

A close-up portrait of a young Kayapo person, likely a child, with traditional face paint. The paint consists of multiple parallel, curved lines on the cheeks and forehead. The person has dark hair and is looking slightly to the right. The background is a soft, out-of-focus green, suggesting a forest setting.

## Guardians of the Amazon

At home in the forest, Brazil's Kayapo are key actors in the fight against global climate change.

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**6** West Virginia's chemical disaster spurs reform

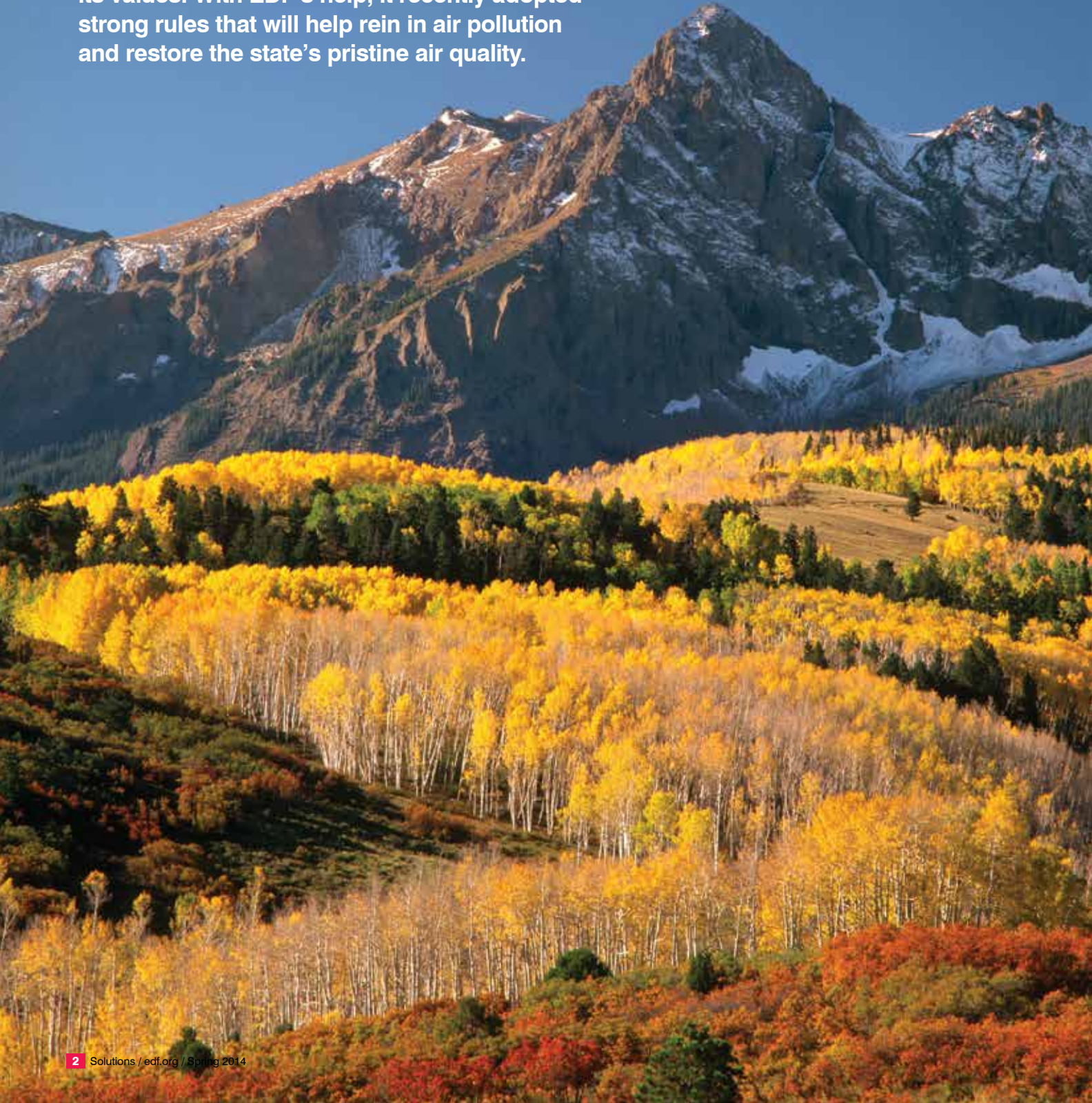
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# Colorado clear

Once renowned for its clean air, Colorado is grappling with pollution from its booming oil and gas industry. But the state isn't abandoning its values. With EDF's help, it recently adopted strong rules that will help rein in air pollution and restore the state's pristine air quality.



# Two steps forward on climate action



**T**O READ THE NEWSPAPERS, YOU might think that little headway is being made in the fight against climate change, especially since Congress remains deadlocked. But in the real world, EDF has made significant progress on two key issues—reducing methane and slowing deforestation.

Last fall, Colorado Governor John Hickenlooper convened a roundtable process that paid off. In February, the state adopted air pollution rules that were based on a proposal crafted by EDF and the state's three biggest oil-and-gas producers. The rules will cut volatile organic air pollution that causes smog and methane emissions by well over 100,000 tons each year. They'll also include the nation's first-ever direct controls on methane.

That's important because one third of the warming in the next couple of decades due to current emissions will be from short-lived greenhouse gases like methane. We now have a clear path forward to protecting Earth's climate from this powerful greenhouse gas. It's an extremely low-cost path: An EDF study reveals that 40% of methane leaks could be eliminated within five years, for under a penny per thousand cubic feet of natural gas produced (*see story, p. 15*).

Meanwhile, deforestation in Brazil, a major source of carbon emissions, has declined by more than 40% since 2005, even as the Brazilian economy has grown. That's a turnaround few would have bet on.

How did it happen? The credit goes to the Brazilian government—and to indigenous leaders like Megaron Txucarramae of the Kayapo, who with EDF's help is successfully defending his people's forest (*see story, p. 8*).

To sustain this progress, we need to hook up carbon markets in California and Europe with countries that have the forests we need to preserve, and then let the market find the cheapest way to cut pollution.

What these two achievements have in common is that they use economics as a lever and both of them engaged many stakeholders in a cooperative process.

Are these actions enough? Of course not. That's why EDF has teamed up with The Nature Conservancy to identify the biggest steps we can take to achieve significant, measurable reductions in carbon emissions between now and 2020.

Our goals are ambitious, but the recent accomplishments give me hope that we can turn the corner on climate pollution.

Climate change affects all of us—and everyone, from an indigenous chief to a Colorado governor to an EDF member, can have a hand in fixing it.



Finding the ways that work

Environmental Defense Fund's mission is to preserve the natural systems on which all life depends. Guided by science and economics, we find practical and lasting solutions to the most serious environmental problems.

Our work is made possible by the support of our members.



