

PERC



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# GETTING AROUND THE "TAKINGS" PROBLEM?

by

*Gregg Easterbrook*

3



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## COMMON-LAW PROTECTION

Stopping pollution the old-fashioned way.

by  
*Roger E. Meiners  
and Bruce Yandle*

5

## LIGHT-TRUCK LESSONS

Guess why we have so many utility vehicles.

by  
*Daniel K. Benjamin*

12

## DISPUTES AND DISCUSSIONS

Readers challenge solar energy, "market mechanisms," etc.

Letters from  
*Fred Smith,  
Andy Stahl, et al.*

16

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*PERC's* views differ from those of many environmental organizations. In particular, we do not see government as an automatic "way out" of problems such as pollution and species extinction. While regulation is sometimes necessary, we believe that voluntary activities—including markets—often achieve environmental objectives more effectively.

The source of our views is, primarily, economics. Economic principles, we have found, can explain the causes of many environmental problems and offer guidelines for their solution. While most economists endorse the same principles as we do, few have applied them rigorously to environmental issues.

With *PERC Reports*, our goal is to offer discussion of current issues. We include our own views, but also introduce others. We believe that if a variety of viewpoints are aired, the best ideas will prevail, and all will learn from the discussion.

We welcome your comments.

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# GETTING AROUND THE “TAKINGS” PROBLEM?

By Gregg Easterbrook

It's been a terrific deal for the bald eagle and peregrine falcon, but not many members of genus *Homo* are satisfied with the Endangered Species Act. The law has protected most of the species whose extinction it set out to prevent. But it has generated a fierce backlash from landowners, who dispute the way the ESA sometimes forces them to set aside private property for use as animal habitat—giving rise to the congressional “takings” controversy. There's also the problem of job losses in logging and a few other industries. Developers never know when a project will grind to a halt over the discovery of some previously uncataloged beetle. Environmentalists, for their part, aren't happy with the favors under the law that the well-connected sometimes win. As a result, all attempts to reform or even renew the statute have collapsed amid a bitter debate, even though the law is long overdue for reauthorization.

This year, the ESA is once again on the legislative calendar, and deadlock is likely. But there is a possible solution that would get around the “takings” problem, allow economic growth, and still protect land and species—perhaps more effectively than the current law does. Congress should simply require that, for every new acre of land converted into development, one acre of land elsewhere must be purchased and dedicated to conservation of habitat. The land

*For every new acre  
of developed land, one acre of  
land should be dedicated  
to conservation.*



purchases would be financed by a per-acre fee charged to all building on previously undeveloped land. That means *all* new development, regardless of whether endangered species are directly affected. The fee would be assessed automatically in conjunction with building permits, obviating the need for complicated lawsuits and impact studies. In return, developers would be freed from most current ESA strictures. The utopian goal of protecting all species everywhere would be dropped from the act, though the government would retain emergency authority for a few rare cases. Call it the build-and-save plan.

Build-and-save grows out of the idea known as “habitat conservation” which has already shown promise in pilot programs in places like Austin, Texas, and coastal Southern California. A recent study led by Peter Kareiva of the University of Washington concluded that most such plans are scientifically sound. Over the last five years, Interior Secretary Bruce Babbitt has authorized roughly 200 habitat conservation plans, making sensible tradeoffs in which developers are granted security against future ESA lawsuits in return for funding the purchase of blocks of land for habitat conservation.

Last month, under pressure from orthodox environmentalists, Babbitt temporarily suspended approving the plans. But it's time for environmentalists to stop

## THE “TAKINGS” PROBLEM

viewing all development as evil and to think creatively about using market incentives to achieve species preservation. Even if you accept, as you should, that biodiversity protection is an important goal, it's hard not to recognize that the ESA employs a cumbersome, species-by-species litigation approach. Some areas of habitat can be plowed and paved willy-nilly if they don't happen to possess any rare creatures. In other areas, even reasonable economic activity comes to a dead stop over glacial lawsuits regarding the finer points of taxonomy.

If build-and-save were adopted, not only would there be an end to tedious litigation over what constitutes a moth subspecies, but the percentage of the United States that is placed in conservation status would skyrocket. Under build-and-save, the portion of national territory used as parks, forests, and sanctuaries would grow at the same rate as the developed portion of the country. For the first time, there would be a consistent source of funds to buy up land for new conservation areas. And since land would be acquired through voluntary purchases, not forced federal takeovers, the “takings” issue would basically wither away.

Indeed, money from the build-and-save fund could be used to negotiate voluntary buyouts of land now locked in “takings” litigation, rescuing frustrated landholders who can neither use their property nor find any buyer who wants acres encumbered by ESA restrictions. Free-market bonus: A share of the build-and-save revenues could be used to establish privately administered nature preserves. These projects (owned by and accessible to the public, but managed by private firms or nonprofit organizations) would enable us to test whether the private sector can manage wildlife-preservation projects better than the government does. In the process, something would be created that the present system lacks: a private economic interest group with a stake in lobbying for land conservation.

In short, it's the perfect marriage of the free market and environmentalism. And the costs should be modest. Over the last decade, about 1.5 million new acres per year were developed in the United States. Thus, a build-and-save charge of \$1,000 per acre would generate \$1.5 billion annually, almost five times

as much as the \$328 million that President Clinton's fiscal 1999 budget proposal allots to land preservation. (Of course, once build-and-save went into effect, federal appropriations for land preservation would no longer be needed.)

As it happens, \$1,000 per acre is a pretty good estimate of what it would cost to buy a new acre of “wild” land. Such property generally costs less than prime development land. Duke Power, based in Charlotte, North Carolina, recently sold a 32,000-acre tract in the Jocassee Gorges, a glorious section of the Blue Ridge Mountains, to the state of South Carolina for conversion into preservation land at a price of \$656 an acre. A 50,000-acre block of land in the Everglades was recently sold for preservation at \$2,670 per acre, a relatively high figure because the land had agricultural value.

True, \$1,000 per acre sounds like a lot, but it will almost always work out to less than one percent of new construction costs. (And the charge could be capped to assure that build-and-save fees never exceeded one percent of the total cost of new development.) For a typical new home on a third-of-an-acre lot, the additional cost from build-and-save would be \$300, or a mere 0.2 percent of the price of a typical new detached home. As for commercial real estate, if build-and-save had applied to the 78-acre,

\$625 million Mall of America near Minneapolis, developers would have paid \$78,000 into the preservation fund—0.01 percent of the project's cost. Disney's \$2.5 billion, 10,000-acre Celebration, Florida, development would have been charged \$10 million—a mere 0.4 percent of the project's price tag.

Of course, everyone wants the lowest possible price for new homes, prepackaged theme towns, or any other kind of construction. But most home buyers probably would not object to paying a few hundred dollars extra if they knew the money was being used for land conservation. Participating in build-and-save would even make buyers of new homes feel less guilty about turning over fresh soil for their dwellings, since for every square foot of land they consumed, an equal amount would be preserved elsewhere. Commercial developers would probably prefer a predictable preservation fee to the roulette wheel of ESA litigation. The beauty of this plan is that it harmonizes the interests of developers and preservationists. Anti-growth forces might even reevaluate their positions once they know

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*It's the perfect marriage  
of the free market  
and environmentalism.*

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that the more the country is developed, the more funds flow into land preservation.

