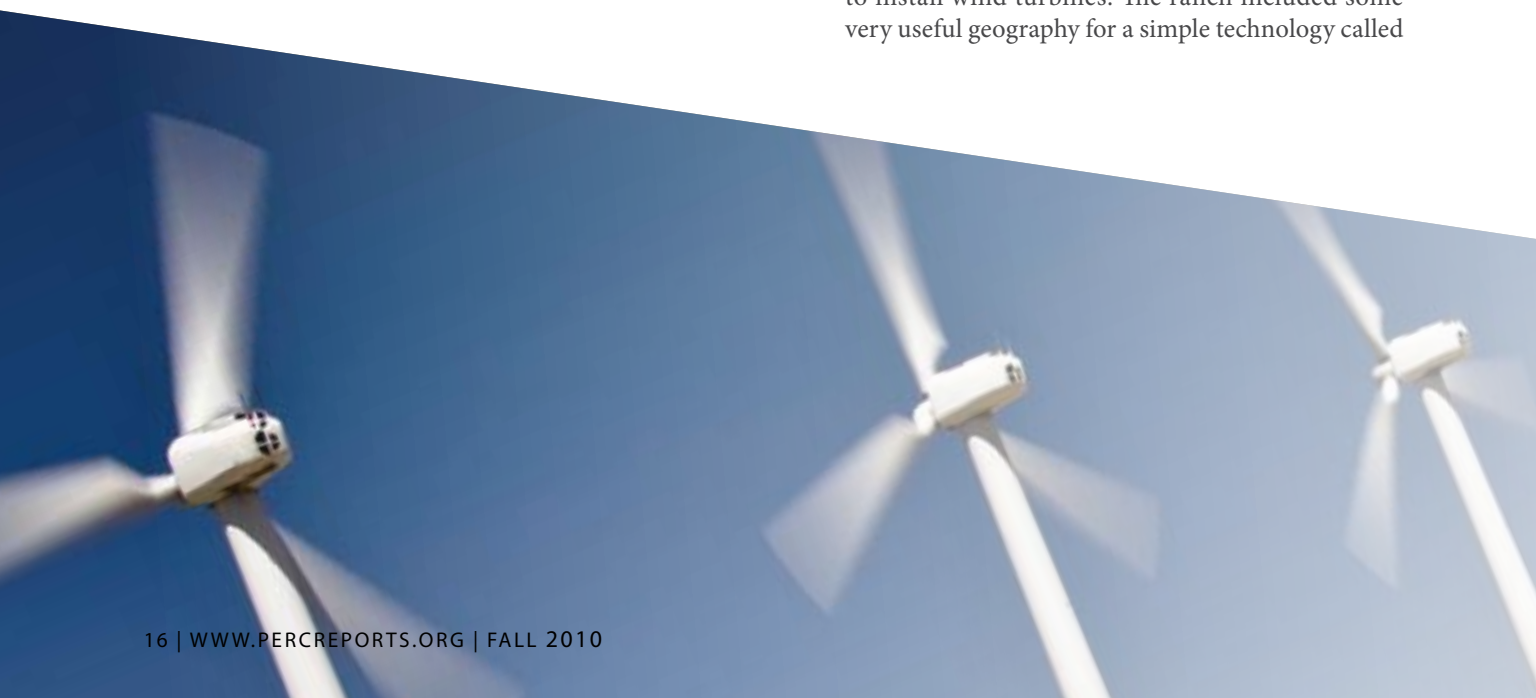
Transmission companies argue paying tolls to landowners would simply make the cost of transmission—and therefore electricity—far too high. And if power providers have to pay tolls, shouldn't phone companies and natural gas companies too? If so, that would boost costs for those services also.

In the meantime, companies are coming up with ways to try to make the economics of transmission a little better, and thereby spark more wind development in Montana.

A SPARK FOR WIND POWER

Part of what makes transmission for wind expensive is that the wind doesn't blow all the time. That makes for empty wires that aren't earning enough revenue to justify their cost. Grasslands Renewable Energy, a transmission and generation startup in Bozeman, thinks that adding storage can make the numbers work by allowing the transmission capacity to be better used. When the wind is howling, store some of that electricity; then use it to fill the wires when all is quiet.

Grasslands President Carl Borgquist knows a cattle rancher near Martinsdale who was hoping to install wind turbines. The ranch included some very useful geography for a simple technology called



pumped storage. Pump water uphill when there's lots of power to be had, and let it flow downhill through a hydroelectric turbine when power is needed. The ranch has a butte with a 1,200-foot vertical drop not too far from a large transmission line.

Grasslands' plan is to build a pair of 1.5 billion gallon lakes, one on the butte and one below. At the bottom will be turbines capable of putting out up to 400 megawatts of power. This pumped storage facility could be the linchpin of a system that could service 3,000 megawatts' worth of wind turbines (nearly three times the state's current capacity) and, because of the storage component, promise customers 1,000 megawatts of consistent renewable power.

It's an elegant plan, but it will be hard to pull off. To get all of this done requires Grasslands to coordinate the construction of the storage facility and the wind farms, which landowners love, with transmission, which they don't.

This is why so many worry it will be a long time before Montana can put much of that playful wind to work. "A lot of my clients would like to see a wind farm because of what it would mean to them," says Lund. "But none of them are betting on it. That's a crop that's pretty iffy at this point."



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ECONOMIST, n. A scoundrel whose faulty vision sees things as they really are, not as they ought to be. —after Ambrose Bierce

PROPERTY RIGHTS TO SURF BREAKS

In open-access settings, high quality resources are lucrative; yet keeping out potential entrants may be extremely costly. This combination—valuable resources in the presence of high exclusion costs—has played a pivotal role in creating the “race to fish” and a consequent destruction of many of the world’s fisheries. Yet private interests have protected some fisheries and other open-access resources that are not shielded by formal, government-enforced property rights. There is thus growing interest in the conditions under which private, or informal, protection of such resources is possible. Recent research by Daniel Kaffine (2009) has uncovered an unlikely venue for understanding such private solutions—surfing in California.

