

SOLUTIONS

Vol. 42, No. 3 / Summer 2011



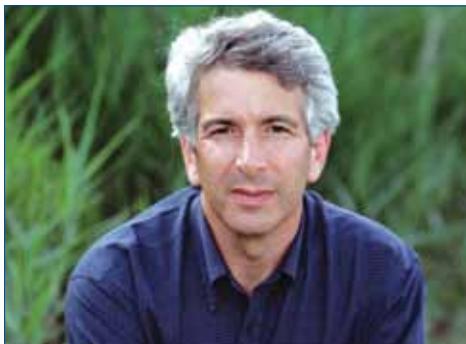
“WE CAN DO IT!”

Moms unite to take on polluters and pols—and anyone else who threatens their kids.

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WHERE WE STAND

By EDF President Fred Krupp



How many lives is the #1 coal burner AEP willing to sacrifice?

CORPORATE AMERICA MUST CHOOSE

In business, as in life, choices define who we are. Many corporations are working to improve environmental performance. Others stubbornly hold on to the past, fighting to avoid changes that are necessary for economic growth and the health of Americans.

Consider American Electric Power (AEP), the country's largest coal-burning electric utility. AEP lobbyists recently drafted a bill to delay EPA-mandated cuts in mercury emissions and carbon pollution. A company spokesman said AEP needed more time to comply, though the standards have been in the works for more than 20 years and the required technology is both available and affordable.

The AEP bill is Washington at its worst: corporate lobbyists writing legislation to block limits on pollution—and then shopping around for sponsors in Congress. We'll see which politicians are willing to put their name to a document guaranteed to put their constituents' health at risk.

The anti-environment onslaught on Capitol Hill is the worst I've seen in more than 25 years at EDF. But many Americans don't realize how serious it is. That's why EDF is working with a group of prominent bloggers to reach out to parents who care about their families' health and want to make their voices heard in Washington (*see cover story, page 4*).

My question to AEP is this: How many lives are you willing to sacrifice? Because in the first two years alone, according to EPA, your bill would cost 34,000 lives and lead to 220,000 asthma attacks.

Now consider a responsible corporate model—Constellation Energy, Exelon, PG&E and other major utilities have already invested in efficient power plants that will control this dangerous pollution.

This chasm between the two corporate Americas reminds me of conversations I had recently at the *Fortune* Brainstorm Green conference in California. I was struck by how many executives want to reduce the pollution their corporations produce, even as they grow.

Let's compare AEP to these enlightened competitors. Whose future would you bet on: the company intent on retaining obsolete and dangerous practices or the companies that embrace new technologies in demand the world over?

At EDF, we've made our choice. We will work with forward-thinking companies to grow the economy in a sustainable way. And we will oppose, and convert, those who choose the other path.

A handwritten signature in black ink that reads "Fred Krupp". The signature is fluid and cursive, with a long, sweeping underline.



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

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



ON THE COVER:

The coordinated attacks on our nation's bedrock environmental laws show no signs of

abating. EDF has teamed up with an entity more powerful than industry lobbyists: parents who care about the health of their children.

Solutions managing editor Peter Edidin interviewed the people at the heart of this campaign and found a group driven by determination and hope. *See page 4.*

Cover illustration: Gerard Taylor/illustrationOnLine.com

SOLUTIONS

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LETTERS AND COMMENT FROM READERS

An inquiry: What should the U.S. do about nuclear power?

The nuclear disaster in Japan prompted many comments from EDF members in light of proposals to expand nuclear power in the United States. A few examples:

“We’ve got to push the President and Congress to take a closer look at the U.S. nuclear program and how compromised we would be if this country experienced what Japan is going through.”

—Liz Beck, North Mankato, MN

“With the current meltdowns in Japan, I’m concerned about the nuclear power plant that is about to be approved for Utah.”

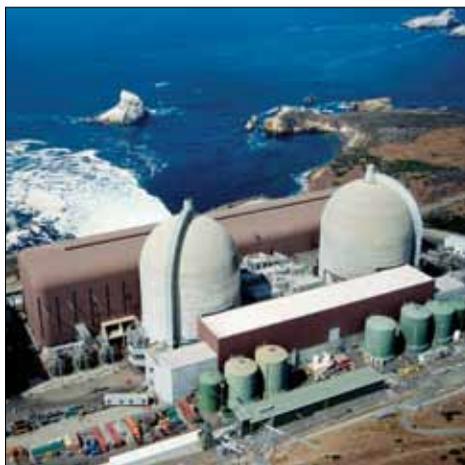
—Gloria, Salt Lake City, UT

“Pueblo, CO, has announced that a nuclear reactor is in the planning stages for our area and is calling it Green Energy. What is ‘green’ about a nuclear reactor?”