Since our 2.3 billion-acre nation contains hundreds of millions of acres of undeveloped habitat, the build-and-save plan could operate for many generations before there would be any worry of running out of land. Decisions about where to invest land-conservation funds would be made by a new organization to be modeled on the Nature Conservancy, the highly admired private organization that already does on a local scale what the build-and-save plan contemplates on a national scale.

Future generations will judge us harshly if we con-

tinue to consume land for our needs without setting aside equal amounts for biodiversity and for our descendants. The build-and-save plan would make habitat protection and conservation automatic features of the U.S. economy. Developers could even boast of how their projects were helping to preserve nature, rather than having to apologize for the urge to build.

*Gregg Easterbrook is a contributing editor at The Atlantic Monthly and at U.S. News & World Report. This article, originally published in the March 2, 1998, New Republic, is reprinted by permission. © Gregg Easterbrook. He is author of A Moment on the Earth (Viking) and Beside Still Waters (William Morrow).*

## RESPONSE

# NOT THE FREE MARKET

*By Jane S. Shaw and Richard L. Stroup*

Gregg Easterbrook is a prominent mainstream journalist who looks objectively at environmental issues. Because he is open-minded and because he believes that he is proposing a “perfect marriage of the free market and environmentalism,” this issue of *PERC Reports* recounts his Endangered Species Act proposal. However, we do not see this as free market environmentalism.

We heartily agree with Easterbrook’s claim that the Endangered Species Act has “generated a fierce backlash from landowners.” However, we disagree that the ESA is protecting species very well. Part of the backlash by landowners involves fine-tuning land management to keep out listed species before the government finds them on the owner’s land. By spurring such action, the ESA harms species across the country, even as it helps protect species in a few locations through active intervention.

The key problem with the act, as Easterbrook points out, is that it forces some landowners to set aside habitat for endangered animals, while other, luckier landowners (who don’t have endangered species on their property) can proceed as usual. Easterbrook recommends a simple plan to cope with this unjust imposition of costs on some landowners: Congress should

charge all developers—not just those who happen to have listed species on their property—a \$1000-an-acre fee paid in connection with building permits.

To us, the thought of giving the federal government \$1000 for every acre of land that is developed (an estimated \$1.5 billion per year, says Easterbrook) is appalling. However, we should distinguish between what is good about the idea and what is bad.

What is good is that Easterbrook recognizes the unfairness of the current act. Some landowners can’t build homes, cut down trees, or even plow their ground because the Fish and Wildlife Service thinks that their land may be habitat for an endangered species. This is clearly a burden that is placed unequally. Another good thing about Easterbrook’s plan is that it removes the incentive for an owner to get rid of listed species.

What is bad is that Easterbrook does not recommend respect for property rights. Rather, he is offering a plan that would allow landowners to buy out of some land regulations. Any landowner, by paying \$1000 per acre, could win control of the land that he or she “owns.” As it is, ESA regulations in effect allow the U.S. Fish and Wildlife Service to control any land in the nation that presumably helps a listed species.

## NOT THE FREE MARKET

Easterbrook's plan allows landowners to buy freedom from these regulations. It also puts the Fish and Wildlife Service on a budget, encouraging it to set priorities and find cost-effective habitat plans. An improvement? Yes. But free market it is not.

A true free market involves individual choice of both goals and means, with full personal responsibility for the outcomes. Personal responsibility means that you keep the gains and pay the losses that stem from your actions. The "build-and-save" idea seriously compromises this system of responsibility.

The plan might be legitimate if it replaced taking from the few with a general tax on the many. But Easterbrook still proposes that all the cost be borne by landowners who develop their land and those who buy it. He would simply spread the cost among a larger number of developments. Indeed, by raising the costs of development, the plan provides a windfall for owners of already-developed land.

But why should those who want to build be required to carry a burden that all society should carry—if all society truly benefits from protection of these species?

Furthermore, the proposal leaves in bureaucrats' hands most of the decisions about protecting species (which species should have priority? which populations? what level of protection?) A true free market solution would leave these decisions in the hands of individuals and voluntary associations.

And political experience suggests that this money, collected in the name of preservation, would quite likely be spent on something entirely different. Congress collects money that it supposedly holds in funds for Social Security, highway repair, airport construction, and park acquisition, but, as everyone knows, Congress actually spends these funds on whatever the political winds are blowing its way at the time.

Easterbrook believes that his plan would do more for endangered species than a voluntary market would. But is this true? Without strong and continuous supporters, no political solution yields much fruit. Political solutions last as long as there are strong and effective supporters pounding at politicians' doors and keeping their concerns before the public. These same supporters might be more successful in the private sector.

A historical example sheds some light on this question. We know of one government mission that

was totally abandoned. In the early 1800s, some states still had an established religion (the U.S. Constitution forbade a national religion but the states were free to have a state church). A great debate ensued in such states as Massachusetts and Connecticut. Should the state church (the Congregational Church in those two states) be "disestablished"? People feared that without a subsidy, churches would fade away.

Government support was removed. And studies show that religion did not fade but flourished.<sup>1</sup> As preachers had to look to their own congregations for funding, rather than to the legislature, the number of preachers grew, church attendance rose, and total church budgets increased in both states. Religious diversity increased greatly, too. To this day, religious faith in the U.S. is much stronger than in the many industrial nations in which taxpayers subsidize state religions.

Voluntary churches, it appears, are quite different from government-supported ones. Forced to support themselves, they tap the springs of faith, concern, and enthusiasm. Those that do not, disappear, making room for others. In a similar way, protection of species is a different good when it is provided privately than when provided by government. With a program like Easterbrook's, we can expect—at best—to see bureaucratic dullness and inertia, and—at worst—political dissension and disagreement.

Instead of political fights, we at PERC want private individuals and associations to protect habitat and species in the

ways they know best. We want Nature Conservancy preserves, Audubon Society refuges, local land trusts, and voluntary groups that put up bluebird and purple martin nesting boxes. Let's not turn them over to a federal bureaucracy.

The Endangered Species Act penalizes landowners for having endangered species on their property. It discourages them from preserving habitat for listed wildlife. Let's solve that problem by removing the act's severe penalties for modifying habitat. If we do that, we will see the environmental faithful pursue their varied missions with enthusiasm and dedication.

### Note

1. See Kelly Olds, "Privatizing the Church: Disestablishment in Connecticut and Massachusetts." *Journal of Political Economy* 1994, Vol. 102, No. 2, p. 277—97.

*Jane S. Shaw and Richard L. Stroup are Senior Associates of PERC.*

*Why should those who want to build be required to carry a burden that supposedly benefits all society?*

# CURBING POLLUTION— CASE-BY-CASE

By Roger E. Meiners and Bruce Yandle

Unless you are well into middle age or were a precocious student, you probably have little memory of the United States without the Environmental Protection Agency and the host of federal statutes it implements. You may not be aware of the long history of environmental controls through common-law protections. (Common law is the term we use for the legal rules and traditions that have been developed over time through court decisions.)

In the past, people who allowed something noxious to escape their control and invade the property of others could be held accountable through legal actions for trespass and nuisance. This protection was extended to water quality through riparian rights, which allow water users the right to the use and enjoyment of water. The following cases illustrate common-law protection of surface water, groundwater, and air.

