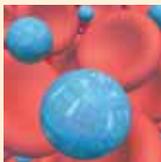


Vol. 37, No. 1

January-February 2006



**The Clean
Air Act
at 35** 3



**The promise
and peril
of nanotech** 5



**2005: A
year of
progress** 6



**Saving San
Francisco
Bay-Delta** 8



**Harvesting
heartland
energy** 10



**Species on
the brink** 12

In response to Congressional attacks on the Endangered Species Act, Environmental Defense members across the country speak out for protection of rare wildlife.

Northeast unites to curb warming

HISTORIC MULTISTATE PACT PUTS REGION ON THE PATH TOWARD ENERGY INDEPENDENCE

The negotiations were difficult—and at times acrimonious. But in December the governors of seven northeastern states hunkered down on a conference call and hammered out a historic agreement to cut greenhouse gas emissions from power plants.

The Regional Greenhouse Gas Initiative (RGGI) is the nation's first multistate cap-and-trade system for carbon. "This is a critical step toward developing a national policy on global warming and positioning the Northeast to take advantage of the growing opportunities with clean technologies" says our president Fred Krupp.

With the Bush administration increasingly isolated in its stance on global warming, states and businesses are stepping into the breach. The action by northeastern states allows the region to begin catching up with the rest of the industrialized world. Environmental Defense played a critical role in making this happen. We served on New York Governor George Pataki's task force that

initiated the process in 2003.

Under the plan, power plants in the seven states—Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York and Vermont - will be required to cut carbon dioxide 10% by 2020. Electric utilities will decide among themselves which of the nearly 200 power plants should make the largest cuts, creating an emissions-trading market to achieve the required reduction at lowest cost. This mirrors the successful acid rain provisions of the 1990 Clean Air Act we helped design.

"Environmental Defense has been a consistently positive force, finding ways to bridge gaps between industry and the environmental side," notes Franz Litz, New York State coordinator of climate change policy.

The accord was nearly derailed when Massachusetts Governor Mitt Romney sought to include price controls on the power plant program,

*Please see
Cover Story, p. 2*



New horizons: Power plants in seven states—an area whose greenhouse gas pollution is as high as Germany's—will be required to cut carbon dioxide 10%.

Mission possible: Reviving Gulf Coast wetlands



Americans will not soon forget the wrath of Hurricane Katrina. The full tragedy hit home for me on a recent tour of coastal Louisiana with EPA adminis-

trator Stephen Johnson. Flying aboard a Blackhawk helicopter, we retraced the hurricane's path over open water that a century ago was thick coastal marsh. Below we saw shattered houses and huge oil tanks torn from their bases. The areas most damaged were those least protected by nature's armor.

Wetlands lining the coast of Louisiana provide a buffer against storms. But since 1930, more than 1,900

square miles of wetlands have been lost. Channeling the Mississippi River has exacted a high cost. Nitrogen-rich sediments that once nourished the wetlands are being funneled over the continental shelf, creating a dead zone in the Gulf of Mexico the size of New Jersey.

To fix the problem, we need to

Rebuilding healthy wetlands is our best insurance.

implement a plan to rebuild levees and restore wetlands. Reconnecting the Mississippi to its historic delta also will reduce the size of the Gulf's dead zone.

The Senate has an opportunity to start that process when it debates restoration options in January. I have

urged Congress to appropriate \$5.5 billion for wetlands and to create an independent commission to oversee this restoration effort.

Rebuilding healthy wetlands is our best long-term insurance to protect coastal residents and infrastructure against damage from hurricanes, which will intensify with global warming.

I'm encouraged that the EPA administrator wants to find a solution. The agency has a key role to play as a partner with the Army Corps of Engineers in reviving coastal Louisiana. Now is the time to act. Every hour we delay, roughly two acres of wetlands sink into the Gulf.

Nation's first regional cap on heat-trapping gases signed

Continued from p. 1

which would have discouraged innovation. Environmental Defense argued adamantly for a firm emissions cap and a robust market. Several of our board members and strategic partners weighed in with governors at key moments to keep the rules strong. Our efforts paid off.

Although Massachusetts and Rhode Island backed out, the remaining seven states forged a strong bipartisan

pact. The cap-and-trade approach gives companies an incentive to find the least-cost pollution reductions. "Far from breaking the bank, RGGI is a winner for the states' economies and for consumers' bottom line," says our attorney Jim Marston.

Participating states already have begun deploying plans to cut their emissions - and not just from power plants. Several, including New York, recently

adopted California's landmark greenhouse gas law for cars and pledged to increase reliance on renewable energy such as wind power.

The support for RGGI in corporate boardrooms and on Wall Street reflects the realization of many companies that some form of cap on carbon emissions is inevitable. "The regulations will change someday," Cinergy CEO James E. Rogers told Business Week. "And if we're not ready, we're in trouble."