### On the cover:

In an inspiring reversal of recent history, indigenous tribes are successfully defending their Amazon forest lands against development. With deforestation driving

about 15% of global climate change, EDF has signed on to help.

On page 8, Tim Connor reports on EDF's progress designing a cap-and-trade carbon market in California that can compensate Brazilian and Mexican states that halt deforestation. The market is a model for protection of threatened forests elsewhere.

Cover photo: Christina Mittermeier

## Solutions

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# FIELD NOTES

## Crackdown on coal: The biggest climate decision of the year



PHOTO EDIT

Coal plants are the nation's biggest source of carbon pollution.

President Obama is making good on his pledge to act on greenhouse gas emissions "with or without Congress." The centerpiece of his climate plan is a pair of tough EPA standards to slash carbon dioxide emissions from America's new and existing power plants. Proposed rules for new plants were published in January—and rules for the nation's 600 existing fossil fuel-fired plants are expected in June.

"Fossil fuel-burning power plants are the single largest source of carbon pollution, and right now there are no national limits on how much of that pollution they can put

into our air," says EDF attorney Megan Ceronsky. In 2012, coal plants caused 74% of carbon pollution from the power sector, but produced just 37% of electricity.

EDF played a key role in a string of court cases, including at the Supreme Court, that affirmed EPA's authority to regulate carbon.

EDF also supported the administration's commitment to enact tough new fuel standards for heavy-duty trucks, which generate 20% of the transportation sector's carbon pollution. More than 100,000 EDF members have spoken out in favor of the president's climate leadership.



AP IMAGES

**71,000  
EDF members**

**joined an online town hall with EPA administrator Gina McCarthy**

"Without groups like EDF, our ability to really move our mission forward would simply not be as possible as it is today," said McCarthy, warning that EPA's climate agenda is under threat.

**>>> LISTEN >>>** You can hear the tele-town hall at [edf.org/McCarthy](http://edf.org/McCarthy).



SOURCE: GREENBERG QUINLAN ROSNER RESEARCH

## IN THE COURTS

EPA was correctly interpreting the Clean Air Act when it determined that large new or rebuilt industrial sources must control greenhouse gases. That was the agency's argument before the U.S. Supreme Court in late February, when it was challenged by industry and a dozen states, led by Texas. EDF is a party to the case.

EDF has taken EPA's side before the U.S. Court of Appeals for the D.C. Circuit to defend the agency's rules on soot from an attack by business and industry groups.

Decisions in both cases are expected in July.

## Michelle Obama's special guest

EDF Climate Corps alumnus Tyrone Davis had the best seat in the House chamber for the State of the Union speech in January. A guest of First Lady Michelle Obama, he was seated near her in the gallery.

Legally blind since the age of nine, Davis served in EDF Climate Corps in 2009, and after our training he helped historically black Elizabeth City State University in North Carolina cut greenhouse gas emissions through lighting, heating and cooling, and window upgrades.

School administrators were so impressed by Davis' work that just one month after his fellowship ended they made sustainability a core



Tyrone Davis, EDF energy saver

component of the university's mission.

"We were honored that the First Lady chose him as a guest on this important occasion, said EDF President Fred Krupp.

## Climate TV series showcases EDF

*Years of Living Dangerously*, an eight-part series on global climate change, premieres on Showtime Sunday, April 13 at 10:00 p.m. Eastern Time and runs weekly through June. This series shines a light on EDF Climate Corps and our Clean Energy Program, crucial tools in the fight against climate change.

## THE CHANGING PLANET

The West's burn season has grown 50% longer in the past 40 years.



CLIMATE CENTRAL

## Climate denial funding goes underground



The first comprehensive study of who's funding the climate denial movement reveals a dramatic increase in dark money and concealed funding. Since 2003, leading supporters of climate denial such as Koch Industries have sharply reduced publicly traceable contributions.

Now they are using pass-through foundations like Donors Trust to hide their contributions, and only a small fraction can be accounted for in public records.

"Powerful funders are supporting the campaign to deny scientific findings about global warming," said the study's principal author, Dr. Robert Brulle of Drexel University. "American voters deserve to know who is behind these efforts."

## How EDF is helping fliers invest in low-carbon rural families



GETTY IMAGES

Hundreds of thousands of poor families will benefit.

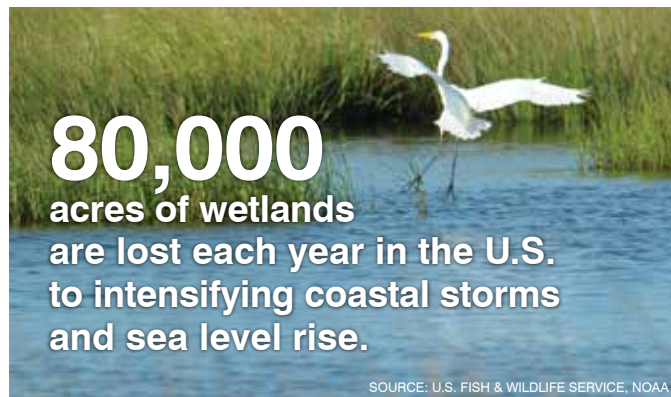
Passengers on India's largest airline can now partially offset the carbon footprint of their flights by investing in greenhouse gas reductions generated by poor rural Indian families participating in EDF-sponsored demonstration projects. The pre-checked box travelers see when they book an IndiGo flight is expected to funnel significant revenue to 300,000 families in six states.

EDF helped broker the deal between IndiGo and the Fair Climate Network, a coalition of grassroots Indian groups. Our low-carbon demonstration projects help

families adopt climate-friendly farming practices and innovations such as biodigesters that convert manure to biogas for cookstoves.

Finding a buyer for the farmers' emissions reductions is an important breakthrough in demonstrating the promise of low-carbon rural economic development.

"This is an Indian company buying carbon offsets generated in India," says Richie Ahuja of EDF's India program. "Families can now generate income, breathe cleaner air at home, and cut greenhouse gas emissions."



DOUG KASPERIN

**80,000** acres of wetlands are lost each year in the U.S. to intensifying coastal storms and sea level rise.

SOURCE: U.S. FISH & WILDLIFE SERVICE, NOAA

**BY THE NUMBERS**  
EDF MEMBERS MADE A DIFFERENCE IN 2013:

**50,000**

helped secure \$2.5 billion for Gulf Coast restoration

**35,000**

stood up to coal lobby attacks

**40,000**

supported EPA's proposed nationwide carbon pollution standards for new fossil fuel power plants

**1.75 million**

comments and emails in 2013 holding our officials accountable

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# Learning from a spill that ravaged a town

By Charles Miller

When a mysterious chemical seeped into a West Virginia river and exposed the nation's failed chemical safety laws, EDF swung into action.