In the late nineteenth century, the Carmichael family owned a 45-acre farm in Texas, with a stream running through it, that bordered on the state of Arkansas. The city of Texarkana, Arkansas, built a sewage system and connected numerous residences and businesses to it. The sewage collected by the city system was deposited in front of the Carmichaels' homestead, about eight feet from the state line, on the Arkansas side.<sup>1</sup> The Carmichaels sued the city in federal court in Arkansas.

The court found that the cesspool was a "great nuisance" that polluted the stream on the Carmichaels' property, "depositing the foul and offensive matter . . . in the bed of said creek on plaintiffs' land and homestead continuously. . . ." The court said



that this cesspool deprived the family of the "use and benefit of said creek running through their land and premises in a pure and natural state as it was before the creation of said cesspool. . . ."<sup>2</sup>

The claims for damages were awarded, as was the plaintiffs' suit for an injunction against the cesspool. The court cited a leading text on the law of torts:

If a riparian proprietor has a right to enjoy a river so far unpolluted that fish can live in it

and cattle drink of it and the town council of a neighboring borough, professing to act under statutory powers, pour their house drainage and the filth from water-closets into the river in such quantities that the water becomes corrupt and stinks, and fish will no longer live in it, nor cattle drink it, the court will grant an injunction to prevent the continued defilement of the stream, and to relieve the riparian proprietor from the necessity of bringing a series of actions for the daily annoyance. In deciding the right of a single proprietor to an injunction, the court cannot take into consideration the circumstance that a vast population will suffer by reason of its interference.<sup>3</sup>

Judge Rogers noted: "I have failed to find a single well-considered case where the American courts have not granted relief under circumstances such as are alleged in this bill against the city. . . ."<sup>4</sup>

So, long before the Environmental Protection Agency came into existence, municipalities and firms knew that if they substantially polluted their neighbors' water, they could expect to be found liable. To

## CURBING POLLUTION

minimize liability, water polluters installed pollution control devices. Paper mills in Wisconsin routinely owned miles of downstream river property, knowing that otherwise they would be liable for violation of riparian rights (Davis 1971, 777–80).

Such common-law protection of water applies to all who have the right to use the water, for purposes including recreation. Those who enjoy sport fishing in England have long protected water quality through private litigation brought by angling associations.

The primary problem caused by pollution of land is groundwater pollution due to seepage from improperly disposed of wastes. Wastes that are properly contained rarely cause harm. After Congress passed the Superfund law in 1980 (the Comprehensive Environmental Response Compensation and Liability Act) to regulate the cleanup of toxic waste sites, relatively few common-law cases have occurred. However, they show how the common law might have dealt with the problem of groundwater pollution over time.<sup>5</sup>

For example, in 1981, the Illinois EPA, backed by the federal EPA, supported the right of a chemical waste landfill to remain in operation. The landfill had been built with state and federal approval, but residents of a nearby village alleged that the landfill was damaging their water supply.

The Illinois supreme court agreed.<sup>6</sup> It held that the landfill was a public and a private nuisance. The village residents were there first; their right not to have their property damaged could not be stripped in favor of a “general societal” desire for a landfill. In other words, toxic landfills are legitimate, but they must be constructed so as not to impose costs on surrounding landowners who have not agreed to the intrusion. The court issued a permanent injunction against the landfill and ordered that the toxic wastes be dug up, moved, and the land restored.

The courts’ view of the standards for groundwater contamination has evolved over the decades, as the 1982 case of *Wood v. Picillo*<sup>7</sup> illustrates. Neighboring property owners sued a farmer who maintained a hazardous waste dump on his property. They claimed that the dump emitted noxious fumes and polluted

groundwater. The Rhode Island supreme court agreed. In doing so it overturned a 1934 decision that would have supported the defendant’s position. The 1934 decision was based on the state of science at that time, when knowledge about the course of groundwater was, as the court stated in 1982, “indefinite and obscure.” Since 1934, the court said:

the science of groundwater hydrology as well as societal concern for environmental protection has developed dramatically. As a matter of scientific fact the courses of subterranean waters are no longer obscure and mysterious. . . . We now hold that negligence is not a necessary element of a nuisance case involving contamination of public or private waters by pollutants percolating through the soil and traveling underground routes.<sup>8</sup>

This means that the common law now imposes strict liability (that is, liability even when there is no negligence) on polluters who cause damage to waters. This standard of care is consistent with old common-

law tort rules imposing strict liability in case of hazardous materials, rules recorded in a famous 1868 British case, *Rylands v. Fletcher*.<sup>9</sup> This case is often cited for restating the ancient proposition, “So use your property as not to injure your neighbor’s property.”

The courts have long recognized common-law liability for air pollution when liability can be assigned to a polluter causing harm. An early case was *Georgia v. Tennessee Copper Co.*<sup>10</sup>

The state of Georgia, on behalf of its citizens, sued two

companies that operated copper smelters in Tennessee near the Georgia border. Justice Holmes noted that a public nuisance had been created because the “sulphurous fumes cause and threaten damage on so considerable a scale to the forests and vegetable life, if not to health, within [several counties in Georgia]. . . .”<sup>11</sup> Defendants argued that they had recently constructed new facilities that reduced the scope of the problem, but the Supreme Court held for Georgia. The Court gave the companies a reasonable time to build more emission-control equipment, but held that if such equipment did not reduce emissions enough to protect plant life in Georgia, the state could ask the court for an injunction to shut down the smelters.

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In 1915 the parties returned to the Supreme Court.<sup>12</sup> The companies showed that their new, expensive equipment cut emissions by more than half. Georgia argued that this was not enough and demanded that the smelters be closed. The chief justice appointed a scientist from Vanderbilt University to spend six months, at company expense, studying the emissions and the likely effect of new controls. In the meantime, the Court ordered the companies to cut back production to reduce emissions further. Based on the evidence presented by the scientist, the companies would either be allowed to continue operation with more emission-control equipment in place, or, if that could not reduce emissions sufficiently, would have to shut down. Finally, after following the guidance of the Vanderbilt professor, the firm satisfied the plaintiffs, and the Court ended its oversight of the case.

The common-law approach was not perfect. The cases reported here represent the majority view, but there was a minority view, also. Some courts would rule for polluters, holding that the economic benefit of a factory that employed many people outweighed the damage to a few property holders. Some courts held that pollution was just a fact of modern life and necessary for progress to occur. The courts were not always consistent in their decisions.

There were other problems. For one, legal action is always costly. Second, multiple polluters that each inflict low levels of damage are unlikely to be held liable—especially when the damage is shared by many. For that reason, problems with air pollution caused by automobiles cannot be handled effectively through common-law courts.

Injuries and harms that come after long gestation periods present another challenge. While parties who can show evidence of injury or imminent harm may have a common-law cause of action, efforts to obtain injunctions for speculative harms such as future cancer are not generally successful.

However, we cannot know how the law might have evolved had it not been pushed to one side by regulation. Environmental courts—ordinary courts assisted by special masters trained in environmental science—and other arrangements might well have

evolved to satisfy the needs of people concerned about their environmental rights.

In our view, it is time to consider a return to the regime that served us well in the past and that has shown signs of evolving as knowledge and environmental concerns changed. The common law provides harsh penalties against firms that disregard the rights of citizens by exposing them to harms. Indeed, when real harm is inflicted, citizens get far better relief through common-law suits than they do from appeals to the Environmental Protection Agency. Eventually, we believe that citizens will recognize that the common law, bolstered by local regulation, can protect the environment more effectively and fairly than can congressional statutes and bureaucratic regulations.