The initiative serves as a model for other states and has ratcheted up the pressure for a national law. California, Washington and Oregon are exploring a similar agreement. "The Northeast will be an important proving ground," says Marston. "This initiative sets up a legal and technical framework for how a national program might work."



Mainstream America is ready to tackle global warming. Super Bowl XL will offset its carbon dioxide emissions by planting trees around Detroit.



Editor: Peter Klebnikov

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

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

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

©2006 Environmental Defense. Published bimonthly at New York, NY. ASSN 0163-2566

New York • Washington • Oakland
Boulder • Raleigh • Austin • Boston
Project offices: Los Angeles • Beijing

Online at www.environmentaldefense.org



MAILBAG

Editor:

I was pleased to read your report on cutting back the use of antibiotics in pork production. I have a grandchild and I am constantly concerned about the safety of the food she consumes. However, I do wish you would take your campaign one crucial step further and address the problem of industrial farming itself.

Isabel Weisinger, Bronx, NY

Our scientist Dr. Joseph Rudek responds:

Large livestock operations are a major source of pollution for rural communities nationwide. We are leading the charge to require such hog operations to install clean, affordable waste management technologies. With our allies, we secured a moratorium on hog farm expansion in North Carolina until the problems are resolved. Now we are helping convert hog waste to clean energy. Our goal is a national model for sustainable livestock production.



Ray Pfortner/Peter Arnold

Editor:

My wife and I flew from Sacramento to Corpus Christi (2 @ \$450), rented a car for four days (\$300), stayed at a nice bayfront hotel for three nights (\$500), bought meals, drinks, maps, gas, guidebooks and souvenirs and paid entrance fees to the Aransas National Wildlife Refuge to see a blurred white stick of a whooping crane hunkered down a mile across the wetlands, and loved every soggy, salty minute of it. Congress needs to listen to taxpayers like us.

Ian Baldwin, Elk Grove, CA

WE WANT TO HEAR FROM YOU!
See addresses at left.

Washington watch



The Clean Air Act: 35 years of progress

When the Clean Air Act passed in 1970, 88% of American children had unhealthy lead levels in their blood. Today the figure is less than 2%, thanks largely to that landmark law and the resulting phaseout of lead in gasoline, which Environmental Defense helped achieve.

On the Act's 35th anniversary, there were plenty of reasons to celebrate: Pollution levels have fallen 50% for sulfur dioxide, 52% for carbon monoxide and 75% for particulates—even as the nation's gross domestic product has doubled. Opponents' claims that the law would cripple the economy never materialized.

The Clean Air Act's success stems from its mandate to base air standards on human health. Despite the progress, however, the law remains under attack in Congress and half of Americans still breathe unhealthy air. New studies indicate that particulate pollution poses a greater threat than previously thought. Microscopic particulates lodge deep in the lungs and contribute to heart disease and lung cancer.

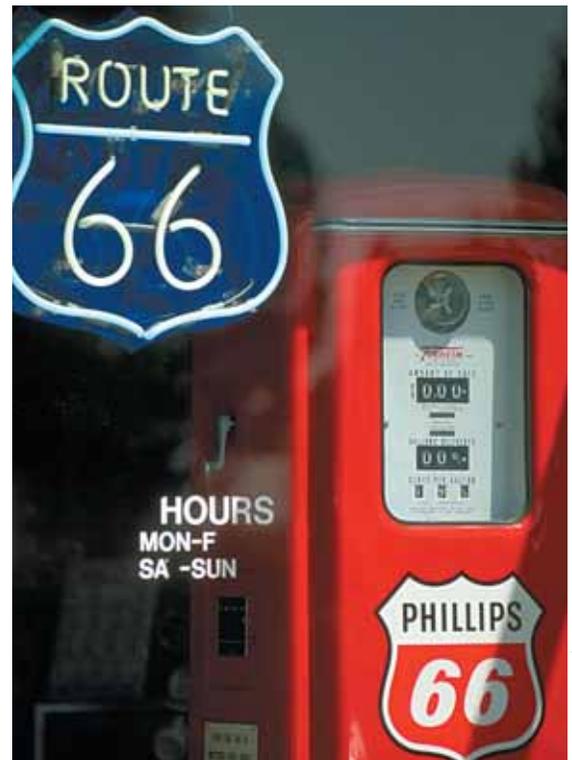
Environmental Defense has published a report, *The Clean Air Act at 35*, outlining cost-effective strategies to cut particulate pollution over the next decade. Here are some priorities:

- **Clean up existing diesel engines.** Retrofitting half of the 11 million diesels on the road today would produce \$42 billion in health benefits.
- **Modernize pollution controls for coal plants.** Installing modern controls such as

scrubbers would reduce pollution by more than 2.5 million tons and prevent 7,500 premature deaths annually.