“I CRIED MYSELF TO SLEEP. I WAS BOTH angry and scared.” That’s how Sarah Bergstrom, a 29-year-old nurse in Charleston, WV, reacted when she learned that an industrial chemical had contaminated her drinking water. Bergstrom, who was four months pregnant, found herself thinking: “This baby that we’ve wanted for so long—have I done something that could have harmed her?”

In early January, 10,000 gallons of an industrial chemical used to process or “wash” coal entered the Elk River just upstream from the intake of a drinking water treatment plant in Charleston. The chemical was sucked into the plant and distributed through thousands of miles of pipe to homes and businesses in nine counties. Three hundred thousand people were left without drinking water for days, and at least 169 were hospitalized.

The disaster was made worse when officials could find virtually no hazard data on the chemical, 4-methylcyclohexane methanol (MCHM), even though it has been in widespread use by the coal industry for many years and was stored in aging tanks beside the river.

The safety data gap illustrated the failure of the nation’s 1976 chemical safety law, the Toxic Substances Control Act



No one knew the risks of the chemical. Officials were “winging it.”

(TSCA), and demonstrated why reform is so desperately needed.

EDF has been working to reform the failed law for years, and our scientist Richard Denison emerged as a key resource for beleaguered Charleston residents looking for answers.

“MCHM was one of 62,000 chemicals already in use when that law was passed four decades ago,” said Dr. Denison. “All these chemicals were grandfathered in and never required to be tested for their health effects on people.”

## Bottled water and shuttered businesses

When officials asserted that the water was again safe to drink, Denison warned that the government’s calculation was based on a single inadequate study by the chemical’s manufacturer, never published, and that it included dangerous leaps of reasoning.

“In their rush to set a ‘safe’ level of the chemical in drinking water, officials at the Centers for Disease Control (CDC) relied on poor and incomplete information about toxicity,” Denison explained.

“In view of the extremely limited data available, CDC should have refused to

recommend a ‘safe’ level.”

Denison, who has testified repeatedly in Congress on the need to overhaul the nation’s chemical safety law, criticized government safety protocols. Officials, he charged, were “winging it” when they relied on a study for MCHM that:

- Used a protocol dating back to 1981 that has been significantly upgraded twice to correct deficiencies.
- Only assessed the chemical’s toxicity by oral ingestion, neglecting to examine exposure through showering or bathing.
- Tested only one component of the mixture of chemicals that actually spilled.

Moreover, in the days after the chemical was detected in the water supply, officials failed to conduct any sampling of taps in residents’ homes, according to Denison.

Two days after Denison’s criticism, state officials issued an advisory that pregnant women should not drink the water. And then, nearly two weeks after the spill, the tank owner revealed that another coal-processing chemical had been



©LOPHOTO/IST

released into the water supply along with MCHM—a mixture of chemicals known as PPH.

Said Denison: “What’s unacceptable is that no one—not local officials, not the company that owns the storage tank, not the federal government—can say anything even close to definitive about what risk these chemicals pose to people, even in the short-term, let alone over time. And that’s where the failures of America’s chemical safety law come into sharp focus.”

EDF is working to replace TSCA with a much stronger law. A bill before Congress would make some key fixes, requiring safety reviews for all chemicals currently in use. It also requires that EPA declare a new chemical likely to be safe before it enters the market.

EDF is working closely with the bill’s sponsors to make sure it protects vulnerable populations and ensures EPA’s testing authority.

Meanwhile, West Virginia has learned a painful lesson.

“I don’t think we’re going to have too many people running in 2014 who are going to be talking about anti-regulation,” Dr. Marybeth Beller, a political scientist, told *The New York Times*. ■

## MEMBER SPOTLIGHT

### Outrage fuels one woman’s demand for clean water

Like many EDF members, Stephanie Barko was appalled by the toxic chemical spill that poisoned the drinking water in a West Virginia community this winter. Living in drought-stricken Texas, she and her partner Jim Stoneking are painfully aware of the value of water. Three of their friends lost their homes in recent wildfires, and last year she put out drinking water to keep wildlife alive.

“To me, the West Virginia chemical spill exposes a hole in the regulatory framework, a weakness that we need to fix,” says Barko. “You can’t have industry policing itself. We need regulations that stick. The situation is a microcosm of what we’re dealing with all over the country. In some places, you’re lucky to get water at all, and when you have it, it’s contaminated? It’s hard to believe this is happening in America.”

Barko, a literary publicist, has prompted the authors and bloggers she knows to fight pollution through Moms Clean Air Force, an EDF-led campaign that unites mothers from around the country to stand up against polluters.

“Since we built our house, there’s been a tidal shift in how people think of water,” she says. “When I went to buy new appliances recently, it reminded me of how



**“It’s hard to believe this is happening in America,” says Stephanie Barko.**

ranching has changed in Texas. The goals are now to conserve water and energy. A farmer’s prime concern is no longer crop production, but preserving springs.”

In 1997, Barko included EDF in her estate plans. “It’s not fair to leave a mess for the kids to clean up,” she says.

**>>> JOIN >>>** Help fight for clean air and water at [momscleanairforce.org](http://momscleanairforce.org)

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# Protecting the rainforest

By [Tim Connor](#)



