

Vol. 39, No. 2

April 2008



Taking on King Coal 3



Reviving a California river 7



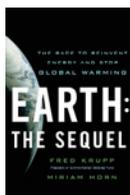
'Last, best hope' for rainforests 8



Green goes to work 10



Common ground in Florida 12



Earth: The Sequel

A new book by Environmental Defense Fund president Fred

Krupp details his personal search to find the best solutions to global warming—from flying windmills to artificial carbon-eating trees. “American entrepreneurs are reinventing energy,” he concludes. “We have every reason for hope.” [page 4](#)

Car wars

EPA PUTS THE BRAKES ON CLEANER VEHICLES; WE JOIN CALIFORNIA IN LAWSUIT ON GLOBAL WARMING

The Environmental Protection Agency's blatant attempt to stop states from taking action on global warming has spurred a massive lawsuit by Environmental Defense Fund and its allies.

In December, EPA administrator Stephen Johnson stunned many across the nation when he denied California's request to enforce tougher emissions limits on global warming pollution from vehicles. Under the Clean Air Act, California can set stricter vehicle emission standards than the federal government, but the state must be granted a waiver from EPA to do so.

Since 1968, EPA had granted every one of California's clean-car waiver requests—more than 50 in all. But not this time. Administrator Johnson claimed the state didn't need stricter standards because it faced no “compelling and extraordinary conditions” from global warming.

That's not so. With global warming, California faces sea level rise along its vast coastline, disruption of its precarious water supplies and increased smog as temperatures inexorably rise.

California's stricter standards would take effect immediately, reducing global warming pollution from vehicles by 30% when fully implemented.

Environmental Defense Fund filed suit against EPA on January 2 to overturn the decision, along with a coalition of environmental groups. A separate suit was filed by California; at press

time, that suit was joined by 14 other states that want to adopt California's stricter standards.

“The administration is putting the brakes on state action to address the global warming crisis,” said Vickie Patton, our deputy general counsel.

The courts have not been kind to previous efforts to delay global warming action:

- **Last April**, in a historic ruling, the Supreme Court overturned EPA's claims that it lacked the authority to regulate global warming pollution under the Clean Air Act. Massachusetts led a coalition of petitioners in the case, including Environmental Defense Fund.
- **September** brought another major victory. A federal judge in Vermont struck down an attempt by automakers to block California's new vehicle standards from being adopted. In his ruling, the presiding judge rejected the

Continued on p. 2



The road to a global warming law leads through Detroit



The auto industry isn't known for leadership on global warming. So what was I doing at the Detroit Auto Show, touring the razzle-dazzle machinery with

Representative John Dingell (D-MI), the industry's staunchest defender?

The fact is, without automakers America won't solve global warming. And change is in the air. You know something is afoot when you see pickup trucks flaunting hybrid engines and sleek electric concept cars with batteries molded into nooks and crannies.

But truth be told, Detroit hasn't yet focused its best minds on fuel economy. The Big Three keep pumping up their fleets' carbon dioxide

emissions while fighting California's efforts to reverse that trend.

Of course better cars are just part of the picture. To solve global warming, we also need greener fuels, cleaner coal plants, greater energy efficiency and more competitive renewable energy. In short: innovation.

While researching our new book, *Earth: The Sequel* (see page 4), Miriam

Reaching out to an unlikely ally

Horn and I met with visionary and wildly ambitious inventors who could change the energy game like nothing seen before. The challenge is how to get private capital flowing to the best ideas.

That's where Congress comes in. A cap-and-trade law—which establishes

a declining cap on carbon emissions and a trading market to find the least expensive reductions—is what's needed now.

Which brings me to Representative Dingell. As chairman of the House Energy and Commerce Committee, he has jurisdiction over drafting a global warming bill. I went to Detroit to urge him to act, and act fast. Standing beside me, he repeated a pledge to introduce a global warming bill "as fast as we can."

John Dingell and I don't agree on everything, but we do agree on the power of innovation and the need for an economy-wide cap on carbon to unleash it. The price of delaying action is far too high. We're reaching out to Chairman John Dingell and automakers to push legislation forward.

EPA stalls; we play hardball on clean vehicle standards

Continued from p. 1

industry's claim that it lacked the technology to meet the tailpipe standards. We joined the State of Vermont and other environmental groups in defending the case.

• **In December** we won yet another round when California federal district court judge Anthony Ishii similarly rejected automakers' attempts to block stricter limits on global warming pollution.

Environmental Defense Fund was a defendant-intervener in the case, working with California state officials and other environmental groups.

Judge Ishii's ruling put the ball back in EPA's court. He wrote: "Given the level of impairment of human health and welfare that current climate science indicates may occur if human-generated greenhouse gas emissions continue unabated, it would be the very definition of folly if EPA were precluded from action."