- **Strengthen clean air standards for ships and locomotives.** Without stricter limits, these under-regulated sources will account for nearly half of all diesel particulates by 2030.
- **Close the loophole for boilers.** Pollution from on-site boilers at industrial facilities is expected to rise over the next decade to rival that from coal plants.

The original Clean Air Act passed because Senators Howard Baker (R-TN) and Edward Muskie (D-ME) set aside their political differences and agreed that healthy air is a national priority. The legislation passed unanimously. Today, we need a renewed commitment to grant all Americans clean air.



Robert Holmes/Corbis

The Clean Air Act got the lead out of gas—and America's children.

Regional update

Going 'local' to help Houston air

For years Houston has competed for the dubious distinction of "most polluted U.S. city." Now Environmental Defense has hired an air pollution expert there to advance an ambitious multiyear clean air plan supported by Houston's recently reelected mayor, Bill White—formerly a member of our Texas advisory board.

"The timing is right to make progress on Houston's air problems, which are also public health problems," says our expert Betin Santos.

Our initiative is focused on reducing diesel pollution in the region. We're working with parents to push Texas to clean up aging school bus fleets. School buses remain the safest way to transport children to school, but harmful diesel pollution can get trapped in the cabins, exposing children,

who are particularly vulnerable.

We're working with parents to clean up polluting school buses.

We're encouraging local governments to reduce emissions from diesel construction

equipment on public works projects. The city of Houston will soon begin offering contractors a cash bonus for using cleaner equipment. We'll track progress and call for improvements if this program doesn't cut diesel pollution fast enough.

We're also promoting technologies that allow long-haul truckers who now idle their diesel engines overnight to shut down their rigs instead. One option is to outfit area truck stops to provide air conditioning, electric power and Internet connections at a lower cost than running the trucks.



Richard Cummins/Lonely Planet

Houston, we have a solution.



Frank Lane/Corbis

Our earliest victory was a ban on DDT, a pesticide that harmed osprey and other wildlife. DDT is no longer used in America, but now Long Island's ospreys face a shortage of a key food.

The little fish that plays a big role in the chain of life

Every spring, after an arduous migration from South America, ospreys come to New York's Long Island to replenish their strength and to breed. Ospreys in the area have been reproducing at a low rate, however. Scientists suspect the problem may be due to a decline of alewives, or river herring.

Ospreys and other key predators depend on this humble fish for nutrition. But the average catch of alewives is less than 3% of what it was in the 1960s. Overfishing, pollution and barriers to migration are to blame.

As spring approaches, alewives begin migrating from the Atlantic into Long Island's streams to spawn. Usually, their journey ends at a concrete wall. Dams, many of them obsolete, block nearly every major alewife nursery.

Environmental Defense assembled a coalition and secured \$1.5 million in state

funding to begin reengineering and in some cases dismantling the dams, allowing for fish passage on rivers such as the Carmans. A series of fish ladders will allow alewives to resume their historic journey.

"For too long we've ignored the important fish lower on the food chain," says our scientist Dr. Jake Kritzer. "We need to manage

Helping alewives complete a historic journey

the oceans from an ecosystems-based perspective."

"This would not have happened without Environmental Defense," says Anthony Graves, Brookhaven Town's environmental analyst. "Soon, ospreys, seals and game fish will benefit. We're thrilled."

Unlocking the secrets of nanoparticles

We call them “Team Nano”: Environmental Defense experts in science, health, business and law championing the safe development of nanotechnology. Like the atomic-scale particles they work on, they’re having an outsize impact on the business world.

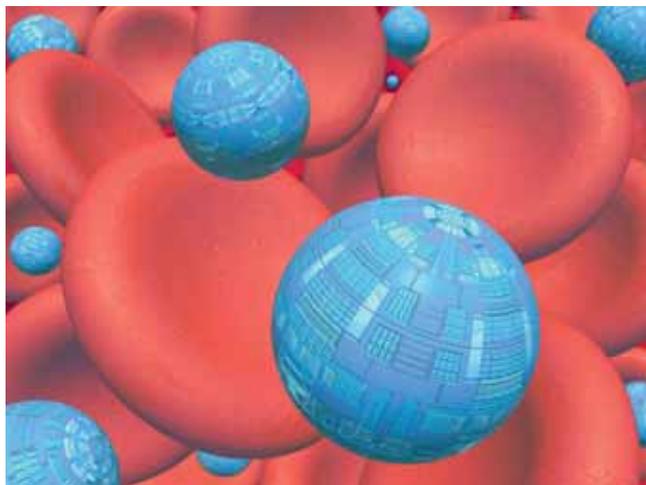
In the past year, our calls for more research, better regulation and heightened corporate responsibility have been heard in national newspapers, the scientific press, law journals and the U.S. Congress. As our scientist Dr. Richard Denison told the House science committee in November, we’ve developed “a convergence of views” with industry and the insurance and investment communities. The consensus? This new science can revolutionize industry, but it’s necessary to investigate early warnings that some nanoparticles may pose risks to human health and the environment.