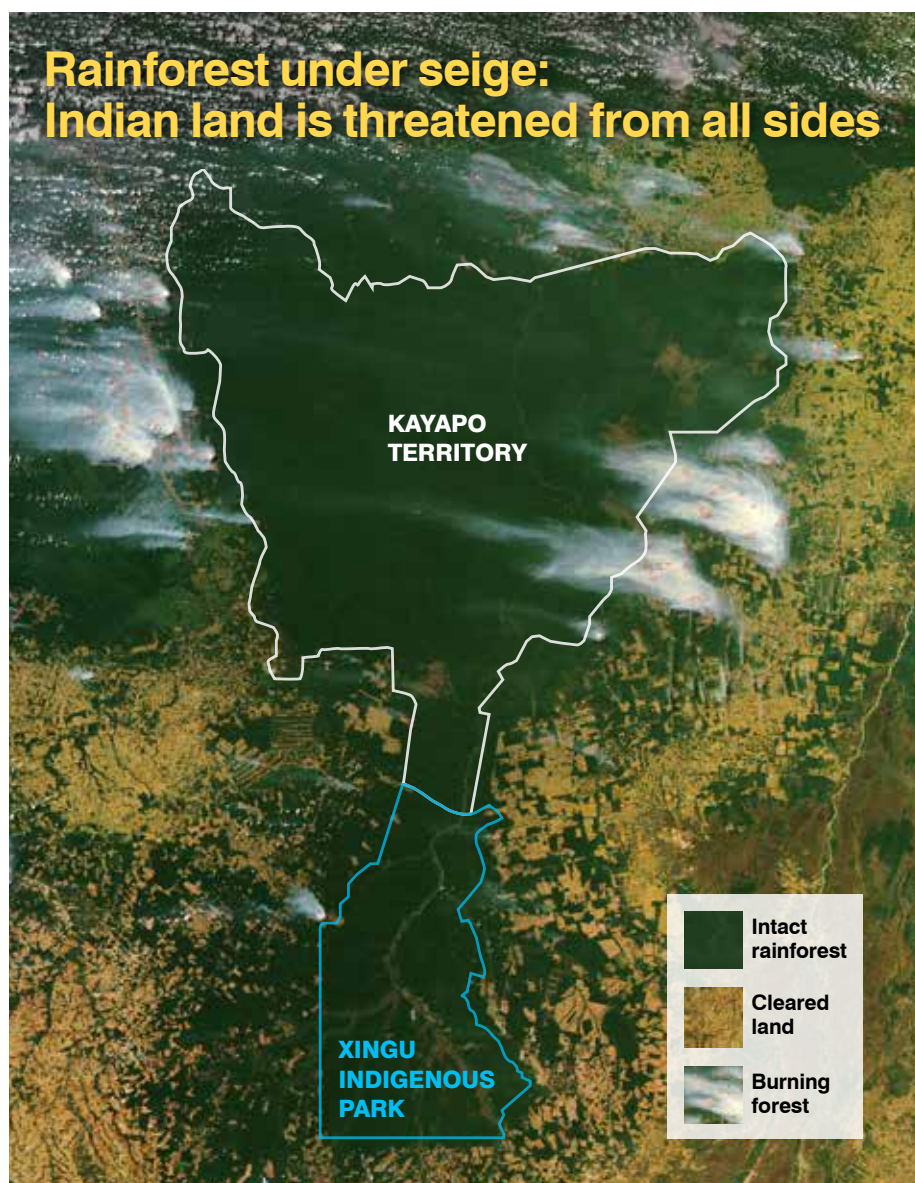
Working together, environmentalists and Brazilian indigenous tribes intend to save the Amazon forest—and buy time for the rest of the world.

**F**ROM A SATELLITE ORBITING above Brazil's southeastern Amazon forest, the camera views are stunning. Spread out far below, a vast central tract of deep green represents one of the largest remaining expanses of undisturbed tropical forest in the world. This tract, roughly the size of the United Kingdom, is the home of Brazil's Kayapo Indians and 25 other indigenous tribes. But encircling and pressing in on the green forest from all sides is a ragged patchwork of tans and browns, overlaid with huge clouds of grey smoke and dotted with bright orange pinpricks of fire. This is the rainforest, being systematically destroyed.

The satellite's view—living vs. dead forest—reveals an on-the-ground struggle that could affect daily lives all over the world. On one side are the indigenous people who have lived in the Amazon forest for millennia, supported by human rights advocates and environmental organizations, including EDF. This group sees the forest not only as Brazil's Amerindian homeland but also as a priceless storehouse of biological and cultural diversity and, increasingly, a vital bulwark against global climate change.

On the other side of the struggle are forces that see the forest as a resource-rich frontier to be logged, mined and cleared, then settled by outsiders. History suggests that such a 19th-century-American-style “conquest of the wilderness” would inevitably be accompanied by massive destruction of biodiversity and abuse of human rights.

Scientific consensus tells us it would also trigger faster and more extreme climate change. Deforestation is already responsible for about 15% of annual greenhouse gas emissions—more than the total amount of carbon emitted by all the cars, trucks, buses and planes on the planet. To release into the atmosphere the carbon still sequestered in standing tropical forests (about 250 billion tons) would be catastrophic.



### Stopping the destruction

Today a plan that could stop destruction of tropical forests is beginning to take shape. It features a wide cast of characters—from tenacious indigenous tribes to scientists, businesspeople, diplomats and ordinary voters in California. EDF has played an important role from the beginning.

In the 1980s, Steve Schwartzman, then a young anthropologist and now EDF's director of tropical forest policy, lived with a Brazilian indigenous tribe, the Panará, and learned their language. He also got to know the neighboring Kayapo, a much larger tribe known for their prowess as warriors. Today, supported by EDF and others, the Kayapo, Panará and other indigenous groups in the Xingu River basin have established themselves as the

first line of defense against would-be invaders of Amerindian land. Making use of donated aerial surveillance, sophisticated communications, trucks, boats and other technology, they've turned back intruders again and again. The result, says Schwartzman: “Where Indian lands begin, deforestation ends.”

But the future is unclear. Brazil had slowed its rate of deforestation by 70% since 2005, but last year the country's emissions began to rise again—by a worrying 30%. Meanwhile, construction has started on major roads, canals and two dams at the \$14 billion Belo Monte hydroelectric project on the Xingu River. This is a relatively scaled-down revival of an even more massive project the Indians and their allies managed to defeat in the 1990s.



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**Why have the Kayapo been able to hold onto their land when so many other tribes have failed? They've adapted to change without losing a warrior-like commitment to their forest.**

The Kayapo chief, Megaron Txucarramae, helped lead his people's resistance during that fight. Megaron has a deeply lined face that moves easily between steely resolve and a sweet smile. Speaking at EDF's New York headquarters in February as part of a four-city American-Canadian tour, he warns that continuing pressure on the forest is inevitable. "This will be a long uphill struggle," he adds. "The outsiders who want to get rich off our land are not going away. We need help."

EDF has helped push the fate of the Kayapo and the rainforest onto the international stage. In January, *National*

**Deforestation is responsible for about 15% of greenhouse gases. That's more than the total amount emitted by all the cars, trucks, buses and planes on the planet.**

*Geographic* featured the tribe in a cover story called "Kayapo Courage."

Megaron makes it clear that the Kayapo want others to benefit too. "In the future, this forest will be needed by my grandchildren and great grandchildren. It may be that other people—everyone—will need it," he says. "Today my people are alarmed by changes in the weather. Sometimes it's very dry; the sun is too hot; the rivers flood. Or it rains out of season; there are storms that knock

down the trees. So we want to preserve the forest not only for us Kayapo, but for other people who may come after."

### How EDF is helping

To stop the demolition of forests, will justice and self-preservation—backed by laws—be enough? Probably not, says Schwartzman. "We must make the forests worth more alive than dead," he insists. "If they are worth more as cattle ranches or soy farms, forests will disappear."

Schwartzman learned this basic fact in the western Amazonian state of Acre during the 1980s working with legendary union organizer Chico Mendes—who was later assassinated for his efforts. Rubber tappers, descended from families that had migrated into Acre's forests to harvest latex from rubber trees during the country's rubber booms of the 19th and 20th centuries, were being displaced by loggers and miners intent on destroying the forest to make quick fortunes.