EPA has failed the test. With the consequences of

global warming clearly accelerating, California has asked the court to expedite the hearing of its case.

"While global warming marches onward, EPA continues to drag its feet," says Environmental Defense Fund general counsel Jim Tripp. "It is following neither the science nor the law."



Despite millions spent on green advertising, only modest changes were introduced at the Chicago Auto Show.



Solutions

Editor: Peter Klebnikov

Environmental Defense Fund, 257 Park Ave. South, New York, NY 10010. Main number 212-505-2100.

Membership questions: Call 800-684-3322 or email members@edf.org

Mailbag: Mail to address above, call 800-927-6464 or email editor@edf.org

©2008 Environmental Defense Fund. Published bimonthly at New York, NY. ASSN 0163-2566

New York • Austin • Boston • Boulder • Los Angeles
Oakland • Raleigh • Sacramento • Washington
Project offices: Beijing, China • Bentonville, AR

Online at edf.org

Scott Olson/Getty Images



MAILBAG

Editor:

"Biofuels—Can the Midwest replace the Middle East?" (*Solutions, November 2007*) is an upbeat title suggesting good things, but corn ethanol pollutes Earth's surface and atmosphere and produces about seven times the carbon dioxide as gasoline.

John Baird, Scottsdale, AZ

Our national climate campaign director Steve Cochran responds:

Not all biofuels are equal. If we account for all the emissions from producing biofuels—including related activities like converting land to grow the crops—we find that some create more greenhouse gases than



Getty Images

fossil fuels and some provide substantial benefits. In short, it all depends on where the fuel comes from, how it is grown and how it is made and transported.

That's why we are working with industries, farmers and other environmental groups to develop a low-carbon accounting system for biofuels—and why we support a low-carbon standard for all fuels (not just biofuels) as well as an overall cap on greenhouse gases.

Environmental Defense Fund

On this occasion of our 40th anniversary, we are returning to our full name, Environmental Defense Fund, after a number of years as Environmental Defense. A national survey found that we are still best known by our original name, so we are going back to our roots. Our new web address is edf.org.

Washington watch



Coal industry goes on the offensive

The 800-pound gorilla is officially awake. Now that Congress is moving forward on national climate legislation, the coal industry is planning a \$35 million ad campaign to block a cap on greenhouse gas pollution. According to *The Washington Post*, the campaign will include billboard and TV ads and even street teams. And that could be just the beginning.



George Steinmetz/Corbis

Coal can be part of the solution, but only if it changes its ways.

Environmental Defense Fund, both directly and through our Action Fund, is answering back.

Our TV ads featuring western governors from across the political spectrum proved so popular that other state leaders wanted to help. We now have radio ads with more governors calling on Congress to act. These ads are airing in Washington and in key Congressional districts.

The Senate Environment and Public Works Committee has already reported America's Climate Security Act, the bipartisan Lieberman-Warner bill, which we support. Senate leaders have vowed to bring it to the

full Senate this session. House Speaker Nancy Pelosi has also promised a climate vote.

Our Washington staff is bringing the case directly to lawmakers. We point out that waiting even two years to reduce emissions will double the amount of pollution we have to cut each year to avoid dangerous climate change.

"Our message is plain," says our vice president for programs Marcia Aronoff. "The United States has no more time to lose."



Be part of the solution: Tell your legislators to pass a climate bill this year at edf.org/action.

Farm Bill: Fate uncertain

At press time, lawmakers were making tentative moves toward ending the House-Senate stalemate over the Farm Bill and finalizing it in conference. But President Bush has threatened to veto the bill if it doesn't include subsidy reform.

We are pushing Congress to reduce some farm subsidies and pro-

tect the \$5.1 billion in new conservation funding we won. We're also working to ensure that we retain—and improve—policy changes that will make it easier for farmers to preserve clean air and water. It could be a tough row to hoe. The Senate conference committee has many members who oppose reform. Stay tuned.

EARTH: THE SEQUEL

A high-stakes race has begun among the smartest minds in America, from venture capitalists in Silicon Valley to scientists in the Alaskan wilderness to inventors in garages. The goal is to solve the greatest challenge of our time, global warming, by reinventing energy as we know it. And the prize will be the biggest explosion of wealth ever witnessed.

A new book, *Earth: The Sequel*, by Environmental Defense Fund president Fred Krupp and author Miriam Horn, is the story of how the \$6 trillion world energy economy is being transformed. Here are excerpts, adapted for *Solutions*.



Harnessing ocean waves

Few places overflow with life as generously as Washington State’s Makah Bay, near Olympic National Park. Here, deep Pacific waters mix with the sediment-laden flow of the Fraser River, creating one of the most productive marine ecosystems in the world.

For centuries, this marine abundance has supported the Makah tribe, and in 2001 the tribal council found a new way the sea could sustain them.