Our emergence as a leading voice on nanotechnology began last summer with a *Wall Street Journal* op-ed by our president

Fred Krupp and DuPont CEO Chad Holliday that called for corporate standards, better regulations and \$100 million annually in government funding for risk research. The NanoBusiness Alliance and the American Chemistry Council’s nanotechnology panel joined us in calling for increased research, while the Environmental Law Forum and National Academy of Sciences published our articles on steps needed to insure that this technology does not go the way of asbestos or DDT.

Writing in the *San Jose Mercury News* and *The Boston Globe*, we urged leaders in those nanotech hubs to “unleash the power of this technology while containing its risks.”

The message is getting through.



Tim Fonseca

Tiny nanomachines known as “respirocytes” could one day operate as artificial red blood cells.

We’re now working with EPA, the National Institutes of Environmental Health Sciences and international standards organizations on research and standards. And most recently, DuPont and Environmental Defense have agreed to collaborate on a framework for the responsible production, use and disposal of nano-scale materials.

Congress moves to end corruption in international lending

Peace, rain, wealth is the motto of Lesotho, but this once-fertile mountain nation has experienced little of these since a massive World Bank-funded dam project began piping its water to neighboring South Africa. Four years of severe drought have left crops withered in the fields, and royalties from water sales haven’t helped poor farmers:



Loni Pittinger/IRN

Driven from their land by a World Bank-funded dam, Lesotho’s Highlands people face an uncertain future.

According to the World Food Program half of Lesotho’s population—almost one million people—need food aid.

Tragically, this story is far from unique. Development banks have poured billions into large projects in Africa that reap bonanzas for large corporations but fail to benefit the poor. Corruption is a major factor: Since the World Bank began lending four decades ago, up to \$100 billion may have been stolen by corrupt officials, according to a recent study.

Rich lenders often blame developing countries, but Lesotho set out to prove corruption goes both ways. The country won convictions against three of the world’s largest construction firms for paying bribes to win contracts. Stunningly, the devel-

opment banks continued financing projects involving the guilty companies.

Alarmed by the waste of taxpayer money, Senator Richard Lugar (R-IN), chair of the Senate Foreign Relations committee, examined the corruption. He consulted Environmental Defense experts. We helped arrange visits to troubled projects and provided testimony to the committee. We also brought the lead prosecutor from Lesotho to testify. One week later, the World Bank barred one of the construction firms, Acres International, from projects it funds.

This fall, President Bush signed into law reforms championed by Lugar. These call for financial transparency and for a grievance process for people displaced by development. “The banks are on notice,” says our policy analyst Shannon Lawrence. “Congress will be watching to ensure tax dollars benefit the poor, not corrupt officials.”

Thanks to our members' support, 2005 saw progress on some of the planet's most serious environmental challenges. Here are some of this year's milestones:

2005

CLIMATE



Getty Images

As melting polar ice and devastating hurricanes spotlighted the impacts of global warming, states, mayors and corporations stepped forward to reduce the greenhouse gas pollution that is at the heart of the problem.

March: Rainforests preserved. To reduce tropical deforestation, which accounts for 20% of global warming pollution, we help preserve 85,000 square miles of threatened rainforest in the Brazilian Amazon.

June 1: Leadership in California. Acting on our suggestions, California Governor Arnold Schwarzenegger issues an executive order for the state to reduce its greenhouse gas pollution 80% by 2050.

June 28: The Senate makes a promise. Endorsing a market-based approach we pioneered, the U.S. Senate passes a resolution that calls for a mandatory national cap on global warming pollution. Business announces a readiness to act: **"Give us a date, tell us how much we need to cut, give us the flexibility to meet the goals, and we'll get it done."** Wayne Brunetti, CEO of Xcel Energy, *Business Week*.

August 29: Hurricane Katrina smashes the Gulf Coast. With the number of category 5 hurricanes projected to increase due to global warming, we redouble our efforts to restore critical wetlands protecting New Orleans.

November 9: New York chooses cleaner vehicles. At our urging, New York State adopts California's stringent limits on greenhouse-gas pollution from automobiles.



NASA

December: Cleaner delivery trucks honored. With FedEx, we are awarded a Calstart Blue Sky Award for our "...nearly single-handed placement of commercial hybrid trucks on the map for corporate America."

ECOSYSTEMS

As the House voted to dismantle the Endangered Species Act, property owners across America joined our Safe Harbor initiative, proving to Congress that species' and landowners' needs are not incompatible.

January: Supporting farmers who choose to conserve. We help secure \$207 million for the restoration of wetlands and floodplains in Ohio to protect rare species and waterfowl habitat.