The rubber tappers, a sort of "forest peasantry" who lived by hunting, fishing, subsistence gardening and a small cash economy, organized to protect their land. Eventually, they proposed creation of extractive reserves—protected forest areas in which local people were granted secure land tenure to make sustainable livings from Brazil nuts, native honey and other saleable products that could be produced in the forest. Today, dozens of reserves still operate in Brazil.

Schwartzman and others realized that indigenous tribes like the Kayapo might consolidate control of their land in the same way, by creating extractive reserve-type economies. But the indigenous forest areas are many times larger than the

**“We must make the forests worth more alive than dead, or they will disappear.”**

—Dr. Stephan Schwartzman  
EDF's director of tropical forest policy

reserves, and today's destroyers of tropical forests boast very deep pockets. Saving these lands, EDF realized, would require much larger financial incentives. When the first definitive studies came out in the 1990s linking carbon dioxide from deforestation to climate change, EDF understood that such an incentive could be contained in the forest itself.

If Amazon states agreed to halt deforestation in a verifiable way, we reasoned, they should get paid.

As the first environmental group to incorporate economics into its strategic thinking, EDF was comfortable with the idea of creating financial value for a forest. During lengthy UN negotiations on a treaty to fight climate change, EDF, along with Brazil's Amazon Environmental Research Institute (IPAM) and Instituto Socioambiental (ISA) developed the concept, later adopted in the UN Framework Convention on Climate Change as Reducing Emissions from Deforestation and Forest Degradation (REDD). The agreement systematized the process of valuing forest carbon for international trades.

But who would be the first to ante up? EDF saw an opportunity in California. As co-authors of that state's 2006 Global Warming Solutions Act—which mandates reduction of greenhouse gases to 1990



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CHRISTINA MITTERMEIER

levels by 2020—EDF proposed that declining emissions from tropical forests be included as offsets in the carbon market that was set up under the law. These offsets—verified reductions in deforestation—are expected to soon be incorporated into California’s market.

### A tribal chief visits California

On his visit to the United States, Kayapo leader Megaron met with California legislators and government officials. He was asked about the partnership. “If EDF makes it possible to get carbon credits for our forest—that would be an important way of helping us,” he said.

It would also help the rest of the world. As *National Geographic* put it: “It is one of the richest ironies of the Amazon that the supposedly civilized outsiders who spent five centuries evangelizing, exploiting and exterminating aboriginal people are now turning to those first inhabitants to save ecosystems recognized as critical to the health of the planet—to defend essential tracts of undeveloped land from the developed world’s insatiable appetites.”

The Kayapo have learned fast. They want modernity—health care, security and education—and they don’t regard the alien culture outside their forest as all bad. In fact, they send their young people out of the forest to attend university, and they incorporate everything from flashlights to video cameras to satellite imagery into their world.

But they don’t want to lose their identity. When Megaron was asked what has given his people the strength to go on fighting against huge odds, he thought for a moment and his face grew stern.

“Our strength comes from our culture—our traditions and rituals,” he said. “And our culture comes directly from our forest. So, you see, our strength really comes from the forest.”

### What’s next?

By passing the REDD system for valuing forest carbon at the most recent UN climate meeting in Warsaw, Poland, the world broke a logjam that had long stymied agreement between developed countries—whose industrial economies had largely caused climate change—and developing countries—who felt developed countries should bear that historic burden alone. Now, with a carbon market up and running in California, both sides

can win. California industries will pay market-based prices to meet their responsibility to cut climate pollution. States with large tracts of forest like Chiapas in Mexico and Acre in Brazil will receive compensation for not exploiting them. Climate change will be reduced.

This is an idea that can be adapted to keep threatened tropical forests standing anywhere in the world.

“Tropical forests offer one of the biggest immediate opportunities the world has to reduce greenhouse gas emissions,” says EDF vice president for international climate Nathaniel Keohane. “But it’s only going to happen if there’s an economic incentive to protect places like the Amazon.” ■



ADAM PANTOZZI

**Megaron: “Before the white men, we were always fighting against other tribes. Not anymore. We stopped hitting each other on the head and united against a bigger threat.”**

»»TAKE ACTION»» Learn more about the Kayapo’s defense of the rainforest. Find out how you can help. [edf.org/kayapo](http://edf.org/kayapo)

## Did you hear the one about the serious environmentalist?



**Keith Gaby**, based in Washington, DC, is EDF's climate communications director.

Environmentalists don't get the joke. The situation is too dire—extreme weather, toxins in our food, species dying off—for this to be a laughing matter. At least, that's our reputation: serious, earnest, humorless.

The reputation is partly deserved. We see huge problems facing our world. Human lives are at stake. When you focus on such issues, it's easy to take yourself too seriously.

It's a condition you find with activists across the ideological spectrum who feel they're in an uphill struggle to do what they think is right. Tea Partiers, Wall Street Occupiers and both sides of the abortion debate often come off as stern and un-amused. Or they're happy to laugh, as long as the joke is on their opponents.



It's good to take your work seriously. But it becomes a problem when you imply that your mission is more important than what's going on in other people's lives. Happily, this reputation is not the full picture. Spend time with environmental activists and you'll find most of us don't fit the stereotype. We probably tell more jokes about ourselves than anyone else. (Q: How do electric car owners drive? A: One hand on the wheel, the other patting themselves on the back.)

But the reality is, environmentalists have a hard time reaching the people we need to in order to accomplish our goals. We need to fix that perception. A good place to start would be showing that we can take a joke. It's amazing how taking yourself less seriously can open up conversations.

**>>> READ FULL STORY >>>** [edf.org/NoLaughingMatter](http://edf.org/NoLaughingMatter)

## Keeping a watchful eye on Walmart



**Michelle Harvey**, based in Bentonville, AR, is a senior manager in EDF's Corporate Partnerships Program.

I spend a lot of time helping (and sometimes nudging) the world's largest retailer to become a greener company. Sometimes my work leads to a happy outcome. That was the case recently, when Walmart sent a letter to hundreds of manufacturers telling them the clock was now ticking on phasing out certain toxic chemicals in their products. Suppliers now have to deliver the goods. EDF will be keeping a close eye on the progress.

With our help, Walmart spent years developing the policy and figuring out how to implement it across a sprawling global supply chain. The solution had to be transparent and set an ambitious goal for suppliers. The new policy covers products sold in Walmart and Sam's Club stores. It includes cosmetics and skin care, baby care products, pet supplies and cleaning products. By this time next year, suppliers will have to publicly disclose each product's ingredients.

Make no mistake: Walmart is not trying to become your local co-op. Its chemicals policy is designed for a mainstream market, with the company's relentless emphasis on low prices in mind.

That's why this is such a big deal: no one should have to choose between a safe product and one they can afford. Manufacturers should not be selling more toxic versions of their products when safer options are available.