Areas along the coast known as “surf breaks” are locations where waves are particularly conducive to high quality surfing. California law defines the coast as open access up to the high-tide mark. This makes surf breaks a classic, open-access resource, subject to overexploitation due to excessive entry by individuals seeking to enjoy the resource. Yet Kaffine finds that long-time regular surfers, known as “locals” (or surf gangs), routinely enforce informal property rights to the surf breaks, a practice known as localism. Their creation and enforcement of informal property rights dramatically reduces congestion from “nonlocals,” thereby preserving the quality of the surf breaks.

The finite number of waves per hour at potential surfing locations implies that surf breaks are congestible resources whose value can be degraded by too many people trying to surf, but both localism and etiquette have emerged to deal with congestion. Etiquette helps users decide who gets to ride which wave at a site, thus reducing collisions and enhancing the experience for all users. Localism, enforced by unpleasant verbal assaults, and sometimes physical hostility, serves as a method for rationing who gets to surf where.

The starting point for localism is long-term investment in surfing at a particular location. Such investment creates benefits. Many locations, for example, have hidden hazards such as underwater rocks or dangerous currents, and local knowledge can reduce the harms caused by them. In addition, knowledge of how to read the water at a particular location can lead to better surfing. The value of such investments can be sharply reduced or wiped out by congestion; hence locals are willing to devote resources to prevent excessive entry by nonlocals.

Overall, Kaffine finds that at higher quality surf breaks, locals engage in more attempts to restrict entry by nonlocals, resulting in more secure property rights at such locations. The possibility that the private creation of property rights would be more likely to emerge for more valuable resources was first suggested by Harold Demsetz (1967). But Kaffine’s work goes further, for he shows that while Demsetz’s proposition is confirmed in the case of surf breaks, it is *not* the only possible outcome. In particular, Kaffine demonstrates that a rise in the value of a resource can actually lead to so much entry by nonlocals seeking

to capture its value that local efforts to protect it are overwhelmed. The result is excessive congestion and a diminution, even destruction, of the value of the resource. For example, although locals are generally successful in defining and enforcing informal property rights at higher quality surf breaks, there are exceptions—such as when a break is close to a major metropolitan area—where locals are unable to prevent congestive entry by nonlocals.

Kaffine's work offers us several insights. First, even when there are no formal property rights, it is possible for users of a resource to implement and enforce informal rights that protect the resource from overuse. Second, while local users generally will undertake greater efforts to define and enforce rights to more valuable resources, there is no guarantee that their efforts will be successful. If nonlocals value the resource enough or have sufficiently low costs of entry, they can readily overcome attempts to prevent congestive (and destructive) entry. It is easy to imagine that such factors played a role in the near-extinction of the High Plains bison, for example, and have played a role more recently in the degradation of many ocean fisheries.

This brings us to the final point. In the case of California surf breaks, because state law declares the coastline to be an open-access resource, private, informal action by surfers is necessary to protect surfing resources from excessive entry and congestion. Despite the overall success of these private actions, this is a high cost endeavor—one that has not always been successful. Indeed, the real lesson of the California surf gangs is remarkably similar to the lessons we are learning about ocean fisheries and other potential open access resources: Sometimes common-pool resources are destroyed not because of private action, but despite it. It is a lesson that will become increasingly important in the years ahead.

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E C O S Y S T E M

AT YOUR SERVICE?



BY JAMES SALZMAN

When visiting a store, one expects to find useful goods and services such as apples to eat and a refrigerator to keep them chilled. We depend on similar items in our everyday lives. In much the same way, nature also provides us valuable goods and services. When we bite into an apple, if we pause to think beyond the store where it was purchased, we may think of soil and water, but probably not the natural pollinators that fertilized the apple blossom so the fruit can set. When we drink a glass of tap water, we may think of the local reservoir, but not the source of the water quality, which lies miles upstream in the wooded watershed that filters and cleans the water as it flows downhill.

Largely taken for granted, healthy ecosystems provide a variety of critical goods and services. Created by the interactions of living organisms with their environment, “ecosystem services” provide both the conditions and processes that sustain human life. Trees provide timber; coastal marshes provide shellfish. That’s obvious. The services underpinning these goods, though less visible, are equally important. If you doubt this, consider how to grow an apple without pollination, pest control, or soil fertility.

A specific landscape creates a range of ecosystem services. A forest at the top of a watershed, for example, provides water quality by filtering contaminants from the water as it flows through roots and soil, flood control as the water slows while moving through the watershed, pollination by those pollinators living along the edge of the forest, and biodiversity conservation if endangered plants or animals live in the woods. Or consider something as simple as soil. More than a clump of dirt, soil is a complex matrix of organic and inorganic constituents transformed by numerous tiny organisms. The level of biological activity within soil is staggering. Under a square meter of pasture soil in Denmark, for example, scientists identified more than 50,000 worms, 48,000 small insects, and 10 million nematodes. This living soil provides a range of ecosystem services: buffering and



moderation of the hydrological cycle, physical support for plants, retention and delivery of nutrients to plants, disposal of wastes and dead organic matter, and renewal of soil fertility.

Just as we tend not to think about everyday goods and services until the store is out of apples or the refrigerator stops working, so, too, do we fail to appreciate the importance of services until we suffer the impacts of their loss. One cannot easily appreciate the impact that widespread wetland destruction has had on the ecosystem service of water retention until after a flood. Nor does one fully appreciate water quality until recognizing how development in forested watersheds has degraded the service of water purification. The costs from degradation of these services are high, and are suffered in rich and poor countries alike.

WHY ARE SERVICES IGNORED?

Despite the central role ecosystem services play in the provision of important benefits, they are only rarely considered or protected by the law. Nor, in the past, have significant markets arisen that capitalize on the commercial value of these services. The reason for this neglect is threefold. First, we are often either ignorant of the sources of the ecosystem

goods and services we depend on, or we lack the scientific knowledge to predict with certainty how specific actions affecting these factors will impact the local ecosystem services themselves. Second, institutional barriers such as jurisdictional boundaries and inadequate property rights often hinder the development of markets for these services. And third, the ecosystem services underpinning these goods are often treated as if they are free.