—Jane, CO

EDF senior director Elgie Holstein and staff scientist Dr. Lisa Moore reply:

We share your alarm at the disaster in Japan, which graphically reminds us of the many serious issues associated with nuclear



Roger Fessmeyer/Corbis

Diablo Canyon (CA) is one of 88 nuclear reactors worldwide in earthquake-prone areas.

power, including public and worker safety, security, radioactive waste management and disposal, and proliferation.

Nuclear power is a relatively clean energy source, unlike coal, which is the leading industrial source of global warming pollution. Coal also kills thousands of Americans every year through air pollution and mining accidents.

In the United States, nuclear power plants generate 20% of electricity, so closing them overnight is not a viable option. Instead,

EDF wants to hear from you. To submit comments, email us or visit us online, at solutions.edf.org. All printed letters are edited for clarity and length.

we must make the existing U.S. reactor fleet as safe as possible, in part by applying the lessons learned from the crisis in Japan.

Toward that end, EDF has called for full transparency and international cooperation in making public the causes of the Fukushima debacle. We believe that earthquake resistance, operator training, backup power supplies, emergency response protocols and evacuation plans must all be carefully evaluated in light of the Japanese disaster. If this means taking some U.S. plants offline in order to inspect them or make upgrades, then we should undertake those and all other safety measures needed to safeguard America’s communities and workers. There is no margin for error.

Before there can be any serious discussion of building new nuclear plants in the United States, we need answers to some hard questions about what went wrong at the Japanese reactors and how similar malfunctions can be avoided in the United States. In the meantime, EDF will continue to support strong oversight of the nuclear industry and maximum transparency in assessing the risks and consequences of accidents.

AND WE’VE GOT A WINNER!

Solutions received hundreds of great submissions to our cartoon caption contest. So many made us laugh that it’s a shame we only have space to print the winner and two runners-up.

The runners-up:

“So, would you like to go inside and share a bottle of 1998 air with me?” —Michael and Helen Sokalski, Port Charlotte, FL

“The invitation said ‘Black Lung Only.’”

—Patrick De Freeuw, Flossmoor, IL

➤ **Enter our latest “Cartoon in Need of a Caption” contest online. We will publish the winner in a later issue of Solutions. See cartoon at solutions.edf.org.**



“But the sunsets are so much more colorful since they defunded EPA.” —Thomas Moore, Philadelphia, PA (via Facebook)



A BAND OF MOTHERS

The Moms Clean Air Force takes on corporate polluters

By Peter Eddin

Clean air is too important to be a bargaining chip for industry lobbyists and politicians. EDF is part of a powerful new movement standing up to those willing to sacrifice public health for profit. Our impact is already being felt.

Sometimes, to reverse the old feminist slogan, the political is personal. Take the current struggle to cut the amount of mercury America's coal-burning power plants spew into the air.

Power plants release 35 tons of poisonous mercury into our air every year, even though cost-effective technologies exist to cut those emissions by more than 90%.

Mercury is particularly harmful to children. Once in the bloodstream, it can damage a child's developing nervous system, brain, heart, kidneys, lungs and immune system.

So a fight over regulating this poison should be a very personal matter to anyone with kids, grandkids or simply a belief that children deserve a chance to grow up healthy.

In fact, that fight is happening

right now, and the nation's bedrock environmental protections hang in the balance.

In March, the Environmental Protection Agency issued a set of rules, the Mercury and Air Toxics Standards, which will dramatically cut mercury, heavy metals, acid gas and other emissions from power plants. The standards, which took 26 years to hammer out, are finally expected to go into force in November. They will prevent 17,000 premature deaths a year, once the plants install the needed equipment. But some in Congress, at the behest of polluters, are trying to stop these rules from ever being enforced.

Many utilities, anticipating these standards, have already taken steps to comply. Others are spending millions to fight the regulation.

Clean air is too important to be

“It really comes down to protecting our kids and trying to give them clean air, clean water and a healthy place to grow up in.”