While there may be some grumbles, the incentives to comply are considerable. We think most companies will listen when their largest customer speaks.

**>>> READ FULL STORY >>>** [edf.org/SaferProducts](http://edf.org/SaferProducts)

### Conserving water on the once mighty Colorado



Drought has gripped the Colorado River basin. Find out how sending more water to the environment can ease the crisis. [edf.org/COriver](http://edf.org/COriver)

### The truth about European emissions trading



How accurate are press reports about flaws in the EU's carbon markets? [edf.org/EUcarbon](http://edf.org/EUcarbon)

### EDF Voices blog

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# Bringing climate change home



Climatologist Heidi Cullen: “We need to stop treating this as a partisan issue, which it is not.”

## A high-profile scientist explains weird weather

**W**HEN MUCH OF THE UNITED States was locked in a deep freeze this winter, climate deniers were quick to exploit the cold as “proof” that global warming isn’t reality—even as Alaska, Europe and Australia experienced record high temperatures.

“You have to look at the big picture,” says Dr. Heidi Cullen, chief climatologist for Climate Central. “When we talk about climate, we’re talking about the average of weather over space and time.” Globally, this January was the fourth hottest on record.

For Cullen, who served as The Weather Channel’s first on-air climate expert, clearing up misunderstandings about global warming is part of the job. She’s on a mission to inform the public about the reality of climate change.

Recently, Cullen partnered with EDF at a symposium of more than 100 Colorado business leaders—from ranchers to ski operators—who discussed the profound ways that changing weather patterns are affecting their bottom line.

Participants from business sectors often skeptical of global warming acknowledged that the climate is changing and agreed on the need to take action. “It’s not something I ever thought that I’d engage in,” explained one rancher, “but I will say, the last three years the change is

noticeable in Colorado, in the number of wildfires, the flooding and the drought.”

“That event in Denver was exciting,” says Cullen. “To make progress on climate change, we need to make the issue relevant to people in their own backyards. Because climate change is ultimately a risk management issue, scientists have to help stakeholders prepare for risks. For example, we expect heat waves to become more frequent and more intense. This has huge implications for water resources and agriculture.”

Just ask residents of Colorado.

The state has been scorched in recent years by devastating wildfires. Last year’s fire near Colorado Springs destroyed almost 500 homes. Many scientists believe climate change has been a factor.

### A rational voice

Cullen brings level-headedness and expertise to the debate, along with an understanding of human psychology.

Recent research shows that people surveyed in a cold room are more inclined to say global warming is bunk, compared with those surveyed in a hot room, even though they know the temperature is regulated by a thermostat.

How does one overcome these biases? “I think part of our responsibility as scientists is to help people understand the research,” says Cullen. “We need to stop treating this as a partisan issue, which it is not, and start working on it.”

Fortunately, scientists have sophisticated thermometers scattered all over the globe—on land, aboard boats, attached to satellites—that tell a pretty consistent story: the planet is warming. Scientists believe that humans are responsible.

“The wait-and-see approach is incredibly risky,” Cullen warns. “There’s a time lag between what we do—and what we see in our climate and weather.”

She remains optimistic, however. “The pathway is there,” she says. “We need strong leadership and a combination of giving elected officials permission to act and demanding a rational energy policy.”



People pay attention when you explain climate change in terms of local impacts.

# New drilling rules will protect Wyoming's water



GETTY IMAGES

**E**NERGY DEVELOPMENT IS THE lifeblood of Wyoming's booming economy. "We've got a diversified economy," jokes Sweetwater County businessman Don Hartley. "We've got both oil and gas."

Unfettered oil and gas development comes with a cost, however. For years, the small farming community of Pavillion, in the western part of the state, has been the site of fierce disputes over contaminated groundwater. An EPA probe linking the polluted drinking water to drilling was criticized by industry, and the controversy drags on to this day.

Now, in part to avoid similar disputes, this politically conservative state is at the forefront of strict new regulations on oil and gas production. Working with EDF and the Wyoming Outdoor Council, state regulators recently approved the nation's strongest rules requiring before-and-

after testing of water for chemical contamination within one-half mile of drilling sites. The requirements apply to all new oil and gas activities and were championed by Republican Gov. Matt Mead.

**“I am not going to accept the question of do you want a clean environment or do you want energy.”**

—Governor Matt Mead

How did a state with an economy predicated on energy come to such a decision? For one thing, the Pavillion episode galvanized residents and Mead to demand action.

"I am not going to accept the question of do you want a clean environment or do you want energy," Mead said, in explaining his leadership. This is, after all, the home of Yellowstone and Grand Teton National Parks, and Wyomingites put a high value on the great outdoors.

One local leader is hay farmer Terry Jones. Although the nearest drilling rigs are ten miles from his 200 acres in southeastern Wyoming, he is concerned. "Water is fundamental to life," says Jones, who loves to hunt and fish. "I want future generations to enjoy what I have."

As drilling spreads, water pollution has emerged as a flashpoint nationwide. In Pennsylvania, Ohio, West Virginia and Texas, hundreds of complaints have been filed over water fouled by oil and gas

drilling. No community should be forced to risk its health for the sake of energy production. That's why EDF is fighting for strict regulations and oversight for oil and gas development.

In Wyoming, we've partnered with the Wyoming Outdoor Council, which has been protecting public land for four decades. "You can have all the expertise in the world, but if you don't understand the state and its issues and players, you won't be successful," says EDF energy policy manager Jon Goldstein, who helped shape the new regulations.

In 2012, with Gov. Mead vowing to "set politics aside and let science lead the way," we began working with the governor, his staff and regulators on water protections. We brought in leading scientists to pore over draft technical documents to help identify and fix deficiencies.

"EDF's expertise proved invaluable," says Amber Wilson of the Wyoming Outdoor Council. "Its work in other states lent credibility to our efforts."

When the rule was approved, Gov. Mead thanked EDF and the council for our contributions.

"Wyoming should be proud of this rule," notes Goldstein. "It sets a new national standard for groundwater testing around oil and gas development." EDF will continue to fight for strong rules in Wyoming and across the country.

Looking from his farm to Laramie Peak, Jones says the new water-testing rule has brought him peace of mind: "I'm a lot less fearful," he says. "At least we will know what's in our water."



"I want future generations to enjoy what I have," says farmer Terry Jones.

# Plugging methane leaks for pennies

Reducing emissions of this powerful greenhouse gas has not been a major priority for industry. But after an EDF win in Colorado, that's beginning to change.

**O**PPONENTS OF CLIMATE ACTION OFTEN CITE EXCESSIVE cost as an excuse for doing nothing. A new independent study commissioned by EDF, however, reveals that reducing leaks of methane, one of the most potent greenhouse gases, from the U.S. oil and gas industry can be accomplished for less than a penny per thousand cubic feet of natural gas produced.