They teamed up with Alla Weinstein, an energetic woman whose start-up company promised to turn the waves’ kinetic energy into electricity.

Weinstein proposed mooring a cluster of buoys to the seafloor three miles offshore. Suspended from each buoy would be an 80-foot steel cylinder, “an acceleration tube” open at both ends. Two hose pumps inside the cylinder contract like a cow’s udder, pumping at continuous high pressure into a turbine and generator.

The partners were granted the nation’s first preliminary permit for an offshore wave energy plant. An 80 MW plant would take up only a tiny portion of the bay and supply half the electricity for the entire Olympic Peninsula. And many in the Northwest believe that ocean energy offers the best opportunity to rebuild declining coastal communities.



Algae make fuel

The four smokestacks of Arizona Public Service’s Redhawk power plant seem indistinguishable from those of any other natural gas-fired facility. Except that there is a big greenhouse at their feet, and a pipe running from the top of one smokestack into that greenhouse. Rather than venting the CO₂-rich gases into the atmosphere, these power-plant horticulturalists are feeding them to algae.

These microscopic single-celled creatures turn out to be everything you’d ever want in a feedstock for making liquid fuels. They are the fastest growing plants on earth—doubling their mass in a few hours time. They are highly adaptable, thriving in sewage, boiling water and ice.

It was algae’s appetite for CO₂ that first caught the attention of Isaac Berzin, the chemical engineer who co-founded GreenFuel Technologies and began the Redhawk experiment. The potential yields from algae dwarf those of any other biofuel crop. While an acre of soybeans yields about 60 gallons of biodiesel, an acre of algae could yield 5,000 gallons.

Solar power as cheap as coal



Ausra

In 2002, a physics professor named David Mills and an industrial designer named Peter Le Lievre launched a company (now called Ausra) in Sydney, Australia. Their aim was to build a power plant fueled by the sun that would be as big

and cheap as those fired by coal. As startups often do, they rented a garage and set about assembling a mirror and steam pipes to generate electricity.

They miscalculated on one front: The finished contraption was as big as a truck, and they almost didn't get it out of the garage. But when they finally hauled it out into the sunshine, it worked. By 2004, they'd produced their first megawatt.

Instead of high pressure turbines, Ausra will use saturated steam turbine technology from the nuclear industry that can tolerate fluctuations when the sun comes and goes on cloudy days. A key advantage of solar thermal over technolo-

gies that convert sunlight directly to electricity is its capacity to store energy as heat, which is far cheaper than storing electricity.

Ausra has contracts with PG&E and is building its first 177 MW plant on a California ranch. The rancher's daughter, Susan Cochran, believes solar energy's time has come. "It's totally renewable," she says. "We have three daughters to think about, and their future kids."

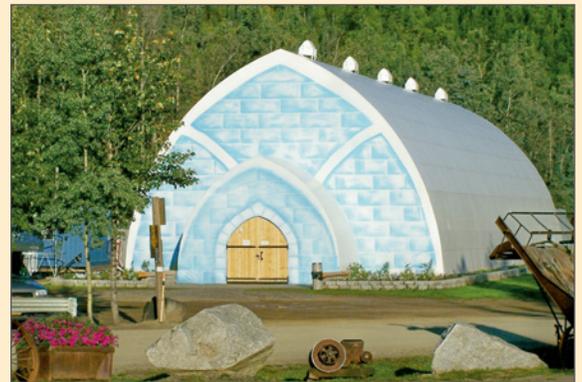
Innovations like these will save the planet—if Congress gives them a fair chance to compete. A federal cap on carbon pollution will unleash private capital to fund a new era of clean energy.

Power from within the Earth

The frontier spirit animates Bernie Karl, a former mechanic on the Alaska pipeline who built a hotel entirely out of ice alongside an Alaskan hot spring. When his cooling system proved inadequate, the hotel melted—along with his investment. *Forbes* called it "the dumbest business idea of the year."

But Bernie didn't give up. He hired a physicist to build a chiller powered by the 165-degree spring water, then built an electric power plant to run on that same water, the lowest temperature geothermal resource ever used.

Today, the ice museum is open and profitable. And United Technologies is mass producing the low-temperature geothermal power plant for global sale. The U.S. Department of Energy has called it one of the "top 100 R&D projects" in the nation.



The high-pressure ammonia liquid evaporates quickly, pulling heat from the ice museum via a circulating salt brine.

RESULT: One very cool museum.

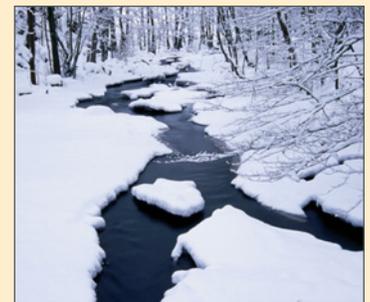
Here's how the cooling system works:

165-degree spring water heats an ammonia solution.