Take the example of wetlands and their role as a nursery for young fish. The wetlands owner provides a benefit to anglers and those who like to eat fish by providing habitat for minnows to grow and reach maturity. But these benefits are uncompensated. The market value of the wetlands depends on its location, the pressure for coastal development, and the scarcity of alternative development sites. The service benefits it provides are simply not part of the current calculation. If the wetland is developed, the nursery's benefits will be lost; yet there are no market signals to suggest they should be considered in the transaction. Because we can easily value ecosystem goods such as timber or fish, we tend to invest in extracting these goods even if it means degrading certain services related to their production.

How can the problem be remedied? Why not simply recognize this situation for what it is—the



Why not treat the landowner's provision of the wetland as no different from his or her provision of other marketable goods?

provision of valuable services to consumers—and realize this through an explicit arrangement of payments for services rendered? Put another way, why not treat the landowner's provision of the wetland as no different from his or her provision of other marketable goods? The wetland's nursery habitat and water filtration services may also be treated as a business transaction, where wetland owners manage their land to grow the crop of fish habitat and water quality much the same as dairy and potato farmers do for their cash crops. This is the concept behind payments for ecosystem services.

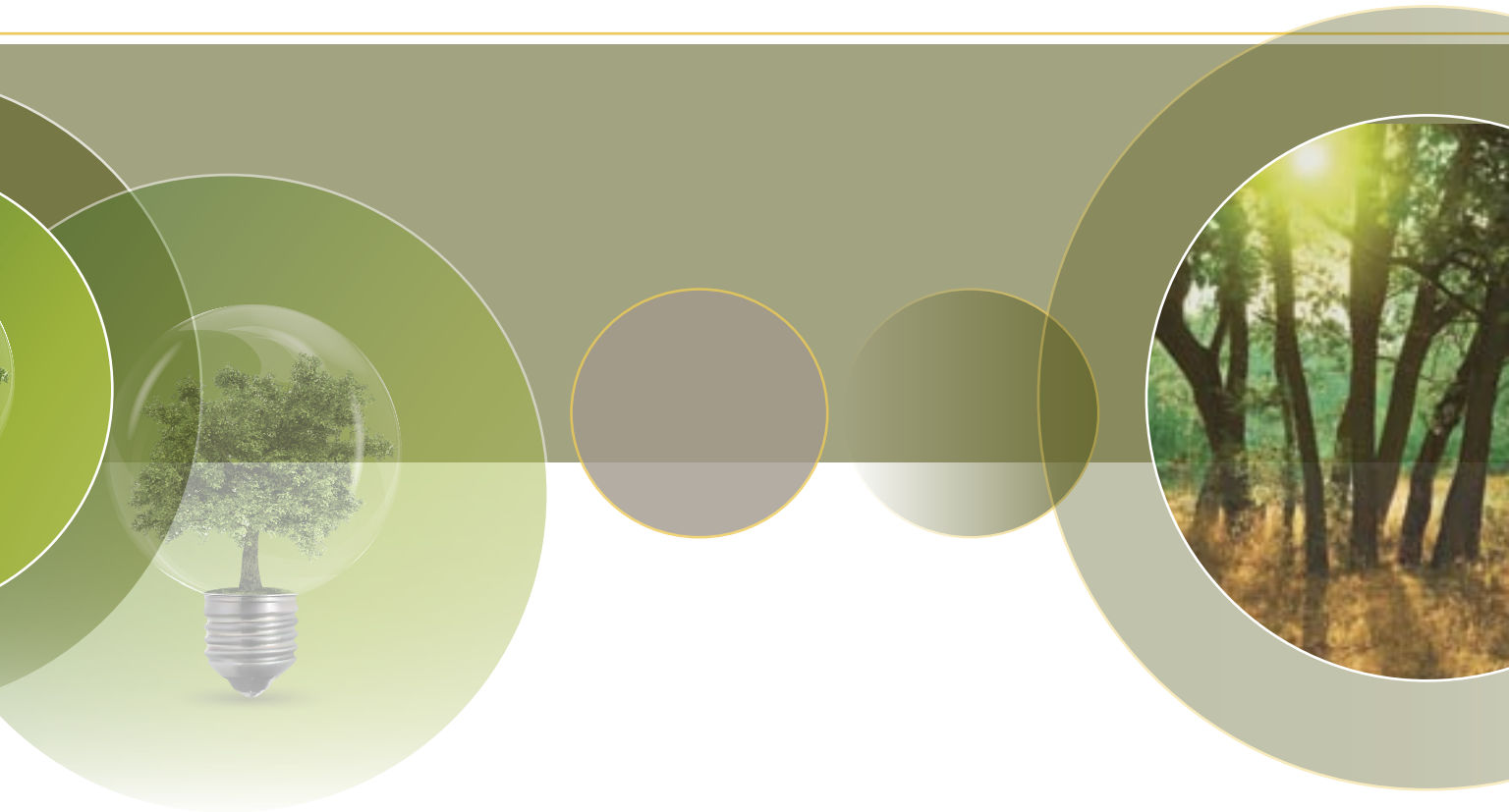
PAYMENTS FOR SERVICES

Payments for ecosystem services (PES) refers to voluntary transactions where a service provider is paid by, or on behalf of, service beneficiaries for land, coastal, or marine management practices that are expected to result in continued or improved service provisions. This type of scheme occurs over different scales—from pollination of local farms and erosion control in a watershed to “shade grown” coffee beans sold half a world from where they were grown. PES also spans a wide range of

transaction types, from one-off payments for a biodiversity offset to arm's-length market transactions for carbon credits.

While the principle of PES is simple—those who benefit from service provision should pay the providers—there are challenges to implementing them successfully. It is difficult, for example, to prevent someone who did not pay for an ecosystem service from benefiting from it; it is equally difficult to get people to agree now to pay for provision of these services. Why pay for something when you have always gotten it for free? As a result, a key challenge in designing a PES scheme lies in creating a market that does not now exist—in capturing the value of the service by compensating the providers for the benefits they provide. This approach, notably unlike that of traditional regulatory or tax instruments, views environmental protection much like a business transaction between willing parties.