It would seem like a no-brainer. But unfortunately plugging methane leaks has not been much of a priority for the booming oil and gas industry. According to the new study, however, 40% of methane leaks could be eliminated within five years using currently available technologies.

**“We must stop wasting the natural gas that is so essential to our national energy security.”**

—former Secretary of State George Shultz

Methane is the principal ingredient of natural gas and cuts both ways when it comes to the environment. Burning natural gas instead of coal to generate electricity results in about half the carbon dioxide pollution and far less mercury, sulfur and soot. But even a small amount of unburned methane released into the atmosphere—as little as 3% of all gas produced—could reduce or erase all the near-term climate advantages we think we are getting when we substitute natural gas for coal.

Scientists say one third of the warming over the next couple of decades due to current emissions will come from short-lived greenhouse gases like methane. “That’s why controlling methane is such a priority for EDF,” says Mark Brownstein, associate vice president and general counsel for our U.S. climate and energy program.

In fact, no one knows precisely how much methane escapes from wells, processing plants and pipelines around the nation. EDF is pursuing a dual strategy on methane: first, go out into the field and get real data on methane emissions from across the natural gas supply chain, and second, push for regulations and improved operating practices to reduce these emissions.

The absence of reliable information about leaks prompted EDF to launch the most comprehensive series of scientific studies to date on where methane is escaping. The 16 field studies involve more than 90 academic and corporate partners. These partnerships have given us unprecedented access to facilities across the natural gas supply chain that would otherwise be closed to researchers. EDF’s methane studies are “important work,” said U.S. Secretary of Energy Ernest Moniz, calling for closer scrutiny of methane emissions from natural



EDF scientist Dr. Ramon Alvarez (left) inspects a drilling rig in Arkansas.

gas operations in a speech at the National Press Club.

Meanwhile, in Colorado, EDF and three leading oil and gas producers developed and championed a rule that for the first time addresses methane in addition to other air pollution from oil and gas operations. An editorial in *The Denver Post* called the rules “some of the smartest and toughest” in the nation.

“The environmental benefit of reducing methane emissions is clear, and we must stop wasting the natural gas that is so essential to our national energy security,” commented former Secretary of State George Shultz.

We can prevent 100 billion cubic feet of methane leaks

That's more than enough gas to cook a meal for every man, woman and child on the planet.

# Gulf Wild

## The next wave in sustainable seafood

Do you know where your fish is from? After the BP oil disaster sank consumer confidence in Gulf seafood, a group of red snapper fishermen teamed up with EDF to create Gulf Wild, a system for tagging each fish with a unique number so that customers can see where it was caught. The program has taken off. At a time when a third of the seafood sold in the United States may be mislabeled, the Gulf Wild label is a guarantee of authenticity.



### FROM GULF

Gulf Wild is made possible by catch shares, a policy tool EDF helped develop that has dramatically increased stocks. Under catch shares, fishermen, like Capt. Buddy Guindon (above), are assigned a percentage of a scientifically determined allowable annual catch. This permits them to fish when weather and market prices are good—and gives them an incentive to conserve.





## TO RESTAURANTS AND MARKETS

As Gulf red snapper stocks rebuild, consumers nationwide get a steady supply of fresh, sustainably caught fish; more than 500,000 Gulf Wild fish have been sold.

“This is exactly what diners are demanding. They want to know that the Gulf fish we are buying is authentic, safe and from a sustainable fishery. Gulf Wild provides that assurance.”

—Chef Rick Moonen, RM Seafood, Las Vegas, NV



## TO CUSTOMERS IN 40 STATES

The recovery of Gulf red snapper has been so remarkable that in 2013 the Monterey Bay Aquarium took red snapper off the “avoid” list in its seafood guide.

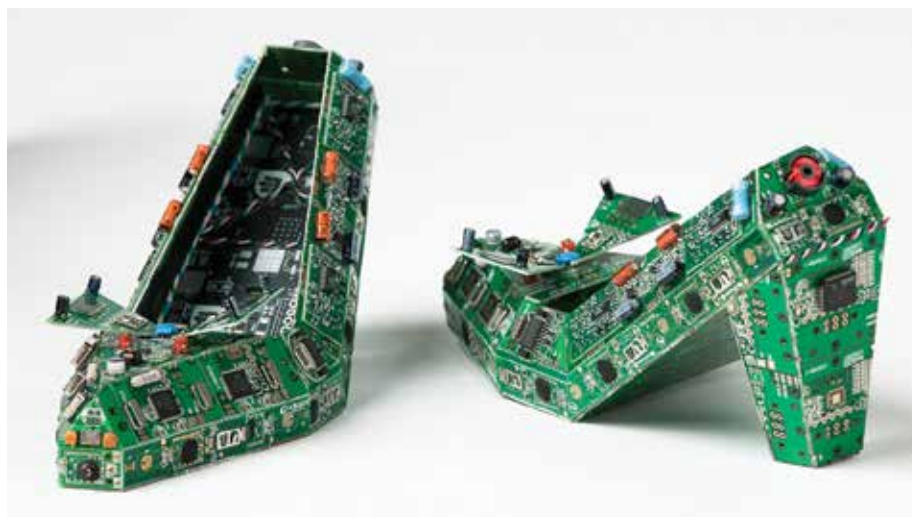
## TO DOCK

Fishermen who are part of Gulf Wild sign a “conservation covenant” which commits them to practices stricter than federal regulations. This reduces waste. “We’re catching bigger fish,” says Capt. Guindon, “and our prices at the dock have increased.”



# What to do with your electronic junk

In a throwaway culture, a recycling industry comes of age



PCORATIONS.COM

Tap your heels together three times and say, “Reuse. Reduce. Recycle.”

**L**ET’S SAY YOUR TRUSTY OLD COMPUTER delivered a “blue screen of death” this morning. By afternoon the old box is like a boat anchor in your office. What should you do with it?

We go through our electronic devices incredibly quickly these days. In fact our e-discards are the fastest-growing waste problem in the United States, according to EPA. Unfortunately America, which lacks a federal recycling law, is not as advanced in handling its e-waste as Europe or Japan. But the good news is that half of the states now require manufacturers to set up recycling programs. And some companies will buy back old electronics, especially popular phones, cameras and games. If your unit still has useful life, such middle men will resell them. If not, the old gear is broken up for its valuable metals.

One program, Gizmogul, collects old electronics from schools and businesses, and promises to donate 75% of the value to its own educational arm. “A thousand collected smartphones equals one school built in a developing country,” Gizmogul says. Another recycling program with a social mission is Close the Gap, which ships still-usable computers to Africa. By contrast, the popular Recyclebank program gives points that translate to discounts for merchandise.