March: Shelter for ocelot. We partner with Texas landowners and Pronatura Noreste, a Mexican environmental group, to create a cross-border habitat to preserve the last wild population of endangered ocelots.

June 21: Clearing the haze in national parks. Our court-ordered consent decree forces EPA to reduce pollution from power plants that contribute to haze in 156 national parks including Acadia, Grand Canyon and Yosemite.



Tom Brakefield/Corbis

Continued on next page

HEALTH

The most important clean air program in 15 years took hold, along with new initiatives to protect the effectiveness of antibiotics and clean up diesel exhaust.

January: A voice for inner cities. Our negotiations with Los Angeles International Airport result in \$500 million in environmental and job benefits for communities affected by airport expansion. This is the largest such agreement ever made.

March 13: EPA rule advances public health. The Clean Air Interstate Rule we helped develop requires eastern states to cut sulfur dioxide 70% and nitrogen oxides 65% from

Continued on next page

The year in review

Ecosystems continued

September 30: An attack on endangered species. The House passes a bill that would cripple the Endangered Species Act. Released just in time, our report galvanizes opposition in the Senate. 25,000 of our Action Network members call on Congress not to demolish species protections.



Photocomposition: Greg Richardson/Level Par

November 13: Toward rebirth of a fabled valley. Our report showing the feasibility of restoring Hetch Hetchy Valley inspires broad support and a Schwarzenegger administration study. **“There is no opportunity like this anywhere in the world—to add another Yosemite Valley to our great National Park System.”** Donald Hodel, President Reagan’s Secretary of the Interior, in the *San Francisco Chronicle*.

Health continued

power plants. EPA says it will prevent 17,000 deaths a year by 2015. The rule delivers **“...the largest pollution reductions and health benefits of any air rule in more than a decade.”**

Stephen Johnson, EPA Administrator.

June 28: Tackling diesel pollution.

In the Senate we help develop and pass by a vote of 92 to 1 the bipartisan Diesel Emissions Reduction Act. It commits \$1 billion to clean up diesel exhaust from trucks, ships, school buses and tractors nationwide.

September: China seeks a solution. We’re invited by China to



OCEANS

Fishermen became our allies in successful campaigns to preserve critical ocean habitat and introduce market-based methods for recovery of troubled fisheries.

March 30: Keeping fish oil healthy.

We publish a survey of 54 major producers of fish oil supplements examining whether they meet their responsibilities to test for dioxins, PCBs and mercury. The survey urges consumers to buy from those companies looking out for the public’s health.

June: Defending fish and fishermen.

Nearly 6,000 square miles of undersea habitat off the California coast is protected thanks to our work with commercial fishermen who help identify prime fishing spots. **“This is revolutionary,”** notes Jay Elder, harbormaster of Port San Luis. **“Fishermen never tell you their secrets.”**

September 29: New rules for Hawai’i.

The Northwestern Hawaiian Islands State Marine Refuge is created. More than 20,000 of our members help convince the state to pro-



Tim Connor

tect the largely uninhabited island chain and its coral reefs, which stretch 1,200 miles across the Pacific, sheltering numerous endangered species.

October: Preserving a way of life.

We help Cape Cod fishermen form a co-op that grants members a percentage of the catch of depleted stocks such as cod, curbs overfishing and helps fishermen market their sustainably caught products.

December: Reeling in better seafood.

A leading retailer, Wegmans Food Markets, joined with us to promote environmentally sound seafood. In our partnership, we’re helping the supermarket chain develop purchasing standards and market top-quality farmed seafood that does not deplete the oceans.

help create a plan to cut sulfur dioxide 10% below 2000 levels. Our market-based projects are already at work on one-third of China’s sulfur dioxide emissions.

September: Keeping antibiotics effective for humans.

Responding to our campaign against antibiotic resistance, the FDA bans a key antibiotic in poultry. With the Compass Group, we create a policy curtailing growth-promoting antibiotics in hogs.

December: Out front on nanotech. We launch a partnership with DuPont to develop safety measures for nanotechnology, the fast-growing science of engineering materials at the molecular level.

San Francisco's delta blues

California Dept. of Water Resources



The Bay-Delta is the source of fresh water for two-thirds of Californians and five million acres of farmland. Our goal is to provide water for the environment when it's needed most.

The tiny Delta smelt is no poster fish and has no support group. Nevertheless, the smelt's precipitous decline in the San Francisco Bay-Delta has anglers, Native American groups and state agencies sounding the alarm. "Smelt are

an indicator of the biological health of the entire Bay-Delta ecosystem," says our water resource analyst Ann Hayden.

The Bay-Delta is the largest estuary in the West and an area of unsurpassed ecological importance for salmon, migratory waterfowl and more than 750 plants and animals. Extinction of the smelt "would be an unspeakable tragedy," says Bill Kier, a Sausalito fisheries consultant. "It plays a central role in the Delta food web."