Despite these challenges, people are finding ways to engage in PES agreements. For example, Energía Global, a private hydropower company located in the Sarapiquí watershed in Costa Rica, provides electricity for about 400,000 consumers. The company wanted to protect the watershed in order to increase



the reliability of streamflow throughout the year and to reduce sedimentation. Energía Global pays owners of upstream private land to reforest their land, engage in sustainable forestry, or conserve forest cover. Landowners who have recently cleared their land or landowners planning to replace natural forest with plantations are not eligible for compensation. A local NGO oversees the implementation of the conservation activities, carries out technical studies, and administers the scheme (for more information see *PERC Policy Series #48*).

Payments for ecosystem services represent a promising development not only in terms of conservation mechanisms but, more generally, in how we think about conservation. By identifying the critical role that landscape management plays in providing valued services, PES frames environmental protection explicitly as a matter of private ordering—as a transaction between suppliers and beneficiaries. In some cases, this can create an attractive and more effective alternative to traditional regulations.

This arrangement also encourages landowners to view their property in a different way. With PES in mind landowners can identify new streams of income that may not have been recognized or op-

timized before, creating incentives to manage their properties specifically for the provision of clean water, biodiversity, or other amenities.

Payments for ecosystem services, of course, are not a silver bullet. Absent the perceived scarcity of the service, discrete buyers and sellers, secure property rights, and other conditions, it is unlikely that PES schemes will emerge. That said, PES represents a promising development of voluntary exchanges through markets that enhance environmental asset development. As we learn more about the values of the complex resources provided by an ecosystem, we become more willing to invest in husbanding those resources.



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A TALE OF TWO RANCHES

BY REED WATSON



On an early September morning, Cody Ball, a rancher near Roundup, Montana, sees two dozen elk cross the public land boundary onto his ranch. To many wildlife enthusiasts, this scene would be idyllic, but to Ball it is a nuisance. Big game animals routinely bust fences and forage on valuable crops. Because of this property damage, many landowners in Montana consider wildlife a liability and do nothing to improve their habitat on private lands.

Six hundred miles south, a similar scene unfolds as Stan Deroulis, a rancher in northwest Colorado, sees a herd of elk foraging on the alfalfa meant for his cows. Between the forage consumption and the property damage, wildlife costs the ranch thousands of dollars each year. But as Deroulis watches the elk feed, a wry smile comes to his face. He considers the elk an asset and actively invests in improving their habitat on his ranch.

Why such a disparity in these two ranchers' outlook toward elk and elk habitat? Each is merely responding to the incentives created by their state's wildlife management programs.

Under Montana's Block Management Program, landowners have little incentive to provide quality wildlife habitat or public hunting opportunities. In Colorado, however, a program known as Ranching for Wildlife (RFW) uses financial incentives to encourage wildlife stewardship and quality public hunting experiences on private land. The difference in the two programs is subtle, yet it has an enormous effect on wildlife management in two otherwise similar states.



The source of much of the tension that pervades rural land management discussions is the existence of public wildlife on private land. This creates what economists call a split ownership problem: the state owns the wildlife, but private landowners own much of the habitat critical to wildlife survival. What matters for successful wildlife management is a combination of these two valuable resources: wildlife and habitat.

The challenge of split ownership is dividing the returns from the resource combination of public wildlife and private lands in such a way that both resource owners—the landowners and the state—are rewarded for their contributions. Instead, in many states, landowners don't get any returns from wildlife habitat, they only pay the costs. Ranchers like Ball bear the costs of wildlife eating their crops and damaging their property but rarely receive compensation from the state. In Montana alone, the estimated annual cost of forage consumed by big game species on private lands exceeds \$31 million. This expense threatens the financial stability of cash-strapped agricultural producers as well as their provision of public goods such as open space. It also turns wildlife into a liability for many private landowners who then allow public hunting as a way to drive the wildlife off the property.

IF IT PAYS, IT STAYS

Colorado has developed a way to encourage landowners to provide wildlife habitat by creating mutual returns to the private landowner and to the state wildlife agency through Ranching for Wildlife. Not to be confused with game ranching, RFW creates a partnership between private landowners and wildlife habitat purveyors and the state as owner of the wildlife. Specifically, longer hunting seasons and transferable hunting tags allow participating landowners to lease hunting rights directly to high-paying, nonresident hunters. In return for this profit potential, enrolled landowners provide valuable public benefits, namely, a certain amount of free hunting access for Colorado residents and very specific habitat improvements for both game and nongame species.

To ensure that the profit motive generates public benefits, the number of transferable tags an enrolled landowner receives depends on the number of animals on the property, the completion of habitat improvement objectives, as well as the satisfaction and success ratio of public hunters. In short, RFW solves the split ownership problem by sharing the returns generated from combining public wildlife and private habitat.

RANCHING FOR WILDLIFE SOLVES THE SPLIT OWNERSHIP
PROBLEM BY SHARING THE RETURNS GENERATED FROM
COMBINING PUBLIC WILDLIFE AND PRIVATE HABITAT



DIFFERENT OBJECTIVES, DIFFERENT
INCENTIVES

Unlike Colorado, Montana does not reward private landowners for improving wildlife habitat or allowing public hunting access. Although the state's Block Management Program pays enrolled landowners a small fee for every hunter they allow on their property, this payment is explicitly intended to only offset the impacts of allowing public access. As such, block management is more of a break-even proposition than a profit opportunity for landowners. Furthermore, it offers no compensation for wildlife habitat improvements.

In this way, the program fails to resolve the split ownership problem created by public wildlife on private land. Indeed, block management was never intended to solve this problem. Rather, it was intended to maximize the quantity—not necessarily the quality—of public hunting opportunities. As such, Montana ranchers still bear the full costs of the public's wildlife spilling onto their land, but reap only a fraction of the potential benefits.