A condenser boils the ammonia at 40 degrees, turning it into a pressurized vapor.

Cold water from Monument Creek turns the pressurized vapor back into a liquid.



Regional update

NYC poised to be first in U.S. with traffic-cutting idea

New York, one of America's most congested cities, has taken a crucial step toward freeing itself of gridlock—and the pollution that comes with it.

After a series of public hearings and much debate, a state commission of experts recently recommended a congestion pricing plan for the city. By charging drivers a fee to enter the busiest parts of the city during peak times, this innovative system, which Environmental Defense Fund helped develop, could reduce the city's traffic by one-third, cut air pollution and generate millions of dollars for transit.

The plan calls for charging \$8 to drive a car during the day into Manhattan south of 60th Street; taxi passengers will pay \$1 per fare. The system will send positive ripples to the city's farthest edges by generating money for transit, parking, walking and biking enhancements.

Revenues would approach \$500 million annually.

In New York, rush hour lasts all day.

Congestion pricing has already been successful in London, Singapore and Milan. In London, traffic is down 21%, bus ridership is up 43%, cycling up 83%.

Cities create three-quarters of the planet's greenhouse gas emissions, even as they suffer from paralyzing congestion. In New York, rush hour now lasts all day.

This plan can change that. "By investing now in the transit system of tomorrow," says Andy Darrell, our Living Cities director, "we can keep Manhattan accessible to people of all income levels, cut pollution and congestion throughout the city and support urban growth. Congestion pricing is the key to a healthier, more mobile city."



Don Emmert/Getty Images

Revenues will fund mass transit and give pedestrians a break.



TPWS

The endangered golden-cheeked warbler nests only in the mature oak-juniper forests of Central Texas.

Endangered songbird gets a home on the range

Ten years ago, ranchers in central Texas chopped down juniper trees to avoid attracting endangered species and the regulators who followed them. Today, the ranchers line up to see Environmental Defense Fund biologist Linda Laack. She's helped more than a dozen landowners restore 1,200 acres of habitat for the golden-cheeked warbler—with more ranchers eager to join.

This turnaround from the "warbler wars" of the 1990s is credited to an innovative program developed by Laack with a diverse group of allies, including the U.S. Army at Fort Hood. The program has proven so successful that government agencies and private companies across the country are seeking to emulate it. "This could be the best hope for the warbler," notes Laack.

Under the program, known as a Recovery Credit

System, Fort Hood pays landowners to restore habitat in areas vital to the warbler's recovery. In exchange, the Army gets "credits" it can use if it accidentally harms nesting sites on the base. Landowners get financial assistance—so far about \$1.5 million—for practices that help both the warbler and their cattle, such as installing fences or reducing erosion. To receive funds, landowners must commit to 10- to 25-

A turnaround from the warbler wars

year contracts and contribute part of the cost.

"Environmental Defense Fund gets it," says Justin Tatum, a local rancher. "If you want to help endangered species, you have to work with landowners, not against them."

A California river runs wild —again

Every spring, snowmelt on California's Trinity River carries juvenile salmon on a ride to the Pacific Ocean. The stronger adults return to the river in the fall to spawn. This year, the epic journey will be easier thanks to streambed restoration projects now underway.

"I never thought I'd be excited to see a bulldozer along the banks of a river," says Spreck Rosekrans, senior analyst in our San Francisco office, "but it's part of an ambitious plan that will restore spawning beds and leave enough water in the Trinity to support historic levels of salmon and steelhead."

Trinity Dam, completed in 1964, has diverted as much as 90% of the river's natural flow, annihilating salmon runs that local Indian tribes had relied upon for centuries. A tribal-federal plan to restore water to the river was signed in 2000. But the plan, which we helped develop, was blocked in



Court win gives endangered salmon a lift.

Matthias Breiter/Minden Pictures

court by subsidized water and power users, including cities.

Environmental Defense Fund provided technical assistance to the Hoopa Valley Tribe as it successfully defended the restoration plan in federal court. The plan is crucial for restoring migrating Chinook and endangered coho salmon, whose populations have plummeted. We also led an effort to convince the cities of Sacramento, Palo Alto and Alameda to withdraw from the case, weakening the opposition's argument.

After studying the hydrology, Rose-

krans—who is part of a working group on the restoration effort—discovered flaws in the government's water allocation plans. "Thanks to his sleuthing and analysis, we are now able to get the water for the Trinity River," said Tom Stokely, the principal planner for Trinity County. The river now runs at 48% of its natural flow.

Scientist Dr. Luna Leopold, son of the legendary ecologist Aldo Leopold, called the river's restoration "the best thing I have seen in decades."

The next step: To deliver improvements downstream on the Klamath River.