Adds EPA biologist Bruce Herbold: "Something is definitely wrong." Scientists say the smelt's decline has many causes, including invasive species and chemical runoff, but the main culprit is the massive

diversion of water to farms and cities.

Many smelt preparing to spawn are chewed up by water pumps. Since smelt have only a one-year life cycle, one bad year can be devastating.

In 2000, the state adopted a plan to help the fish and restore the Bay-Delta's ecological health, but it wasn't funded adequately and the environment was robbed of critical water. Environmental Defense testified before government agencies and issued a report, *Finding the Water*, proposing solutions to restore the Bay by providing more water for the environment and shutting down pumps when they harm fish.

We are also negotiating with water users for a user fee program to fund such solutions. "If a resource is scarce we ought to put a price on it that reflects its value," says our regional director Tom Graff. "Otherwise there's an incentive to over-consume the resource."

Environmental Defense joins suit against automakers

When Environmental Defense helped pass landmark clean car legislation in California in 2002, the auto industry vowed to fight it in court. So instead of investing in engineering to meet the public's demand for more fuel-efficient cars, the industry is deploying a fleet of lawyers to block this first-in-the-nation effort to cut global warming pollution from cars.

Last month a judge ruled that Environmental Defense, as a prime mover behind the law, and several other environmental groups could join the fight to defend the statute in court. "With no action on global warming from the federal government, it's critical that we defend these state laws," says our attorney Jim Marston. Meanwhile, we have been encouraging other states to adopt California's approach, producing similar laws in New Jersey and Connecticut, with more on the way.

It was already clear that the

automakers are on the wrong side of the science and the law on this issue, but a new survey we commissioned by R.L. Polk & Co. shows they're on the wrong side of their customers as well—even the drivers one might least expect. Contrary to the images that fill TV ads, pickup truck drivers are less concerned about having the power to haul loads and crash through the backcountry than about having better gas mileage. The poll found that pickup drivers rate increased fuel economy almost as highly as all other potential improvements combined.

With pickup sales flat and SUV sales in decline, the auto industry should be poised to profit

from consumers' increasing interest in fuel-efficient vehicles. One hopes Detroit will start investing more in energy-efficient cars and pickups and less in high-octane lawyers.



For a summary of our pickup truck driver survey results, visit: www.environmentaldefense.org/go/pickupstory.



Don Johnston/Getty Images

Contrary to television ads, pickup truck owners care more about fuel economy than the thrills of off-road travel.

Climate talks aim to preserve forests



Tui De Roy/Minden Pictures

Tropical deforestation accounts for some 20% of global warming pollution, nearly as much as total U.S. emissions.

Despite U.S. opposition, over 150 nations meeting in Montreal in December agreed to negotiate new commitments for the Kyoto climate treaty after it expires in 2012. Thanks to an innovative proposal by Environmental Defense and partners in Brazil, Papua New Guinea and Costa Rica, talks on compensating countries

that reduce deforestation were also launched. The cutting of forests is the single largest source of greenhouse gases in the developing world.

Financial incentives for protecting tropical forests are weak, and Kyoto doesn't address the problem. Environmental Defense has worked painstakingly for years to enable the countries that curb the destruction of their

forests to earn tradable credits. We demonstrated the benefits to local partners and convened 20 top remote-sensing scientists to verify that deforestation can be accurately measured. In Montreal, when every other nation (including Brazil, previously an opponent) supported the parallel talks, the

United States had to go along.

"Our plan brings developing countries into the fight to cut global warming pollution," says our climate analyst Gus Silva-Chavez. Negotiators now have two years to work out the details.

Silicon Valley leaders join fight against warming



AP Photo

For Joy, climate action is a no-brainer.

As state officials began figuring out how California will reduce greenhouse gas pollution 80% by 2050, three visionary entrepreneurs joined Environmental Defense in highlighting the dramatic opportunities ahead. In a letter to state officials, the three Silicon Valley legends, John Doerr, Bill Joy and Ray Lane, reinforced our call for a mandatory cap on greenhouse gas emissions and a carbon trading market to create incentives for innovation. California firms can profit from new technologies and the global market, the three noted.

Doerr, a partner at the prominent venture capital firm Kleiner Perkins Caulfield & Byers and a longtime friend of Environmental Defense, enlisted Joy, the co-founder of Sun Microsystems, who was once called "The Edison of the Net" by *Fortune*, and Lane, former CEO of Oracle Corporation. The three pledged to help us "galvanize support from California business leaders" for these ideas and help lead the nation toward a low-carbon future.

Victory in California waters

Six years ago, when our scientist Dr. Rod Fujita proposed protecting thousands of miles along the Pacific coast, he ventured an optimistic forecast. Though lingcod, a valuable fish found only in those waters, were down to 10% of natural levels, he maintained that giving them a few years respite from fishing to grow larger would ensure recovery. "Because big lingcod produce many more eggs than small lingcod, we knew they would respond well to protected areas," Fujita said.