Although private landowners in Montana can and do lease their property's hunting rights, the value of those leases is significantly reduced by the uncertainty of a nonresident drawing the required hunting licenses and permits. Moreover, such leases are not conditioned upon the private landowner granting public access or improving wildlife habitat, as is required by Colorado's RFW program. In essence, the total amount of pie available is less than it could be if the state and the private landowners combined forces and shared in the returns from wildlife.



THE NIRVANA FALLACY

Admittedly, Colorado’s Ranching for Wildlife program is not perfect. Landowners without the requisite 12,000 contiguous acres could undoubtedly improve wildlife habitat and public hunting opportunities, but they are excluded from the program. Some hunters complain that the public hunts on enrolled properties are poor and that the private landowners save their best places and best dates for the paying (nonresident) customers. And other critics decry the privatization of Colorado’s wildlife, claiming that the state has violated its fiduciary duty as wildlife trustee by letting a small group of private landowners profit from a public trust resource.

Accurate or not, these allegations of imperfection do not justify rejecting the concept. Doing so risks falling victim to the “Nirvana Fallacy”—the belief that even superior alternatives should be rejected if they fail to achieve a perfect policy. The more appropriate consideration is whether RFW or some other policy where wildlife owners and habitat producers share in the costs and benefits of wildlife management is superior to one where they do not cooperate. Indeed, public access to enrolled ranches might not be available during the best hunting periods, but some access is better than none. Similarly, private landowners might derive profits from a public trust resource such

as elk but, as a prerequisite to earning those profits, they might also generate public benefits such as open space so that the quid pro quo does not violate the Public Trust Doctrine.

Several states across the West are harnessing the incentives to promote stewardship by embracing ranching for wildlife programs. These programs are providing landowners with new ways to realize higher returns from wildlife, allowing wildlife agencies an opportunity to get better wildlife management at a lower cost, and offering more opportunities to both free and fee hunters. More broadly, as stated in PERC’s *Hunting for Habitat: A Practical Guide to State-landowner Partnerships* (1999), “Ranching for Wildlife helps achieve a goal that all Americans want—lands flowing with clean streams, enriched with natural vegetation, and full of free roaming wild animals.”



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TAKING STATE PARKS OFF THE STATE'S BOOKS

In the grand scheme, state parks are an amenity that generally falls lower on the state's priority list than education, health care, and corrections. Hence, parks often become political footballs in fights over spending reductions, which tends to result in parks being left alive but far from fiscally healthy or properly maintained.

A recent proposal in Arizona to lease state parks to private concessionaires offers a restructuring model states should consider as they contemplate solutions to ensure the long-term fiscal sustainability of state parks. One of the largest national recreation concessionaires, Recreation Resource Management, offered to lease six Arizona state parks targeted for closure amid recent budget cuts. They proposed to collect the same visitor fees the state charges today, while taking the operations and maintenance costs of these parks off the state's books entirely. Further, the concessionaire would pay the state an annual lease payment based on a percentage of the fees collected. The state would retain full ownership of the land, and the company would be subject to strict state controls on operations, visitor fees, maintenance, and other key issues.

In essence, the private sector is offering to take over the operations and management of cash-strapped Arizona state parks, keeping them open at no cost to the state. And there's no reason this same model could not be applied elsewhere—in fact, it already is.

The term “concession” can mean different things and needs clarification. A ubiquitous type of parks-related concession might involve having a private company run a retail store, food, or equipment rental operation within a government park. For example, private concessionaires currently operate the commercial activities (e.g., lodging, retail, and food) in the “crown jewels” of the national parks, including the Grand Canyon, Yosemite, and Yellowstone. However, this is a more limited type of concession than discussed above.



In the “whole park” context, a concession would essentially be a long-term (10–20 year) lease of the entire operation of a park (or group of parks) under a performance-based contract with a private recreation management company. Agencies such as the U.S. Forest Service, Tennessee Valley Authority, California State Parks, and the Lower Colorado River Authority have made extensive use of concessionaires to operate and maintain complete parks and campgrounds. During the famous federal government shutdown during the Clinton administration, the only federal recreation facilities that remained open were those run by concessionaires under leases.

Contracts are usually structured as commercial leases in which the concessionaire collects the gate fees to fund their operations and maintenance costs, including labor. No public subsidies are required—in fact, the concessionaire pays a set percentage of the gate revenues to the public agency as an annual lease payment.

Concessionaires can simultaneously increase the net revenue to the government and realize their own profits given that they can tap a lower cost, more flexible labor force, and realize significant economies of scale in procurement. California State Parks has even entered into concessions that require the private operator to finance, construct, and run new and costly cabins and campground facilities that the state could not otherwise afford to build on its own.

Concessionaires are only allowed to do what the public sector allows them to under the contract, and they cannot change fees or facilities and operating policies without approval from the parks organization.

The public authority sets the

recreation or preservation mission for the park, and the contract requires concessionaires to manage the park to that mission. If that means “disturb nothing, build nothing, just run clean facilities,” so be it. And fears of concessionaires “cherry-picking” the profitable parks are unfounded, as it is common practice for authorities like the Forest Service to bundle together money-losing parks alongside break-even or revenue-positive parks in concession agreements.

For cash-strapped states, concessions offer the opportunity to turn money-losing parks into revenue generating assets that can be leveraged to help keep other parks open and thriving. And the idea seems right at home in Virginia, a state that has for decades embraced the concept of public-private partnerships and privatization to deliver new highway capacity, mental health facilities, prisons, and other vital public infrastructure.

It’s for all of these reasons that parks concessions seem like a no-brainer to consider as a viable and positive alternative to budget cuts, park closures, tax hikes, and other sub-optimal policy choices. Even if policy makers believe that it is a core function of government to provide public recreation land and facilities, it does not then follow that government has to be the one to operate those facilities. The federal public land authorities have realized this, and it’s time for states to follow suit.

Policy makers should ask, is there anything inherently governmental about collecting gate and camping fees, selling firewood to campers, and cleaning restrooms in state parks? If the answer is “no,” then states should explore the opportunity to let private operators perform these functions—taking parks off the state books while paying the state for the privilege to do so.