The woman who fought to save an island

Judy Johnson's son remembers hopping into a VW bus with his mother to go camping on Assateague Island. At the time, the pristine barrier island on the



A force of nature: Johnson worked 80-hour weeks to save Assateague.

Maryland-Virginia coast was threatened by development. Together, they agreed that the most important work Judy could do was to help preserve the island they loved.

"When my mother set her mind to do something, she did it," says Reid Johnson. Judy, who died last year, has been described as "a force of nature." In her basement office, she worked 80 hours a week and helped found the organization known today as the Assateague Coastal Trust. After years of battles at the highest levels of government, Judy and her team prevailed.

"Assateague Island would not look as it does today had it not been for all the hard work of Judy Johnson over the years," said Senator Paul Sarbanes during a tribute in 1995.

One of the many battles Judy

fought on behalf of Assateague involved the piping plover. Beach buggies were tearing up the beach where the endangered birds nested. She contacted Environmental Defense Fund for help.

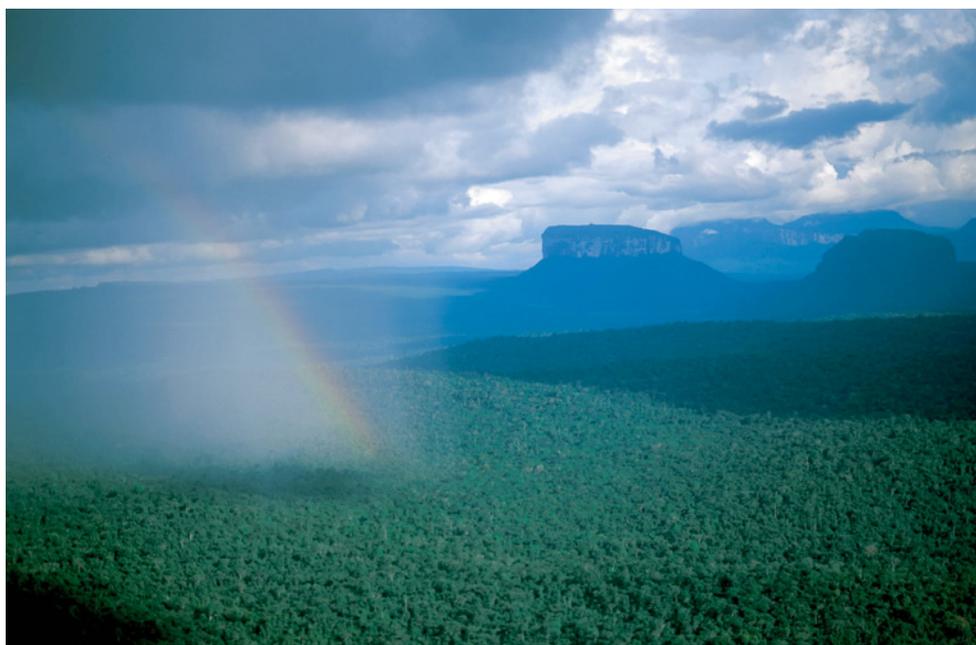
"We worked closely with Judy to protect the nesting areas," says attorney Michael Bean, our wildlife policy director. "As a result, piping plovers have taken a big step back from the brink of extinction."

Judy was a self-taught ecologist but the environment wasn't her only passion; she also managed the Baltimore Symphony Orchestra.

When Judy died last February at the age of 91, she included Environmental Defense Fund in her will. Her bequest will help us carry on her legacy of preserving wetlands and endangered species. It is with deep regret that we say: "Goodbye, old friend."

A plan to stop the burning

VALUING RAINFORESTS ENOUGH TO SAVE THEM



David Woodfall/Peter Arnold

Rainforests once blanketed 14% of the earth; now they cover 6%.

Clearing and burning of tropical forests releases 20% of the greenhouse gases that cause global warming, yet attempts to stop the destruction have always foundered on one incontrovertible fact: Untouched, the forests have little economic value to the developing countries in which they grow. So the deforestation continues.

This may be about to change. At the recent climate talks in Bali, Environmental Defense Fund championed the idea that financial incentives to developing countries could make their rainforests worth more alive than dead. The idea led to a major breakthrough, a commitment by both developed and developing nations to negotiate a plan by 2010 to curb rainforest destruction.

Our proposed policy would offer compensation from industrialized nations in the form of tradable carbon credits to developing nations that reduce deforestation in “measurable, quantifiable and verifiable” ways. Developed countries would contribute money and technical assistance. The system would be built into a post-Kyoto climate treaty which nations

will begin to negotiate next year.

“This is our last, best hope for a solution,” says Environmental Defense Fund scientist Dr. Stephan Schwartzman.