It wasn't easy for local fishermen. To comply with new conservation areas, they quit harvesting even healthy populations of chili pepper and other rockfish, which live in the rocky bottoms among the depleted lingcod. But the painful measures paid off. A new assessment shows lingcod has exceeded its

recovery target three years ahead of schedule, with other rockfish also improved.

"These fish are voracious carnivores, apex predators like lions or tigers," said Fujita. "Top predators depend on everything below. So if they're healthy, that's often a good indicator of health throughout the food web."



facebooks.com

The lingcod, which can grow to 80 pounds, is prized for its taste, not its looks.

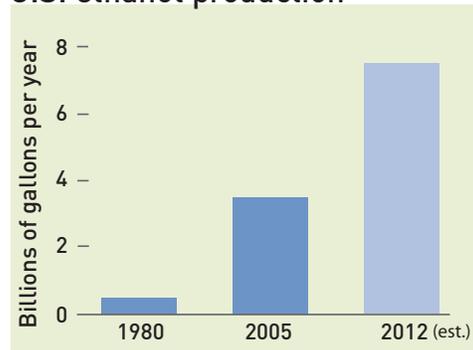
Can the Midwest replace the Mideast?

AS BIOFUELS BECOME AMERICA'S HOTTEST NEW ENERGY SOURCE, A CAMPAIGN BEGINS TO ENSURE THEY BENEFIT THE ENVIRONMENT

The 255 residents of Lakota, IA, had to scrimp to finance a new plant to turn local corn into fuel. Last year, those farmers reaped \$5 million in dividends, a 25% return.

Today's hottest domestic energy market doesn't involve derricks and black gold, but corn stalks, manure, even palm-oil waste from making M&Ms. *The Wall Street Journal* calls the biofuels rush "the biggest investment movement in rural America in decades." While new oil refineries go begging for a home, Midwestern towns welcome ethanol plants, hoping for new jobs and markets for their crops. The jump in oil prices helped, pushing ethanol's price up 40% in two years. So did the 2005 Energy Bill, which mandates annual production of 7.5 billion gallons of biofuels by 2012. Though focused on conventional grain ethanol, the bill also credits "cellulosic ethanol" made from agricultural wastes, biodiesel made from fats and oils, and biogases, like the methane from feedlots that can be captured and burned.

U.S. ethanol production



Production has increased sevenfold since 1980 but remains a "drop in the bucket" compared to the 300 billion gallons of oil the U.S. consumes each year.

A growing number of cars on the road can run on gasoline mixed with ethanol. Advocates say biofuels will reduce dependence on foreign oil: one consortium of growers, the Agricultural Working Group, has called on farmers to meet 25% of America's energy needs by 2025. Biofuels also are touted as a way to reduce petroleum emissions that contribute to global warming.

NOT ALL BIOFUELS ARE CREATED EQUAL

But—and this is a big one—the emissions reductions from biofuels vary enormously, depending on how crops are grown and how the fuel is made. Do farmers forgo plowing to keep carbon in the soil? Do they cut back on nitrogen fertilizers, which release a potent warming gas? Is the fuel made from the grain or, more efficiently, from "stover"—the stalks and leaves?

As yet, the market takes no account of those questions. "The existing market sends no signal to these fuels that there's value in being low-carbon or low-energy input," says Environmental Defense policy analyst Sara Hessenflow Harper. "You get tax credits for ethanol no matter how it's produced."

To build the right market incentives, Environmental Defense has begun working with commodities groups and farmers to develop a low-carbon certification for biofuels. Ultimately, when national carbon caps are in place, certified ethanol will command a premium price.



Gibson Photography

Homeland security: Turning crops into fuel brings money to struggling American farmers and reduces dependence on foreign oil.

Even before that, the regulations we helped develop in California—requiring automakers to cut global warming pollution 30%—should get the market rolling.

The potential for carbon reduction is immense: Turning the 400 million tons of U.S. agricultural wastes currently available annually into cellulosic ethanol would provide 35 billion gallons of fuel, equivalent to about two-thirds of the petroleum that we now import from the Middle East—and cut America's global warming pollution 5%.

Many of the technologies needed to make low-carbon ethanol already exist. In

Turning our agricultural wastes into ethanol could supply more than half the energy we now import from the Middle East.

pilot projects in Kansas, Louisiana and the Pacific Northwest, we're helping no-till farmers measure and sell the carbon they keep in the ground. In New York, we're helping dairy farmers do the same with captured methane: By burning the gas for power, they cut its global warming impact 18-fold.

And new technologies are emerging.