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Submit your *Impressions* of markets and the environment to: Laura@perc.org



The Accidental

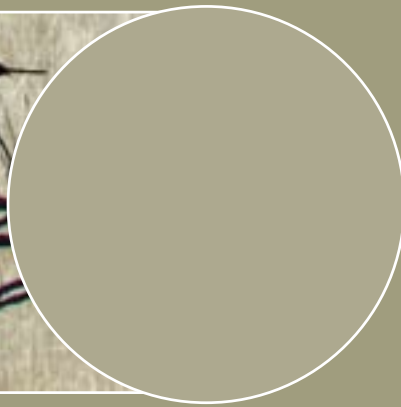
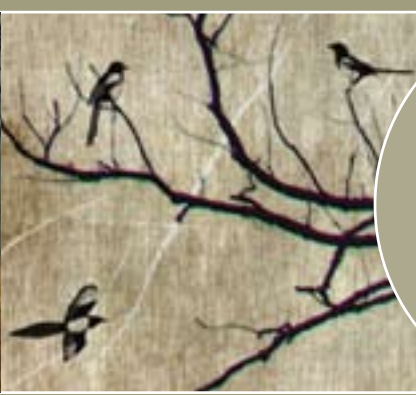
BY HOLLY LIPPKE FRETWELL

“That is spectacular!” “Who owns this?” “Check out the wide-open space!” These were comments made this summer by participants of the PERC/Liberty Fund cosponsored colloquium on Free Market Environmentalism. The annual program offers 25 undergraduate students the opportunity to explore how property rights and markets can help improve environmental quality. To bring theory outside of the classroom and into the real world, the group spends a day exploring on-the-ground examples of free market environmentalism.

One destination for 2010 was the Granger Ranches owned by Jeff Laszlo (featured above). A native of New York, Laszlo came to manage the family ranch just a decade ago. That Laszlo became a rancher was no accident; childhood visits to the ranch pumped the desire to work the Montana range into his blood. But it was by accident that he became an environmentalist.

The 13,000-acre ranch sits in the middle of the Madison Valley amidst a one million-acre corridor that runs from the small town of Ennis, Montana, south to Yellowstone National Park. The valley is channeled by the Madison River and framed by the Madison and Gravelly mountain ranges. Most of the valley is privately owned, skirted by federal lands and an occasional state allotment. This area is famous for having the greatest ecological abundance in the greater Yellowstone ecosystem.

Change may be at the cusp, however, as properties like the Granger face the ever increasing pressures of rising operational costs, low returns on investment, encroaching development, wildlife, and inheritance issues. These hurdles often force the sale of



E n v i r o n m e n t a l i s t

large land holdings that can have dire environmental consequences by disrupting the wildlife corridors that run through the valley.

Laszlo is responding to these challenges with a push for conservation and a diversification of the values his land represents. In Laszlo's words, "Some only see value in the forage that can be raised on the land as crops or native pasture, but I now see a new set of values that include biodiversity, habitat, water quality, and open space. As these things become rarer, the value they represent will become more precious in many ways." In this way, Laszlo sees managing the Granger Ranches as a "balancing act between consumptive practices and preserving the land for the important biological and economic values it represents."

Yet, the very ecological abundance that makes the Madison Valley a treasured place can also present complications to livestock producers. Vast herds of elk compete for the same forage needed to raise cattle. And the number of wolves in the region now exceeds a "sustainable" population according to the original reintroduction plan. While wolves help keep the elk numbers in check, they occasionally feed on the cattle that ranchers depend on to make ends meet. Just the presence of predators like wolves can stress livestock enough to reduce weight gain, which translates into decreased cattle revenues.

INVESTING IN CONSERVATION

Conservation measures such as those taking place on the Granger Ranches are providing public benefits, but many of these benefits are provided without compensation to the private landowners who provide them. Despite these complications, Laszlo and others are investing in conservation efforts to protect their land and enhance its wildlife habitat. The Undaunted Stewardship Program in Montana is evidence of the many agricultural producers that are willing to put forth resources for wildlife conservation and the longevity of the productivity of the land. The program certifies producers who create grazing plans and continually monitor the productivity and health of their land. This provides benefits for wildlife as well as for livestock, which improves the rancher's bottom line.

Agricultural producers are also investing in future landscapes and habitat by working with diverse groups such as land trusts and public agencies who share common goals. One tool used to ensure working lands will remain undeveloped and continue to provide open space and wildlife habitat is the conservation easement. More than 50 percent of all private land in the Madison Valley is protected from division or development. The easements on the Granger Ranches and its neighbors represent a 30,000-acre area of prime habitat and open space for wildlife.



Many wetlands were filled under government subsidy programs in the mid-twentieth century to enhance production and livestock forage.

WETLANDS REVIVAL

In the last five years, eight miles of spring-fed creeks and more than 500 acres of wetlands have been restored on the Granger. This is a big change from the miles of drainage canal excavated into the land in the 1950s to dry up swampy ground and make it more agriculturally productive. Additionally, the headwaters of O'Dell Creek, which lie in the lowlands of the Granger Ranches, were rerouted into a shallow, straight ditch that would often reach 70 degrees—a perilous temperature for native trout. This story is not unique; many wetlands were filled under government subsidy programs in the mid-twentieth century to enhance production and livestock forage.

Today, with the cooperative efforts of Laszlo and public and private partners, the Granger is beginning to look more like the wetland it once was. To recreate the wetland, Laszlo harnessed funding from PPL Montana (an energy conglomerate), the Department of Agriculture, the U.S. Fish and Wildlife Service, and other private donors. The restoration, a massive dirt-moving project, is creating many benefits in return. It has increased flow to the Madison River (providing water for irrigation and recreation, habitat for fish, and power for electricity), decreased water temperatures (enhancing fish habitat) and transformed miles of creek-side land from dry forage to lush floodplain

(creating homes for geese, terns, sandhill cranes, and several other birds not seen there for fifty years). Yet, Laszlo will tell you, “We’re still a working ranch and not a wildlife preserve, although one might not know it from the abundance and diversity of species one sees in the area of our restoration project.”