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#### Notes

1. *Carmichael v. City of Texarkana*, 94 F. 561 (W.D. Ark., 1899).
2. 94 F.Supp. 561 at 562.
3. 94 F.Supp. 561 at 573.
4. 94 F.Supp. 561 at 574.
5. The story of Love Canal, the incident that led to the passage of Superfund, is poorly understood. Ultimately, the people of Love Canal were protected through a common-law suit. A more detailed discussion can be found in the longer *PERC Policy Series* (PS-13) from which this is excerpted.
6. *Village of Wilsonville v. SCA Services*, 426 N.E.2d 824 (1981).
7. 443 A.2d 1244 (1982).
8. 443 A.2d 1244 at 1249.
9. L.R. 3 H.L. 330 (1868).
10. 27 S.Ct. 618 (1907).
11. 27 S.Ct. 618 at 620.
12. *Georgia v. Tennessee Copper Co.*, 237 U.S. 474 (1915); 237 U.S. 678 (1915); and 240 U.S. 650 (1916).

*Roger E. Meiners is Professor of Law and Economics at the University of Texas at Arlington, and Bruce Yandle is Alumni Professor of Economics and Legal Studies at Clemson University. This article is excerpted from their PERC Policy Series paper, "The Common Law: How It Protects the Environment," PS-13, available from PERC for \$4 or on PERC's Web site, [www.perc.org](http://www.perc.org).*

# GREENER PASTURES

## PRIVATE INITIATIVES

By Linda E. Platts

### PALLETS TO BUTCHER-BLOCK

Deep in the South Bronx a small company is making a big impact on forest preservation, waste reduction, and furniture design. And that's only part of the story.

Every year in the United States 1.5 billion wooden pallets are used in the shipment of consumer goods. Those pallets account for nearly half of the annual domestic hardwood timber harvest. After only a few uses, the pallets are discarded, incinerated or chipped, meaning that thousands of feet of reusable oak, cherry, maple, rosewood, and mahogany are wasted.

Big City Forest is recycling nearly every scrap of this wood and making profits in the process. The company is in the unique position of not having to pay for the wood—just the opposite, in fact. Other companies are paying Big City Forest to take the unwanted pallets off their hands. Landfills often refuse to accept pallets or charge substantial fees, while Big City Forest is charging only 75 cents apiece to accept pallets dropped at its door.

David Muchnick, who heads the company, could make an easy profit by simply chipping the wood, standard practice for hundreds of pallet recyclers, yet he saw beauty in the swirling grains and rich hues of the wood. He also saw bigger profits. Chips are worth just \$30 a ton, but if the pallet wood is turned into flooring it is worth \$1,200 a ton, and as furniture it is worth \$8,000 a ton.

Butcher-block tables from Big City Forest sell for \$750 at trendy New York stores, and the company's oak flooring was used by the National Home Builders' Association in model homes built to display products with environmental benefits. The least valuable wood is reassembled into new pallets, sold for pressed-wood board, or burned in the company furnace to heat the building. Only a little sawdust ends up in the dumpster.

In just three years Muchnick has tripled his work force, tripled his work area, and provided training in wood-working skills to 200 residents of this economically depressed area. Next, he is considering franchising his business to other cities, both here and abroad, where wood pallets are plentiful.

—*The New York Times*

### OILY HAIR

An Alabama hairdresser is making oily hair his specialty. Phillip McCrory has devised a technique to clean up oil spills with hair trimmings. The technique is now being refined at the Marshall Space Flight Center in Huntsville, Alabama. The system could eventually mean quicker and less expensive cleanups.

McCrory was first inspired while watching coverage of the 1989 Exxon Valdez oil spill where he saw a rescued otter whose fur was soaked with oil. Being in the business of hair, he began to speculate that human hair might also be able to trap spilled oil.

His first experiment involved five pounds of hair from the beauty salon floor stuffed into his wife's pantyhose and floated in his son's wading pool. Tied in a ring, the pantyhose successfully trapped the motor oil McCrory poured into the water. Human hair adsorbs, rather than absorbs, oil. In other words, the oil does not bond with the hair and can easily be removed and reused.

Researchers at the flight center believe McCrory's method has potential uses for NASA and other government agencies. Preliminary tests show that McCrory's filter can adsorb a gallon of oil in two minutes, leaving a minimum of residue, and could reduce the cost of recovering oil by as much as 80 percent. Furthermore, the nylon collection bundles soaked with oil could be burned as fuel.

Tests will be completed later this year.

Meanwhile, McCrory is investigating a patent and has founded his own company, BEPS Inc. of Madison, Ala. Not only has he found a better way to clean up oil spills, but also a commercial use for tons of human hair that is tossed in the trash everyday.

—*Environmental News Network*

## RANGERS ON TOUR

While ecotourism has been touted as a way to save everything from tigers to sea turtles, it might also prove an economic boon to the financially beleaguered U.S. Forest Service.

Heritage Expeditions is part of the user-fee demonstration program that allows federal land management agencies to charge fees for recreation on public lands.

A recent tour offered in an old-growth forest in Oregon featured ancient Native American rock art and was led by a Forest Service archaeologist. The tourists paid \$1,400 each for the experience, which included, education, recreation, volunteer work restoring vandalized sites, as well as tasty meals, fine wines, crackling fires, and soft beds at a nearby inn. The profits from the tour will all stay in Oregon's Umpqua National Forest where they will be used to protect archaeological sites.

Some people object to the Forest Service getting into a for-profit venture, while others think it is exactly what needs to be done. They point out that it is an excellent use of the agency's expertise and resources, and still does not exclude others from hiking and touring in the same areas.

Plans are in the works for other tours focusing on the preservation of historic buildings and the legacy of Chinese miners. Anyone interested in a Heritage Expedition in a western state should contact Jim Keyser at the Forest Service in Portland (503-808-2644).

—*High Country News*

## ENTERTAINMENT FARMING

Family farms and ranches have found that entertainment is a cash crop that can keep them in business, even when more traditional fruit and vegetable crops cannot. Small family farms struggling to keep up with rising costs and compete with large commercial operations have turned to corn mazes, petting zoos, and hayrides.

Farmers who began with pick-your-own-apples

and tap-your-own-maple-tree have proved to be inventive entrepreneurs. They have expanded their offerings to include strawberry stomps, pie markets, hay bale tunnels, country western bands playing from the beds of old pickups, tricycle courses, and petting corrals with coin-operated food dispensers. Most farms also operate snack bars, souvenir stands, and green markets selling their produce.

City dwellers and suburbanites have flocked to these farms in huge numbers, eager for a taste of rural life and a chance to show the kids a real pig. They shell out \$6 for the maze and \$10 for the hayride, and sometimes an entrance fee on top of that.

Even schools of agriculture have responded to the trend by adding courses in marketing and entrepreneurship. Admittedly, there are tradeoffs to hosting hordes of people on what was once peaceful pasture land, but for a few months a year most farmers are willing to make the compromise. One New Jersey farmer who has 400,000 paying visitors a year admitted that the proceeds had sent his children to private schools and then to Princeton.

—*The New York Times*

## CORPORATE APPLESEEDS

American companies have discovered that planting and preserving trees can reap a wealth of benefits. It can help the environment, it can boost their corporate image, and ultimately it could help the bottom line.