Deeply involved with the Brazilian Amazon for almost 30 years, Schwartzman lived and worked in the rainforest in the '80s as an anthropologist with the newly “contacted” Panará people. When the trans-Amazon highway reached Panará territory, bringing infectious diseases to which they had no resistance, the tribe was nearly wiped out, and the survivors forcibly removed to a reserve. (In 1996, helped by Schwartzman and others, the Panará reclaimed their homeland.)

Later, Schwartzman worked with our attorney Bruce Rich to halt World Bank loans for roads that were pushing the frontier—and its uncontrolled burning—deeper into the forest. In 1985 they persuaded the Bank to suspend a major road-building project on environmental grounds, the first time that had happened.

Schwartzman credits his friend, the legendary Brazilian rubber-tapper activist Chico Mendes, for teaching him that to

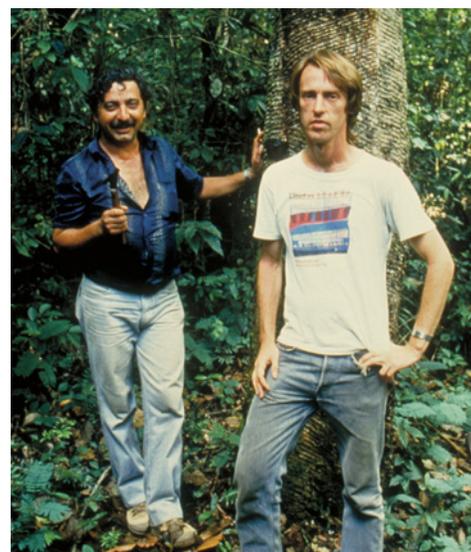
survive, the forest must somehow generate economic benefits for the people who live there.

“Environmentalists had it backwards,” Schwartzman remembers. “They thought they were the only ones who wanted to protect the rainforest, and that the people in the forest wanted it cleared. This wasn’t true at all.”

Schwartzman and Rich brought Mendes to Washington, DC, to campaign for sustainably managed reserves. Our alliance forced the Brazilian government to change its policies. When Mendes was assassinated by an enraged rancher, the countrywide grief brought the campaign an international audience.

Today, Brazil has protected 21% of its Amazon forest, an area twice the size of California. The country has strong laws and a small but enlightened Indian agency to help forest people defend their reserves against encroachment. Still, the clearing and burning of rainforests continues—in Brazil and worldwide.

“As long as forest lands are worth more as cattle ranches or palm oil plantations, forests will disappear,” says Schwartzman. “An international carbon market can give them the value they need to survive.”



Dr. Steve Schwartzman (r) with Chico Mendes, whose assassination focused the world’s attention on rainforest destruction.

“This is our last, best hope for a solution.”

Safe passage for the Utah prairie dog



Animals Animals

This tiny sentinel of the prairie is a “key-stone species” upon whom many other animals depend.

Because Utah prairie dogs forage on crops and dig networks of underground burrows, they were poisoned for 50 years by landowners and government agencies.

Despite federal endangered species listing in 1973, they remain threatened, ravaged by a fatal disease, sylvatic plague, and corralled onto just 7,000 acres of usable habitat in central Utah—three quarters of which is private property.

Two years ago, our ecologist Ted Toombs said his goal was a “culture of recovery” where everyone would work together to help save the prairie dog. He lobbied local landowners to enroll in a Safe Harbor program to manage their land for the species’ protection. His vision is becoming reality: six landowners have signed on, with seven more in line.

We are also working with corporations to build a Recovery Credit System that will pay rural landowners to restore and protect habitat.

Said Toombs: “With our incentive-driven approach, landowners are willing to participate—even with a species considered an agricultural pest.”

Court win on federal fuel economy standards

A federal court of appeals in San Francisco rejected the Bush administration’s fuel economy standards for light trucks in the 2008-2011 model years and ordered the government to improve the standards immediately. In a 90-page opinion relying heavily on our analysis, the court determined that the Department of Transportation had set the standards too low to meet America’s energy and global warming challenges. The court also noted that higher fuel economy standards could be achieved through today’s technologies. Joining us in chal-



Marilyn Goddard/Getty Images

The court relied on our analysis and closed the light truck loophole.

lenging the inadequate standards were 11 states and the Center for Biological Diversity, NRDC and the Sierra Club.

‘Catch shares’ transform a troubled fishery

Just one year after our innovative catch-share program was implemented in the Gulf of Mexico’s red snapper fishery, the fishery is recovering and maritime communities are benefiting. New data show the dockside price of fish has risen by one-third and the fishing season has tripled in length.



Environmental Defense Fund

Under the catch-share program, percentage shares of the total allowable catch are divvied up among fishermen. They may trade shares with other boats and can choose to fish whenever weather and market conditions are best—instead of making a mad dash for the sea under previous ten-day-per-month rules.