A Canadian company using a fungal digestive enzyme to break cellulose into sugar predicts its \$300 million refinery will make ethanol for \$1 a gallon. E3 Biofuels of Omaha has created a closed loop: an anaerobic digester converts manure into methane gas, which powers an ethanol plant; the leftover mash is fed to the cattle.

As a key step toward reaping the potential of such innovations, our chief scientist Dr. William Chameides has developed a balance sheet comparing the global warming impact of various biofuels.

In the tradition of Environmental Defense, we are not trying to guess the best technology in advance, but setting an ambitious environmental performance standard and letting the market find the cheapest and best way to meet the goal.

Lock in a fixed return with a charitable gift annuity



Receive a fixed amount of income for life through a charitable gift annuity with Environmental Defense. You can donate cash, securities or real estate and we promise to pay you a fixed sum for the rest of your life. A charitable gift annuity provides you with excellent tax and income benefits and will enable us to continue working to curb global warming.

For additional information, please contact Anne Doyle, Environmental Defense, 257 Park Avenue South, New York, NY 10010; 877-677-7397; ospreys@environmentaldefense.org.

How to grow fuel that's good for the planet

Burning a plant to create fuel adds no net carbon to the atmosphere. The amount released is equal to the amount absorbed during photosynthesis. What tips the balance is the energy used in farming—for plows and harvesters, for the manufacturing of pesticides and fertilizer—and in

conversion and transportation. Environmental Defense is working to improve land-use and energy-production practices to right that balance. We also want to ensure that farmers can earn money by cutting carbon. Here's how:



Sustainable farming:

No-till farming stores carbon in the soil. Cutting back on fertilizers reduces nitrous oxide, a potent greenhouse gas. And leaving just 40% of stalks and leaves in the field renourishes soils.

Ecosystem protection: Ecologically vulnerable lands should not be used for bioenergy crops. Incentives should be increased for planting forests, which provides the greatest emissions reductions per acre and filters air and water.



Efficient conversion:

Small scale, widely distributed bio-refineries reduce transportation costs and energy use. So does the use of waste products: Lignin, the part of a plant that can't be converted to sugar, can be burned to power the biorefinery; the leftover mash can be fed to livestock.



Choosing the right crop: Making ethanol from corn requires lots of energy and fertilizers, yielding small net reductions in emissions. Bigger gains come from using fast-growing crops like switchgrass. The most immediate gains will come from converting wood chips and other wastes.



Americans speak out for endangered wildlife

The Senate may take up a bill in coming weeks that seeks to dismantle the Endangered Species Act, despite the law's success in aiding the recovery of hundreds of species like the grey wolf, grizzly bear and bald eagle. Last fall, by a narrow margin, the House passed a bill championed by Rep. Richard Pombo (R-CA) that would repeal basic safeguards. It would also force the government to pay developers for not building on habitat used by endangered species.

Editorials across the country decried the action. With the Senate soon to debate these disastrous changes, we asked our members to share their own encounters with rare wildlife and urge the Senate to maintain protections. We received over 1,000 inspirational stories from across America, each different and passionate in its own way. Here are a few:

When I was 17, I was driving with a friend along the Snake River on the Oregon-Idaho border. A shadow passed over the car, and we looked up. An enormous bald eagle was flying ten feet above us. Its wingspan was the width of my car, and it was clutching a fish in its claws.



Humpback whales are celebrated for their mysterious songs.

How could we let the very symbol of our country—the bald eagle—even get close to being a threatened species? How could we choose to let any animal be lost to the world and future generations?

Diane Zipper, Portland, OR

Last year, my fiancée and I went camping near Horseshoe Bay, FL. What looked like a small deer came walking toward us on the trail. We froze and checked out the critter through the binoculars, only to see we were encountering a Florida panther! It was one of the most exhilarating moments of our lives.

**Joshua Stoltz,
Hallandale Beach, FL**

Twice in the last year I have been privileged to witness a peregrine falcon devour a meal right in my own yard. It was an awesome sight I will never forget, and I am grateful for the law that brought this species back. You wouldn't doubt its worth if you'd seen my son's awed expression.

Trudy Loy, Amherst, NH

While I was in Hawaii, a humpback whale surfaced right next to



Rare encounter: About 50 Florida panthers remain.

our boat and I found myself staring into its eye ... about five feet away! We looked at each other for a long moment and then the whale quietly submerged and swam away.

**Ina Mitchell,
Woodland Hills, CA**

YOU CAN HELP!

Do you have a story of an encounter with rare wildlife that you'd like to share? Please send it to us. We will make sure the U.S. Senate gets your message in support of continued wildlife protection! See our address on page 2, or visit www.environmentaldefense.org/action.

What they're saying about Environmental Defense

"Environmental Defense is a highly respected organization offering technical solutions for industry's environmental challenges."

—August 2005 report on nanotechnology by Innovent, a leading financial firm that analyzes corporate environmental performance.



Solutions

Environmental Defense
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