American Electric Power is preserving trees by purchasing a chunk of Bolivian jungle which it plans to donate to an adjoining national park. The trees provide valuable wildlife habitat, clean the air and water, beautify the land and provide recreational opportunities. And, because the Kyoto Protocol calls for a reduction in carbon dioxide emissions, the trees could become valuable CO<sub>2</sub> credits. If the federal government establishes an emissions trading program, AEP would be able to sell its credits to companies that must reduce their emissions.

Mobil Corp. has also joined the Johnny Appleseed effort. In partnership with American Forests, which is leading the Global Releaf 2000 program, the company has planted tens of thousands of trees in Virginia, Florida, and Wisconsin this year.

Some conservationists remain skeptical of corporate efforts, but others such as the Nature Conservancy welcome the planting and preservation regardless of motivation.

—*USA Today*

WHERE RESEARCH AND  
POLICY MEET

# TANGENTS

By Daniel K. Benjamin

**economist**, n. a scoundrel whose faulty vision sees things as they are, not as they ought to be.  
—after Ambrose Bierce

Over the last two decades, Americans' driving experience has been transformed by the proliferation of light trucks—vans, minivans, pickup trucks, and sport utility vehicles. Recently, news reports have castigated these trucks—which weigh about 1,000 pounds more than cars—as a menace on the nation's highways, especially in car-truck collisions.

What few realize is that, according to recent research, more than half of the increased market share of light trucks has been induced by government regulation—specifically, the federal law mandating fuel economy standards for new vehicles.<sup>1</sup>

For the past 20 years, the Corporate Average Fuel Economy Standard (CAFE) has required fleets of passenger vehicles sold in the U.S. to meet specific miles-per-gallon standards. The standard for cars, established in 1978 at 18.0 mpg, is now 27.5 mpg. The standard for light trucks, initially set in 1980 at 17.5 mpg, is currently 20.6 mpg. Hence, from the beginning, the CAFE standards were more stringent for cars than for light trucks, and they have been raised more sharply (up 52.8 percent for cars, versus up 17.1 percent for light trucks).

Manufacturers may meet these standards by reducing vehicle weights or by increasing the fuel efficiency of vehicles of a given weight. In practice, they have done both, yielding less powerful, lighter cars. Unfortunately, occupants of lighter cars are more likely to be killed or seriously injured when they are involved in crashes. Nearly a decade ago,

Robert Crandall and John Graham estimated that the CAFE-induced decline in new car weights was associated with about a 20 percent increase in occupant fatalities.<sup>2</sup>

Apparently, consumers are not happy with the lighter and less powerful cars. Indeed, according to economist Paul E. Godek, CAFE has induced consumers to move away from small cars and into larger, higher-powered vans, pickups, and sport utility vehicles. Between 1975 and 1995, the light-truck share of passenger vehicles rose to 41.5 percent from 20.9 percent. Godek estimates that without CAFE the light truck share would only have been 29.2 percent. Hence, about three-fifths of the rise in the light-truck market share has been induced by the CAFE standards.

The original goal of CAFE was (in part) to induce substitution from large cars to small ones. But the rise of the light truck has, to some extent, frustrated this intent. Two consequences have resulted. First, light trucks are less fuel-efficient than passenger cars, so fuel economy has risen less than if light-truck substitution had not been possible. Godek provides no estimates of the size of this effect, but my back-of-the-envelope calculations suggest it is fairly modest—reducing overall fuel economy by about 0.8 mpg.

More important are the consequences in the arena of passenger vehicle safety. Despite their name, light trucks are heavier than cars. Because there are more light trucks on the road with CAFE-lightened cars, drivers of those cars are now at increased risk of

■  
*More than half of the increased market share of light trucks stems from government regulation.*

death in crashes involving light trucks. This is the effect that made the headlines some weeks ago.

But there is a second effect. The occupants of light trucks are protected by the very mass that is hazardous to the occupants of cars. And this mass not only protects light-truck occupants from cars, it protects them from heavy trucks, trees, wildlife, and so on. This, in turn, tends to cut accident fatalities. Crandall and Graham's earlier work on the impact of vehicle weight on fatality rates suggests that the substitution toward light trucks may actually, on balance, have reduced overall fatalities—but this is by no means a settled issue.

There remains one mystery in the CAFE story, which is why the law was originally enacted. If the real objective of CAFE was fuel economy (and thus, in part, environmental protection), this could have been accomplished much more cheaply with a direct tax on gasoline. Godek argues that the structure of the law suggests a different congressional motive. CAFE treats domestic and imported cars separately. Manufacturers must meet the standard for both fleets, so they can't simply import fuel-efficient cars to bring up the average mpg of their domestic cars. Instead, they must

make more small cars here in America. Thus, CAFE has protected the jobs of domestic auto workers—giving us one more example of a law supposedly enacted to achieve a high-minded goal that instead serves chiefly to insulate a U.S. industry from the rigors of competition.

So, the next time a minivan takes your parking place, or an oversized four-wheeler tailgates you, remember this: Their owners are just trying to prevent Congress from killing them to save jobs in Detroit.

#### Notes

1. See Paul E. Godek, "The Regulation of Fuel Economy and the Demand for 'Light Trucks'." *Journal of Law & Economics*, October 1997, pp. 495–509.

2. See Robert W. Crandall and John D. Graham, "The Effect of Fuel Economy Standards on Automobile Safety." *Journal of Law & Economics*, April 1989, pp. 97–118.

*Daniel K. Benjamin is a PERC Senior Associate and Professor of Economics at Clemson University. "Tangents" investigates policy implications of recent academic research.*

what's new

## PERC UPDATE

**Orri Vigfússon** received PERC's 1998 Enviro-Capitalist Award in April for his successful efforts to protect the Atlantic salmon using the tools of the marketplace. PERC Senior Associate **Jane Shaw** presented the award at the annual meeting of the Philadelphia Society in Oak Brook, Illinois. Vigfússon is featured in *Enviro-Capitalists: Doing Good While Doing Well*, by **Terry L. Anderson** and **Donald R. Leal**.

Vigfússon, who lives in Reykjavík, Iceland, is chairman of the North Atlantic Salmon Fund. Through his efforts, the fund has purchased—and retired—commercial salmon netting rights off Greenland and the Faroe Islands. More than a million salmon have returned to their homes to spawn as a result of these purchases. The "market worked" for Vigfússon

because netting rights around Iceland, Greenland, and the Faroe Islands are privately owned. They can be purchased and retired. However, in many parts of the world, including the seacoasts of England and Ireland, netting rights are not private. There, reducing salmon catches is a political problem. Salmon has largely disappeared from New England for the same reason. While in the Chicago area, Vigfússon presented a talk about his work.

PERC was well represented at the meeting of the Philadelphia Society. This organization, founded in 1964, is composed of individuals who believe in lim-

## UPDATE

ited government, as envisioned by the founders of the United States. **Terry Anderson**, **P. J. Hill**, **Richard Stroup**, and **Bruce Yandle** all gave presentations during the meeting, which featured environmental issues. Former fellow **Jo Kwong** also spoke.



**Don Leal** lectures this month on financing public recreation at a conference sponsored by the Natural Resources Law Center at the University of Colorado Law School. Soon after, he will testify in Washington, D.C., at a hearing of the House Agriculture Committee on forest management. In April, he addressed the Timber Counties School Coalition in Reno, Nevada.