Fishermen may now keep fish as small as 13 inches (down from 15), so fewer undersized fish are thrown back dead—overall, discarded fish are down by at least 50%. “The evidence is in,” says our Gulf oceans policy director Pam Baker. “The new red snapper program is a big win for marine conservation and coastal communities.”

This is the first catch-share program enacted for a major fishery in the United States since Congress moved to end overfishing. We’re working on similar programs in New England, on the West Coast and for other Gulf fisheries.

New rules help both fishermen and fish.

The healthy office

CREATING A GREEN WORKPLACE THAT WILL BENEFIT WORKERS TOO

Snap quiz: How much more does it cost to build a green office? Ten percent more? Twenty percent? Pat Cioffi and Pam Vivian, who co-led construction of Environmental Defense Fund's new San Francisco office, were surprised to find that the new workplace—slated to receive a coveted gold certification from Leadership in Energy and Environmental Design (LEED)—cost only 4-5% more to build. "Ultimately, we'll save all that and much more from all the energy-efficiency details we've incorporated," Cioffi says.

Having settled into their new workplace in the city's Financial District in December, Environmental Defense Fund staff feel it's not just the environment that benefits. The office also is an especially healthy place to work, thanks to ample natural light and



Morgan Cowin

The green sweep: Ninety-five percent of the construction waste at our San Francisco office was later recycled.

minimal chemical "off-gassing" from carpets and furniture.

The new office includes such features as eco-friendly linoleum flooring, recycled Milliken carpet installed without glue, and paint with low levels of volatile organic compounds (VOCs). All appliances and computers have the EPA Energy Star rating, and a shower and ground-level bike racks make biking to work more attractive.

As Americans, we spend an average 90% of our time indoors. If we're in the workforce, much of that time is spent breathing stale air under old-fashioned,

glaring lights. We're exposed to a cocktail of chemicals emitted from paints and carpets (which typically contain more than 100 toxic chemicals), coupled with the mold and bacteria circulating from poorly maintained heating and ventilation systems.

AVOIDING INDOOR AIR POLLUTION

These conditions take their toll in the form of lost productivity, frequent colds, asthma attacks, headaches and fatigue. Studies estimate that by making improvements in indoor air quality, companies can

Green guides

RESOURCE CENTER

Guides to **Energy Star**-certified office equipment are available at energystar.gov.

The nonprofit **Green Building Council** offers information on LEED certification: usgbc.org 800-795-1747.

Green Seal certifies products that are environmentally responsible: greenseal.org 202-872-6400.

EPA offers a list of resources on green procurement: epa.gov/epp/tools/index.htm#a

For a health hazard evaluation of your office, call the National Institute for Occupational Safety and Health, 800-35-NIOSH; or contact your nearest federal Occupational Safety and Health Administration (OSHA) office at 800-321-6742.

The Washington, DC-based nonprofit **Green-guard Environmental Institute** certifies products free of harmful indoor emissions: greenguard.org.

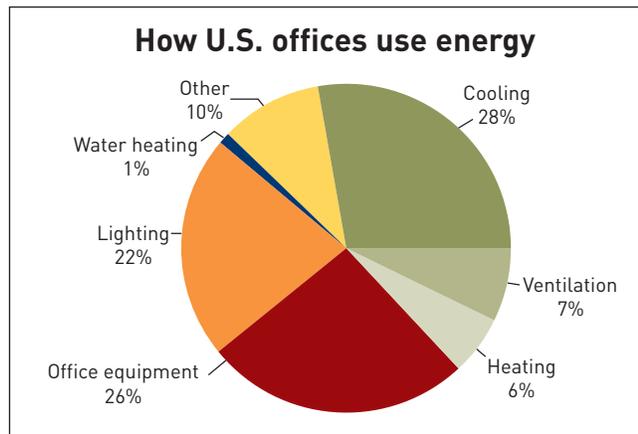
Guest columnists Jim Motavalli and Linda Baker write for E/The Environmental Magazine (for subscription information: 800-967-6572 or emagazine.com). Opinions are the authors' and not those of Environmental Defense Fund staff.

save eight to 17 times the cost of illnesses associated with “sick building syndrome.”

Here are some relatively low-cost tips to make your workplace greener; and don't forget that most of the same principles apply at home.

Care about carpets. For minimal off-gassing of chemicals, buy natural-fiber carpets (organically grown wool, cotton, hemp and jute are available) with few or no finishes (such as stain repellents). Install them with tacks instead of adhesives and clean them with non-toxic cleaners.

Be particular about paints. When repainting the office, your best bet is low-VOC paint certified using the standard established by the nonprofit Green Seal. Zero-VOC paint is obviously best, but it's pricey. You can find out about the VOCs in any paint by requesting the Materials Safety Data Sheet (MSDS)



Our workplaces offer a myriad of ways to save power.

from the manufacturer or paint store.