Some manufacturers, including Panasonic, will take back obsolete electronics. Local green events often offer

free e-waste recycling, and some retail giants, including Staples and Best Buy, have programs collecting old electronics at their retail stores.

Sound easy? Well, it turns out there’s still a fair amount to learn before you can confidently sell or donate your e-waste:

## ■ Boob tube

“A big issue is older televisions and computer screens with cathode-ray tubes,” says Scott Cassel, founder and CEO of the pioneering Product Stewardship Initiative (PSI). “Unfortunately, people need to get rid of outmoded technology,

and many recyclers won’t take it because there’s no resale market. It’s hard to make it work financially for recyclers.”

## ■ Certified recycling

We’ve seen the horrific videos of American computers being “recycled” irresponsibly overseas, poisoning both the environment and the underpaid workers who do the dismantling. The best way to avoid that is to look for programs certified to promote responsible recycling. The highly regarded Basel Action Network (BAN) offers the e-Stewards certification program. Sarah Westervelt, BAN’s e-Stewardship policy director, said the program is focused on data security, protecting the health of e-waste workers, and “preventing toxins from ending up in developing countries.”

## ■ Read the fine print

Staples says it will recycle “any brand, any condition,” no matter where you bought it. But in fact it doesn’t take televisions, floor-model copiers and printers, appliances, larger servers or speakers, non-rechargeable batteries or lamps and bulbs. Best Buy accepts most electronics and large appliances at all stores. But details may differ from state to state. Other big retailers that recycle electronics include Office Depot and Target. Walmart gives gift cards and store credit for trade-ins.

By Jim Motavalli

## A dignified retirement for your electronics

- Electronics TakeBack Coalition promotes recycling programs: [electronicstakeback.com](http://electronicstakeback.com)
- Staples buys back still-useful electronics with cash cards for use in the store: [bit.ly/1dR2Orb](http://bit.ly/1dR2Orb)
- Websites that offer cash for electronics include: (public service) [Gizmogul.com](http://Gizmogul.com), [Close-the-gap.org](http://Close-the-gap.org); (for profit) [Recyclebank.com](http://Recyclebank.com), [Swappa.com](http://Swappa.com), [Gazelle.com](http://Gazelle.com), [Glyde.com](http://Glyde.com) (payment in Bitcoins), [Buy-BackWorld.com](http://Buy-BackWorld.com), [NewtonsHead.com](http://NewtonsHead.com) and [NextWorth.com](http://NextWorth.com)
- Walmart outlines its options at its main website: [bit.ly/1d3Y5Ec](http://bit.ly/1d3Y5Ec)
- Set up by the Consumer Electronics Association, Greener Gadgets offers recycling advice: [bit.ly/1nDW4Dr](http://bit.ly/1nDW4Dr)
- The Product Stewardship Initiative’s e-waste project: [productstewardship.us](http://productstewardship.us)
- Panasonic recycles Toughbooks “in accordance with EPA standards:” [bit.ly/1fU9mHz](http://bit.ly/1fU9mHz)
- Basel Action Network e-Stewards program: [e-stewards.org](http://e-stewards.org)

Jim Motavalli writes regularly about green products for The New York Times, National Public Radio and [thedailygreen.com](http://thedailygreen.com). Opinions are the author’s and not those of Environmental Defense Fund.

Letters

## Seeking safe salmon

I was confused by the article “Six kinds of fish you can order safely” in the *Winter Solutions*. One of the six is salmon (canned), but the EDF Seafood Selector lists Atlantic salmon (farmed) among the Worst Choices for fish. So which is correct?

—Van Dixon, Baltimore, MD

**Tim Fitzgerald, EDF sustainable seafood expert, responds:**

No wonder you’re confused! The entry for canned salmon left out some critical information due to an editing error. Here’s how it should have read: Most fresh and frozen salmon sold in the U.S. is farmed Atlantic salmon, which is an Eco-Worst Choice. But most canned salmon sold in U.S. supermarkets is wild-caught pink or sockeye salmon from Alaska, which we strongly recommend. Their Eco-Rating is: Best; Omega-3s: High; Mercury Level: Low.



TIM CONNOR

Soon to be reborn as an EV.

## Can we make cities friendlier to EVs?

Since we seem to inevitably be heading to an electric vehicle future, we should be incorporating, even requiring, EV options as part of new construction and major renovations. It would certainly be less expensive than retrofitting in the future.

I live in a Berkeley, CA, neighborhood where people don’t have garages. My neighbor has an EV and has to run a cable over the sidewalk to charge his car. When Berkeley redid the sidewalks recently, they could have included conduits underneath to facilitate recharging. I’ll suggest this to Public Works—it’s a Berkeley sort of project!

—Fred Krieger

*Editor’s note: EDF is helping shape electric grid reform in New York, California and elsewhere to open up opportunities for electric vehicles and other new technologies.*

READERS RECOMMEND

Documentaries

## A great river seeks rebirth

*Watershed*



Produced and narrated by Robert Redford, this documentary looks at the Colorado River—a great river that dries up before it reaches the sea. Alternately uplifting and disturbing, the movie explores “a new water ethic for the new West.”

>>> WATCH ONLINE >>> [watershedmovie.com](http://watershedmovie.com)

## Turning garbage into fine art

*Waste Land*



Nominated for an Academy Award, artist Vik Muniz’s documentary celebrates monumental photographs made from garbage. The portraits, done with garbage pickers—or *catadores*—from a vast open-air dump in Rio de Janeiro, bring high prices, which Muniz donates to his collaborators. A moving film about the intersection of high art, money and ordinary people.

>>> GET INVOLVED >>> [www.wastelandmovie.com](http://www.wastelandmovie.com)

Books

## How to keep going against the odds

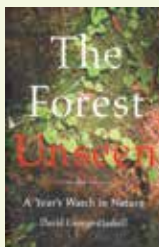


*The Green Boat: Reviving Ourselves in a Capsized Culture*

A clinical psychologist, author Mary Pipher suggests ways to keep green causes going in the face of seemingly intractable issues like climate change.

Recommended by Blaikie Worth, EDF advisory trustee

## The astonishing story of one small patch of forest



*The Forest Unseen*

By taking a close look at a one-square-meter patch of old-growth Tennessee forest over the course of a year, biologist Dr. David Haskell brings the forest and its inhabitants to vivid life, while explaining the science binding together ecosystems that have cycled for millions of years.

Recommended by Amy Van Devender, Boone, NC

## What do you recommend?

Share what inspires you as an environmentalist with other members at [editor@edf.org](mailto:editor@edf.org).



**“If we are going to live so intimately with these chemicals—eating and drinking them, taking them into the very marrow of our bones—we had better know something about their nature and their power.”**

—Rachel Carson, *Silent Spring*