**Bruce Yandle** recently conferred with Ruhrverband officials in Essen, Germany, on the use of economic incentives and property rights in river basin management. He also lectured at the University of Groningen and before the European Law & Economics Society at the University of Maastricht, both in the Netherlands. **Roger Meiners** is in Jesolo, Italy, teaching in a summer program for the Consortium for International Business Studies. In May, **Randy Simmons** lectured on free market environmentalism at the Chinese Academy of Social Sciences in Beijing. **Pan Jiahua**, who translated *Free Market Environmentalism* into Mandarin Chinese, organized the meeting. And **P. J. Hill** took students on a trip to Prague, the Czech Republic, where he met with **Jiri Schwarz**, director of the Liberal Institute. This free-market think tank is just beginning a major environmental program, and its members are eager to learn about markets.



**Terry Anderson** has returned from his first visit as a Senior Fellow at the Hoover Institution. While there, he taught a class in free market environmentalism at Stanford and gave several additional lectures in California, including one at the Pacific Research Institute.



PERC sponsored a Capitol Hill briefing on “environmental mis-education” in May in conjunction with the Center for the New West and the Competitive Enterprise Institute. **Michael Sanera** of the Center

for the New West and **Kathryn Ratté**, a teacher who has worked closely with PERC, commented on the problems of environmental education today. Their presentation was one in a series of congressional briefings sponsored by the John M. Olin Foundation and directed by PERC Senior Associate **Randy Simmons**.

**Jane Shaw**, coauthor with Michael Sanera of *Facts, Not Fear*, has also been spreading the word on environmental education. Recently, she spoke before the Nebraska Farm Bureau and the Alabama Eagle Forum. At the annual meeting of the Association for Private Enterprise Education, Shaw and **Richard Stroup** showed how the Endangered Species Act can be used to teach about economics and the environment. At the same meeting in Dallas, Kathryn Ratté introduced *EcoDetectives* and a new water management curriculum she has developed for PERC.



**Richard Stroup** has spoken about market approaches to environmental protection at a variety of universities this year. They include Williams College, Trinity College, Howard Payne University in Brownwood, Texas, and Case Western Reserve, where Stroup gave the Howard T. McMyler Memorial Lecture.



We have five PERC fellows this summer. **Robert McBride** will enter his senior year at St. Vincent College in Pennsylvania, where he is studying population biology and economics. While at PERC, he is conducting a cost-benefit analysis of the pharmaceutical potential of the South American rain forests. **John Charles Bradbury** is a Ph.D. student in economics at George Mason University and a research fellow at the James Buchanan Center for Political Economy. At PERC, he is studying the role of politics in the selection of Superfund sites.

**Michelle Sachs**, a Ph.D. student at the University of Southern California, School of International Relations, is studying problems of supplying water in Israel. **Jonathan Adler**, who has been Director of Environmental Studies at the Competitive Enterprise Institute in Washington, is also a law student at George Mason University Law School. At PERC he will scrutinize the justification for federal environmental regulation under the Constitution’s commerce clause. **Timothy Terrell**, who is pursuing a Ph.D. in economics at Auburn University, will be studying “rent-seeking” and “standing to sue” issues in environmental policy.

# JOURNAL

## NOTES FROM THE EDITORS

By Jane S. Shaw & Linda E. Platts

To tell the truth, it was very quiet this spring in Bozeman. Given a vacuum of visitors, we decided to check on the whereabouts of some of the past PERC Fellows. About 60 fellows have worked at PERC over the years, so this journal entry can only mention a sampling.

PERC Fellows are usually graduate students—in law, economics, or natural resources—who spend three months at PERC researching a subject that reflects their interests and PERC's. Since 1994, they have benefited from the watchful eye and rigorous monitoring of Senior Associate **Daniel Benjamin**.

PERC has had fellows since its inception, some of them spending longer than a few months. **Dean Lueck**, now an associate professor of economics at Montana State University, remembers doing ranch work along with research in the 1980s. **Jo Kwong** spent two years with us while pursuing her University of Michigan Ph.D. in natural resource economics. She now lectures and writes on environmental issues for the Atlas Economic Research Foundation. Former fellow **Sandra Goodman**, an economic consultant in Denver, is known to *PERC Reports* readers for her writing on contingent valuation. And **Andrew Dana** is now an attorney in Bozeman, and his wife, **Susan Dana**, is mentor to PERC's legal fellows.

Around the country, former PERC Fellows are applying their expertise. **Sterling Burnett** (1995) is Director of Environmental Studies at the National Center for Policy Analysis in Dallas. **David Riggs** (1991) is an environmental economist with the Center for the American Experiment in Minneapolis. **Michael De Alessi** (1993) coordinates the Center for Private Conservation at the Competitive Enterprise Institute in Washington. **Robert Franciosi** (1993) is a research associate with the Goldwater Institute in Phoenix. Two recent fellows, **David Gerard**



and **Holly Lippke Fretwell**, are staff members at PERC.

A number of fellows are in academia. **Lata Gangadharan** (1996) is teaching economics at the University of Melbourne, Australia, as is **Andrew Herr** (1994) at St. Vincent College in Pennsylvania. **Scott Crosson** (1995) is one of a group at the University of Oregon that just received a National Science Foundation grant to use game theory to study voluntary associations. **Ian Munn** is an assistant professor of forest economics at Mississippi State.

In recent years, PERC has selected a William S. Broadbent Fellow (the fellow who wrote the best paper that academic year). The 1996-7 winner, **Joe Bial**, is completing his Ph.D. at the University of Arizona. **Edward Hubbard** (1995-6) is an attorney in Cleveland. **Marlow Green** (1994-5) is with the Reid & Priest law firm in New York City. **Wayne Safro** (1993-4) has been practicing law in Los Angeles.

PERC has contributed its share of lawyers. To mention a few: **Scott Jaunich** (1991) works for Jackson, Tufts, Cole & Black in San Jose, specializing in land use and environmental litigation, **Allison Hayward** (1993) is at the firm of Wiley, Rein & Fielding in Washington, D.C., and **Mark Urbanski** (1992) with Knauff & Craig in Rochester, New York. Other former fellows are in business—among them, **Jeff Fuller** (1995), **Michael Houser** (1995), and **Carter Kohlmeyer** (1992)—and in high-school education—**Chris Junghans** (1993). We understand that **Chris Elmendorf** (1995) is teaching about conservation in Africa.

So that's a start. Fellows, let us know more. There's talk of a Web page devoted to PERC alumni—a way for fellows, visiting scholars, and others to communicate with one another. Any thoughts about that?

# letters to the editor

## REACTIONS

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### The High Cost of Solar

Daniel K. Benjamin ("Tangents," March 1998) discusses a recent article in the *Journal of Political Economy* claiming that the cost of electricity generated from solar power will decline from current levels of about 25 cents per kwh to a "highly competitive 4-6 cents per kwh" within 30 years. This would seem to be good news for replacing fossil fuels, but, alas, even 4-6 cents per kwh will not be competitive.