Worry about wood. Standard office furniture, paneling and shelves with eye-pleasing oak, walnut or cherry veneers are probably made of plywood and particleboard, which in turn consist of wood strips or particles bonded together with formaldehyde-based glues and resins. These materi-

als can off-gas chemicals for years. A range of formaldehyde-free alternatives is available.

Does it compute? Make sure your office electronics are certified by the federal Energy Star program. U.S. companies waste \$4 billion annually on inefficient use of office equipment. Just using the power management fea-

tures included with Energy Star models—and turning off computers and monitors when not in use—will save your office \$25 to \$75 in electricity per computer per year. Consider laptops for your staff; they're 95% more energy-efficient than PCs.

By Jim Motavalli and Linda Baker

The ticking clock...

Global warming will acidify oceans, destroy coral reefs

When carbon dioxide (CO₂) from smokestacks and tailpipes dissolves into the ocean, it forms carbonic acid. The dissolved CO₂ no longer heats up the atmosphere; instead it increases the ocean's acidity. As seawater becomes more acidic, organisms such as corals and shellfish don't have the carbonate they need to form hard shells. Scientists say this could mean that coral reefs worldwide face extinction.

Three new studies add urgency to predictions that reefs may die by mid-century if CO₂ is not brought under control. Coral reefs support multibillion-dollar tourist industries and provide habitat for many of the world's fish. A billion or more people depend on fish as their main source of protein.

Scientists have already shown that coral growth declines as ocean acidity increases. A recent study in *Nature Geoscience* used a field experiment to show that certain algae that help to solidify reefs are also “severely inhibited” in highly acidic seawater. Another recent paper in *Science* concludes that ocean acidification, combined with warming, pollution and other stresses, is “driving reefs increasingly toward the tipping point for functional collapse.”

“Almost half of all coral reefs appear to be heavily affected by a variety of human activities,” says Dr. Rod Fujita, an Environmental Defense Fund marine biologist who contributed to another recent study in *Science* that summarizes the effect of human activities on the oceans. “As development increases, kelp forests and rocky reefs are also increasingly vulnerable.”



Coral reefs rival rainforests in biodiversity.

Hope for the Peruvian Amazon

For the first time in its history, Peru has an Environmental Ministry, thanks in part to our concerted efforts. Until now, environmental protection in Peru has been virtually nonexistent, falling under the Ministry of Energy and Mines, whose mandate is exploitation, not regulation, of Peru's fabulously rich biodiversity.

Our Peru expert Aaron Goldzimer helped persuade U.S. officials to press Peru on its environmental performance during discussions leading up to the U.S.-Peru Free Trade Agreement. He also helped convince the World Bank and others to leverage their billion-dollar financing of Camisea II, a huge natural gas drilling project in the Amazon.

Goldzimer then released our devastating economic analysis of Camisea II to Peru's most important newspaper, triggering a political and media firestorm that led to President Garcia's proposal for an Environmental Ministry.

"Further work lies ahead to ensure the ministry is meaningful and strong," says Goldzimer. "But this is a historic step."



Tui De Roy/Minden Pictures

Finally, an official commitment to one of the earth's great forests.

Landowner cooperation helps the Everglades, Florida's 'river of grass'

The sawgrass wetlands that once stretched from Orlando to the Florida Bay have shrunk to half their original size, encroached upon by agriculture and housing. A patchwork maze of canals and levees now diverts the Everglades' slow-moving, shallow waters to Lake Okeechobee, where pollution from agricultural runoff is a growing problem. There is little habitat left for the 22 endangered and threatened species that live or breed in the area, including wood storks, sea turtles and Florida panthers.

Now additional wildlife habitat could be created on 850,000 acres of cattle pasture located north of the lake, in cooperation with landowners. Environmental Defense Fund has been advising the Florida Ranchlands Environmental Services Project on how to work with ranchers to restore the pastureland for wildlife. The project will help cleanse the water as well.

Ranchers are volunteering in a five-year pilot program to improve wildlife habitat, moderate water flow patterns and improve water quality by sequestering phosphorus. Once the program is established, ranchers who sign on will be able to sell environmental services such as pollution control, saving the public money over costly public works projects. The added income will create



Animals Animals

We're helping panthers and ranchers find common ground.

financial incentives for ranchers to stay in business—rather than selling land to more intensive agriculture and urban development that would aggravate the Everglades' multiple problems.

Our Safe Harbor model will ensure that ranchers have flexibility when endangered species begin using restored habitat. And that means the welcome mat for rare wildlife may soon be getting bigger.



 Solutions

Environmental Defense Fund
257 Park Avenue South
New York, NY 10010

Address Service Requested

Totally chlorine-free 100% recycled (75% post-consumer) paper

NON-PROFIT ORG.
U.S. POSTAGE
PAID
ENVIRONMENTAL
DEFENSE FUND