Because natural wetlands like those found on the Granger Ranches are rare and offer important habitat in the West, public agencies often help share the cost of protection and restoration. The U.S. Fish and Wildlife Service, through its Partners for Fish and Wildlife Program, has worked with the Granger Ranch to do just that. This is viewed as a win-win by both Laszlo and the federal government. It is a synergy that has enhanced both public resources and private landholdings, making them more productive.

This synergistic arm has also reached a national corporation. PPL Montana has provided millions of dollars to help fund conservation and restoration projects on both private and public lands. While this creates tremendous goodwill, it also relates to operational requirements. Relicensing a dam under the Federal Energy Regulatory Commission requires PPL to maintain minimum water flows and sets a maximum water temperature allowed on dammed rivers. Flow and temperature can be controlled by the quantity of water allowed to spill through the dam. Restoring wetlands like those on the Granger



Laszlo's ranch "exemplifies how one can increase profit by conserving environmental amenities."

Ranches helps to ensure sufficient water flow, as the spring creek is a reliable source of cold, clean water for both wildlife and the public.

FENCES MAKE GOOD NEIGHBORS

While the ranch is not open to the general public, the restoration project that has been funded with both public and private dollars provides great benefits to the public. The additional dollars have helped protect open space, enhance wildlife corridors, and create quality habitat for fish and avian species. Regardless, some people believe that public money should only be spent where public access is part of the equation. This can be a nonstarter when it comes to convincing private landowners to partner with agencies and others to pursue conservation work like the Granger Ranches have done. Laszlo has made an effort to involve the public through ranch hosted tours and other educational opportunities. "I love taking people down to the wetlands project and sharing this incredible place. It is inspiring to see what can be done when we work together. If all people want to talk about is access, I think they are missing the point entirely."

Laszlo's efforts to forge partnerships with private and public funders have helped enhance the sustainability of his ranch. As an "enviropreneur" who does well while doing environmental good, Laszlo

has taken his family ranch in a unique direction and may be setting a new model for others to follow. As one of the students on the tour said, Laszlo's ranch "exemplifies how one can increase profit by conserving environmental amenities." And this is precisely how Laszlo became an environmentalist—by recognizing the value of his environmental amenities and managing for them.

If you are interested in visiting the Granger Ranches, contact Madison Valley Expeditions at 406-682-5667.



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E A T T O E X T I N C T I O N

In the early 1990s, a few lionfish, perhaps a half dozen, were released into the warm waters of the South Atlantic. For aquarium enthusiasts, these fish imported from the western Pacific are show-stoppers. Their long colorful fins wave gracefully as they swim, drawing attention like the plumes on a strutting peacock. In addition to their beauty, they also are also known to be voracious predators and prodigious reproducers, with females releasing up to two million eggs a year.

They now populate the coastal waters of the Southeast United States and the Caribbean where they are depopulating coral reefs of the native fish who live within their nooks and crannies. The lionfish hunts its prey in a manner previously unknown in this part of the ocean, making native fish unusually vulnerable. By rapidly fanning its fins, it is able to herd juvenile fish into corners with no escape and then suddenly suck them into its mouth like a vacuum. Reefs that have been continuously studied for many years by marine biologists are now barren of fish, and with no herbivores present to keep the plants in check, sea grass is growing over the reefs.

Once prized for their exotic looks, lionfish are now viewed as dangerous invaders putting other fish and marine habitats at risk. The Caribbean Fisheries

Management Council has taken a cue from western frontier days by creating posters broadcasting “Mas Bucsado—Pez Leon—Preferriblemente Muerto” or “Most Wanted—Lionfish—Dead not Alive.” Scientists with NOAA have launched their own campaign to rid the region of lionfish. “Eat Lionfish” is their mantra. The fish is light, delicate, and tasty once the venomous spines and poison sacs have been removed, and it is a popular item on Asian menus. The scientists are encouraging chefs to develop new recipes and restaurants as far north as Washington, D.C., are now offering lionfish fritters and even ceviche.

Markets have always had a powerful impact on the fishing industry. As consumer demand for one type of fish grew, fishers responded, sometimes by nearly fishing that species out of existence. Scientists are now working to help recover these populations and restore the integrity of the fisheries. In the case of lionfish, however, scientists would like nothing more than to employ markets to drive the lionfish to extinction in the South Atlantic. Unfortunately, this slippery predator has yet another survival advantage. It cannot be hooked or netted, and is typically hunted with a spear. Unless spear fishing suddenly catches on in a big way, a market solution to this problem might be out of reach. But it was a good thought.



For more information visit: www.caribbeanfmc.com/LIONFISH/lionfish.htm



T H E T R A I N T H A T D O E S N O T S T O P

A new design for a high speed passenger train has been described by some as a brilliant Chinese innovation. It is unique in that it never stops as it journeys from one destination to the next. When the train comes to a station, it slows and the passengers are able to board or exit by making a small leap through the open doors. To avoid possible slips or trips, some designers have suggested a chute and a cushioned landing surface. Although possibly brilliant, it is hard to imagine this new form of transportation. In fact, such a train does not exist, but there are plans on the drawing board for a train that never stops.

Boarding and exiting this futuristic train will actually be done through a connector cabin that rides on the roof of the train. Passengers wait for the train inside the pod-like cabin located on the platform. As the train enters the station, the tracks dip, and the train passes beneath the connector cabin, allowing it to lock onto the roof. While the train speeds ahead, passengers descend stairs into the main compartment. The cabin then slips to the back of the train where passengers wanting to exit fill the empty roof-top cabin. At the next station, it slips smoothly off the roof and comes to a stop on the platform, while simultaneously a new cabin locks onto the front of the train. By using these connector cabins, the train never stops.