Surplus electricity now available in many parts of the country for most hours of the day sells into the wholesale power market at around 2 cents per kwh, sometimes more and sometimes less. Brand new natural gas plants can generate electricity for around 3 cents per kwh in large quantities across the U.S. These costs are becoming achievable in smaller and smaller plants. Financial markets can lock in these prices for a decade or two with a slight premium to eliminate fuel price risk. So, projected solar prices 30 years from now would still not be competitive with prices from fossil fuels right now, much less 30 years from now, when electricity produced from gas is anticipated to be even lower than today because of improving technology. Environmental performance of gas technology continues to improve as well.

The 25 cent-per-kwh price for solar power today might not even be a good number. A 1997 primer published by Solarex, the nation's second largest solar firm, says that the life-cycle cost of photovoltaic-generated energy ranges from \$0.30 to \$1.00/kwh (for the electricity alone). This compares to the U.S. average residential price, which is about 8.5 cents per kwh and falling, and it includes transmission, distribution and social programs. Even with significant

future cost reductions, photovoltaic power seems likely to be cost-effective in remote locations at best.

Even if photovoltaic systems become cost-competitive on a cents-per-kwh basis, they may still not be attractive to consumers. The cost targets of 4-6 cents per kwh represent fixed costs, while the costs of most other energy sources, including natural gas, include both fixed and variable costs. Rather than finding price security, solar-energy consumers will find themselves saddled with inflexibility in an ever-changing market. They will face ongoing fixed payments for electricity at costs most often above the market price. In the face of variable energy prices, this further disadvantages solar technology.

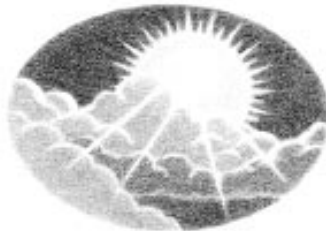
Like renewable energies, fossil fuel technologies have substantially improved. Just as reformulated gasoline continues to set a torrid pace for alternative fuels in the transportation market, improved natural gas technology has made it very difficult for renewables to penetrate the market for either price or environmental considerations. To some, this is a reason for continued subsidies and mandates. To others, it is a reason to end the ongoing subsidy experiment and let the marketplace decide.

*Thomas Tanton  
Lincoln, California*

*Mr. Tanton is a Principal Policy Advisor with the California Energy Commission but his comments do not necessarily reflect the agency's views.*

### On Free Market Environmentalism

Writing is a sobering process. Too often one finds that what one thought one said wasn't what others heard (Letters, March 1998). I'd like to try again to explain where I think that the free market





environmental movement has lost its way.

The core observation of the classical liberal tradition is not that incentives matter, not that markets are efficient, and certainly not that society should move to “perfect” markets as defined by Chicago school economists. Rather, at the core of this tradition is the idea that an institutional framework should exist that allows individuals to pursue their own dreams and goals. Classical liberals do not believe that “we” need to protect the environment. Rather, “we” must establish institutions that allow Carl Pope, Lynn Scarlett, and you and me to protect the resources that each of us individually values.

Undoubtedly, the evolution of such critical institutions of liberty will be slow. Some resources will enjoy private stewardship protection before others, but our goal should be to bring in from the cold of political management those environmental resources that have long suffered from the lack of individual care. Modest intermediate measures of the “market mechanism” sort (that is, using markets to carry out political goals) may be warranted, but if we don’t know our destination, we cannot know whether we are heading down the right road.

Consider biodiversity. To protect those species lacking property rights protection, Congress enacted the Endangered Species Act, restricted private land use, and imposed bans on consumptive use of prized species. *PERC Reports* readers are well aware of the problems entailed in such approaches. The ESA has not “saved” a single species, it is a major threat to private property rights, and it has engendered massive conflict.

To learn how we could better save species, protect property rights, and reduce conflicts, we should look at a different but analogous realm that has long been organized and managed privately. We should think about how gardens are created and how pets are protected. Some private gardeners grow roses, others, day lilies; some private pet owners love cats, others hate them. Each of us has a “plan” for what we will and will not do to protect our plants and animals, and we each face resource restraints. (None of us can spend all our money on nursery products.) The private process allows us each to pursue our goals. As a result, there are no endangered tulips, and the major threat to Persian cats is excessive shedding.

The voluntary framework of exchange is what

provides the information and the incentives that create the peaceable kingdoms of gardens and pet animals. We don’t have to know the “value” of Persian as opposed to Siamese cats. We don’t have to know what incentives will ensure the survival of such exotic breeds as the borzoi or dachshund. In fact, “we” don’t have to do anything at all—we don’t have to measure option demands or contingency value, or analyze ecosystems. In the political world (which is where so many environmental decisions are made), “we” do have to do these things, and we reap dissension and disputes and disagreements as a result. Contrast the two regimes. Voluntary exchange dissipates conflict, creates information, and expands choices. Through markets, anyone who places any value at all on any species will be able to “vote” for it and engage in tradeoffs to obtain it. These choices are made by the decisions of millions of people acting on their own preferences.

As classical liberals in environmental policy, our problem is that for many environmental goods we don’t currently have an institutional framework that allows preferences to be expressed and changes to be made. With so few classical liberals in this field, I believe that we should devote ourselves to the complex intellectual and political problems associated with making possible the evolution of environmental property rights.

We should look at questions such as, How might airsheds be owned and monitored? How best might we extend the unitization concept which has long existed in the oil and gas world to the groundwater resource? What impediments prevent common-law remedies from addressing pollution issues? Can the laws that now allow private management of operating oil rigs extend to these facilities after decommissioning, when they are used as fishing and snorkeling sites?

If we don’t look at questions such as these, we end up focusing on “efficiency,” which economists define as producing the most output from given inputs (or producing a given output from the least inputs). Certainly, the nearly \$200 billion a year spent on environmental regulatory compliance could be spent more “efficiently.” But you can’t determine efficiency without a concept of what it is you’re trying to do. And who knows whether we should spend more on reducing chlorinated hydrocarbon residues in the Hudson and less to increase spotted owl populations in

*We should devote ourselves  
to the intellectual and  
political problems associated  
with making possible  
the evolution of  
environmental property rights.*

—Fred Smith

## LETTERS

Oregon, or more on restoring wetlands in Louisiana and less on reducing sulfur dioxide emissions in Ohio? No one knows, and I venture that no one can know. Besides, there are plenty of analysts at plenty of universities, research groups and environmental organizations that spend countless hours trying to design the perfect “market mechanisms” to address all these concerns and more. The RFFs and EDFs of the world are well positioned to be efficiency experts for the regulatory state. That’s not what free market environmentalism is about.

We should no more spend time seeking to make environmental “market mechanisms” work than Hayek and Von Mises wasted on seeking to make market socialism work. One of the reasons why socialism persisted so long was that too many people sought to “make socialism work.” We shouldn’t repeat that mistake.

*Fred L. Smith, Jr.  
Competitive Enterprise Institute  
Washington, D.C.*

## California, Not Northern

Tim Fitzgerald’s article, “The Quincy Library Affair,” contains one factual error. The article claims the Quincy Library Group formed in response to a judicial decision to protect the northern spotted owl and attendant declines in federal timber sales. Not so. Mr. Fitzgerald has the wrong owl. It is the California spotted owl, not its northern cousin, that contributed to declines in Sierra logging. The declines in Sierra sales resulted from Forest Service efforts to provide sufficient habitat for the California owl, without the need of a litigation catalysis. So far, however, the Forest Service has fallen short of the mark, as reported by a recent independent scientific committee appointed by USDA.

*Andy Stahl, Executive Director  
Forest Service Employees for Environmental Ethics  
Eugene, OR*

*Editor’s Note:* Technically, you are correct. However, the 1991 litigation over the northern spotted owl spurred action to set aside habitat for the California subspecies.

## Who Killed Air Pollution?

John Blodgett (Letters, March 1998) criticizes Richard Stroup for arguing that market forces did

more to clean up air pollution in the U.S. than did the federal regulatory process. Stroup cited Paul Portney and Robert Crandall, but there are other sources for data and arguments supporting this claim.

From exhaustive empirical studies published in many professional journals, Paul MacAvoy found that while emissions declined after 1973, the declines bore the same empirical relation to GNP as they had in the 1960s. This would not have been the case if federal regulation had been responsible. Air quality improved more rapidly in the 1960s than in the 1970s.

MacAvoy is very clear about the cause of cleaner air: new, clean production technologies that were being implemented (for profit motives, though he does not stress that point) regardless of regulation. Such investments were accelerated by the energy price increases of 1974 and 1979.<sup>1</sup>

Indur Goklany, the Manager of Science and Engineering in the Office of Policy Analysis at the Interior Department, has also noted that critical emissions (such as particulates and sulfur oxides) began falling long before the EPA came into existence and concludes that much of the cleanup was voluntary.<sup>2</sup>

Goklany does give some credit to state regulation that preceded the EPA, but this generous attitude toward inherently antidemocratic (regulators are appointed, not elected) legislation is unfounded. State regulation in the 1960s was too fragmentary and easily evaded to have much effect. Goklany’s own data show that emissions per capita of most traditional pollutants in the U.S. either leveled off or began declining as early as 1920.

Blodgett carps that only particulates and sulfur oxide total emissions declined significantly before 1970, and asserts that one cannot prove a trend by this. The Goklany data show that the improving trend is, in fact, longstanding. By the way, the EPA attributes 90 percent of the benefits from the Clean Air Act to reductions in particulate emissions alone.<sup>3</sup> And total emissions of particulates declined rapidly and continuously after 1950.<sup>4</sup>

*James Rolph Edwards, Ph.D.  
Montana State University-Northern, Havre*

1. Paul MacAvoy, *Industry Regulation and Performance of the American Economy* (W. W. Norton, 1992): 96–104.

2. Indur M. Goklany, “Richer Is Cleaner: Long-Term Trends in Global Air Quality.” In *True State of the Planet*, ed. Ron Bailey (Free Press, 1996), 339–77.

3. Robert W. Crandall, Fredrick Rueter, and Wilbur A. Steger, “Clearing the Air: EPA’s Self-Assessment of Clean-Air Policy.” *Regulation*, Vol.

1996, No. 4, 35–46, at 40.

4. See Table 374 in the 1996 *Statistical Abstract of the United States*.

## More to Learn about Tigers

From Michael 't Sas-Rolfes' account and others (*PERC Policy Series PS-12*, described in March 1998 issue) it is quite apparent that the knowledge of the tiger's status is quite sketchy. There is much disagreement over how many tigers exist, with a wide range of estimates by various workers. It has been concluded that tigers historically ranged widely over much of Asia, but if estimates are shaky, how much faith can be placed in past records? And just what constitutes prime range? Some of the sites now occupied might represent last strongholds that in fact are decidedly marginal. And, just what caused the assumed drastic declines and is there agreement on this? There are those who strongly believe that a shrinking prey base constitutes a greater threat than loss of habitat or poaching. If such is the case, incentives to protect tigers would be futile.

With all the millions of dollars available from private organizations and public agencies it should be possible to hire and equip a crack team of dedicated, objective wildlife biologists to accurately identify problems and needs, and then recommend appropriate and effective remedial measures. That is, if such are still to be found. Unfortunately, the wildlife profession, just like environmental groups, has in many cases become highly politicized. Is it not logical that the cause of the plight be known before corrective measures be taken? Those responsible must turn over all the stones, get some dirt under their fingernails, and carefully put all the pieces together.

*Nathaniel R. Dickinson  
Altamont, New York*

*Mr. Dickinson is a retired wildlife biologist, formerly with the New York State Department of Environmental Conservation.*

## Write for Us, Too

We enjoyed your short item on hunting (PERC's Web site: [www.perc.org](http://www.perc.org)). Keep in mind that most of the land in the East is privately owned. You may want

to address your articles to all the United States, instead of just the western states, where government land is more common. There are 16 million acres of forestland in Alabama that aren't owned by the forest products industry. Our association supplies affordable hunting-lease liability insurance coverage to landowners and hunters for such lands. We currently help over 1250 landowners with almost 1 million acres provide recreational hunting access to approximately 20,000 hunters. Many thousands of landowners and hunters have yet to work out mutually agreeable hunting arrangements. There is no shortage of hunting land, just a lack of understanding on the part of hunters and landowners on how to get together for their mutual benefit.

*Lee Laechelt  
Alabama Forest Owners' Association, Birmingham*

## Realism, Not Misconceptions

I have just recently discovered the PERC home page and related sites and am quite fascinated. I do research on student and teacher misconceptions regarding such issues as global warming and ozone depletion. I have found (to no one's surprise) that people hold a great variety of misconceptions about these topics. I believe that these misconceptions are built up from incorrect or misleading information in the media, including Saturday morning cartoons, and are then perpetuated by elementary and middle-level science teachers who hold an incorrect understanding of the scientific data and theories currently under study by the scientific community. As an ecologist turned science educator, not a "tree hugger," I like to think of myself as a realist and find the positions of PERC favorable.

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The editors of *PERC Reports* welcome letters, especially those that further the dialogue about free market environmentalism. Published letters will be edited for length and clarity. Please send your messages to Jane Shaw at PERC (e-mail: [shaw@perc.org](mailto:shaw@perc.org)).

# FARMING and WILDLIFE

By *Dennis Avery*

Thanks to the Green Revolution (the huge increase in agricultural productivity that began in the 1950s) the world has not taken additional land for food production since 1960. We have kept one-third of the world's land surface in forests. This has important implications for protecting wildlife.

In 2050, however, the world will have to produce nearly three times its current food output. As people obtain higher incomes, they demand more protein—especially meat, milk, and eggs. In addition, the forest-product demand in 2050 is likely to be ten times as great as it is today. It is no wonder that wildlife conservationists are urgently concerned.

There is, however, a safe, sustainable way out of this dilemma: high-yield conservation.

- If we triple the yields again on the world's existing farmland, we will not need to take additional wildlands for food production.
- If we plant 5 percent of the current wild forest area to cloned, tissue-cultured, fast-growing, high-yield trees, we can produce all the needed forest products, with only management logging of the rest of the wild environment.
- If we triple agriculture's water efficiency with sprinklers and plastic pipe, there will be enough water, and we will be able to prevent the salinization of agricultural land.

Modern farming is saving wildlands with hybrid seeds, irrigation, and better and safer pesticides. In the future, we hope to use still-safer systems featuring biotechnology, integrated pest and crop management, even better animal health medicines, and precision farming, in which we use global satellites and microprocessors to farm yard-by-yard rather than in 160-acre blocks.

*Dennis Avery is Director of Global Food Issues for Hudson Institute in Indianapolis. This passage is excerpted from the June 1997 issue of the Hudson Institute's newsletter, Outlook.*

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