It would appear that the designer, Jianjun Chen, may have overlooked the needs of those passengers who are feeble or frail, disabled or elderly. The able-bodied, however, should enjoy the rooftop ride and have no problem with the stairs to the roof or with working their way from the front of the train to the back in order to exit. Perhaps these flaws will be addressed; nevertheless, it offers one critical advantage for those living at warp speed in the 21st century—no wasted time. The inventors explain that each stop takes approximately 5 minutes and with 30 stops between Beijing and Guangzhou, those stops would add 2 hours and 30 minutes to the travel time. Furthermore, coming to a complete stop and then accelerating to full speed over and over again uses far more energy than a train that is in constant motion. If all the kinks can be worked out, this type of train travel could make a lot of sense.

See it on YouTube: www.youtube.com/watch?v=IcIG2MCJwEY





A G R O W I N G F A S H I O N T R E N D

The good wool suit, the proper dress for school conferences, the Easter hat that goes to church once a year; these are mostly relics of the past. Today's fashions change so quickly that clothes are hardly worn and rarely loved. Barely worn clothes sit in heaps in warehouses across the country. Our disposable wardrobes consume all sorts of resources, including water, chemicals, metals, energy, and even cropland.

Suzanne Lee, a senior research fellow at a prestigious London arts school, is working on an alternative approach to manufacturing clothes. By combining science and art, Lee is growing clothes in vats of sugary green tea. This new enterprise, dubbed Bio-Couture, owes its existence to the throw-away wardrobes that pushed the fashion industry to seek cheap, biodegradable textiles. Working side by side to produce biomaterials suitable for clothing is an unusual team of professionals, including a chemical engineer, synthetic biologist, material scientist, and fashion designer.

The process begins by introducing cellulosic bacteria to a mixture of sweet tea and yeast. Cellulose-spinning bacteria do most of the work, growing fibers that can be dried into sheets. Depending upon the combination of ingredients, the biomaterial can be tough like leather for a Bomber jacket or delicate like the fabric in a summer blouse. The resulting material can be dyed and printed with a variety of colors, but it responds particularly well to dyes made from blueberries and cherries, turmeric, and curry powder. The designer can cut and sew these bio-materials much like any other textile (featured above); however, it can also produce seamless clothing. While still wet, the material can be draped over a body form to dry in the shape of a dress or jacket.

There is one drawback to Bio-Couture that could keep it from overtaking Target in the disposable wardrobe market. It takes two to four weeks to grow a garment, and true fashionistas might balk at such slow-working bacteria. On the other hand, if fashion trends change suddenly, the entire wardrobe can be tossed in the garbage disposal or onto the compost pile.



For more information visit: www.biocouture.co.uk

EMINENT DOMAIN & CONSERVATION EASEMENTS COLLIDE

In 1993, more than thirteen thousand cubic feet of water per second raced down the San Pedro Valley, washing away farms, drowning livestock, and destroying bridges. Like most of God's acts, it set in motion a chain of events that left people scratching their heads many years later. In our particular case, it began a convoluted tale that pits local authority against the Feds, challenges notions about the nature of eminent domain, and raises questions about what legitimately constitutes activity in the "public interest."

The '93 flood destroyed a bridge north of our ranch and moved Pinal County to express interest in a ford across the San Pedro River on our property in southern Arizona. An agreement was reached in which a revocable Temporary Highway Easement would turn our driveway into public access until the county could rebuild the bridge. It never did. In 1996 our family sold a conservation easement on 215 acres of riparian forest to the Nature Conservancy. The easement included this low-use roadway. In typical fashion, the Nature Conservancy transferred the easement to the Bureau of Land Management (BLM), which inherited the responsibility of protecting the conservation values on this property. Disturbing as it is to many of us in the ranching world to see private rights transferred to the federal government, in this particular case it saved our bacon. Ahem—beef.

After years of destructive traffic on this roadway, we legally voided the temporary highway easement. What was once conservation land with a previously existing highway easement now reverted to private property encumbered by a conservation easement. To clarify this situation, I moved tractor-loads of boulders across the roadway to keep traffic out. This was good for us since we could now protect our private land from the increasing onslaught of beer parties, drug trafficking, and livestock shooting. It was also good for the BLM since the conservation easement prohibits motorized traffic.

Pinal County, however, had other ideas. After receiving a temporary injunction against us and bulldozing our barrier, a movement developed within the Board of Supervisors to attempt an eminent domain condemnation to create a permanent public road. If it were any other entity holding the conservation easement (say, a local land trust), the issue would have been moot: a conservation easement cannot, as one judge put it, "gut the power of the state" to condemn land under eminent domain and Pinal County's condemna-

tion would have proceeded without fanfare. However, local governments cannot condemn federal property and a federal "interest" such as the BLM's is construed by the courts to be federal property. The BLM has stated its intention to uphold its interest through federal litigation if necessary.

After three and a half years of litigation and debilitating attorney's fees, we settled with Pinal County through court-ordered arbitration. Despite our objections, they offered to pay \$90,000 for our "rights," (whatever they may be) on the roadway in question. We ruefully accepted, being sure to clarify that the BLM was likely to close the road to vehicles anyway, putting all of the county's investment in jeopardy.

Pinal County had blundered in its unfortunate conclusion that this roadway constituted a public interest. This determination stemmed from a single county supervisor who happened to live near the proposed crossing and had a personal desire to keep it open for his own convenience and for the recreational pursuits of local constituents. Since he did not recuse himself from the proceedings (as is generally accepted practice), the rest of the Board rubber-stamped his proposal as being an issue within his district purview. As one editor who covered the fallout from this issue put it, Pinal County is "a Pulitzer waiting to happen."

The case is still unresolved. If the BLM upholds the terms of the conservation easement and excludes vehicle traffic, Pinal County may challenge it in federal court. If the BLM does *not* exclude vehicle traffic, we may very well challenge them in court for abrogating their conservation duties. Either way, we hope that this case will establish clear precedent in conservation case law.

At the end of the day, the challenges we face against our conservation easement may be an insignificant twist in the larger narrative of conservation activity. The themes and tensions it exposes, however, are important to bear in mind as this increasingly popular tool gains momentum. Since nearly all conservation easements occur on individually owned private property, it's worthwhile to broadcast some of the complexities and pitfalls in what might otherwise seem a neat, simple, and socially advantageous legal tool.

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