—Katy Farber, blogger at non-toxickids.net

negotiated between politicians and industry lobbyists without public involvement. That’s why EDF is supporting a group of committed, influential bloggers who call themselves the Moms Clean Air Force (moms-clean-air-force.org). The aim is to create a new movement, which will encourage and enable America’s mothers (and dads) to take direct action to protect the health and well-being of their families.

“Our goal is to energize mothers and mothers-to-be,” says Dominique Browning, who writes the Personal Nature column on EDF’s website and is the lead blogger for the Moms Clean Air Force. “They are the ones with the biggest stake in protecting the Clean Air Act.”

The mercury standards are only part of a larger environmental battle being fought out in Congress and in state

legislatures across the country. Some in the House of Representatives have made it a top priority to hamstring EPA and gut the Clean Air Act. “Let the EPA go the way of the dinosaurs that became fossil fuels,” is how Rep. Louie Gohmert (R-TX) put it.

The 1970 Clean Air Act is almost universally considered one of the best, most effective environmental regulations ever passed—providing \$30 in economic benefits for every \$1 invested in pollution controls. And yet politicians in the House tried to prevent EPA from enforcing limits on air pollution and tried to cut \$3 billion from the agency’s budget.

An early win

Working with the Senate in April, EDF and its allies were able to eliminate the most draconian cuts in the House budget,



Paul Souders/Corbis

Young children are particularly vulnerable to mercury pollution.

but big polluters and their political allies are using new legislative ploys and court challenges around the country to undermine EPA’s authority (*see box*).

“They are trying to unravel the legal fabric that has protected the health and safety of our families and our neighborhoods from dangerous air pollution for over 40 years,” warns Vickie Patton, EDF’s chief legal counsel.

The Moms Clean Air Force will use its web site, as well as Facebook, Twitter and email, to alert parents and others when important votes come up in 

THE BAD, THE UGLY AND THE GOOD

How many American lives are polluters willing to sacrifice in their campaign to delay clean air standards? 50? 5,000? 25,000?

EPA estimates that delaying action could cause 17,000 premature deaths annually, and says overall health benefits of its proposed rule will outweigh costs by more than five to one. And yet, two industry behemoths are pulling every trick to thwart action.

Lobbyists for American Electric Power, one of the nation’s biggest emitters of toxic air pollution, drafted federal legislation to delay EPA’s initiative to clean up toxic pollution from coal-fired power plants. And Tom Fanning, the CEO of Southern Company, told a House subcommittee, while offering no evidence, that the regulations would push up electricity prices 25%.

“We’ve heard time and again that clean air and health rules cost too much, will kill jobs and can’t be done,” says Mark MacLeod, EDF’s special projects director. “And they have been proven wrong every time.”

In fact, many of the nation’s power plants have already made the transition—affordably. Baltimore-based utility Constellation Energy, for example, recently installed modern pollution controls at a power plant in Maryland—and employed

1,400 skilled workers in the process.

“There is no reason to delay,” says Michael Bradley, the executive director of the Clean Energy Group, which helps states promote and finance clean energy. EPA’s proposed standards, he says, “are already being achieved.”



istockphoto.com

Unscrubbed: 40% of AEP’s fleet of coal plants—and half of Southern Company’s—lack advanced pollution controls.

Congress or a state legislator introduces legislation favoring a dirty utility. The group will also help its growing army of bloggers and members organize for and against specific bills, politicians and companies.

“I feel like it really comes down to protecting our kids and trying to give them clean air, clean water and a healthy place to grow up in,” says Katy Farber, a blogger who is a Vermont schoolteacher with two kids. “These are things that know no political boundaries, and I see

the power of real parents getting together through blogging and social media to fight back.”

People power works. For example, when lobbyists for American Electric Power (AEP), the nation’s biggest polluter, drafted a Congressional bill to delay mercury regulation this spring, the Moms and others jumped into action—prompting more than 42,000 angry emails to AEP. Elected officials soon began to back away from the bill.

The reason for the Moms campaign, says Karen Francis, a Moms Clean Air

Force blogger who is a military spouse, is to “make noise and phone calls to our Congress people ’til they listen. You just gotta keep kicking people in the butt and make it hurt if that’s what is necessary.”

That’s making the political personal.

➤ **Join the Moms Clean Air Force and help protect your kids from dangerous pollution at momscleanairforce.org/join**

➤ **TAKE ACTION: Urge AEP to clean up its act at edf.org/AEP**

PEOPLE POWER

The Moms Clean Air Force is dedicated to one thing: protecting our kids from industries and politicians that are trying to gut the Clean Air Act and shackle the Environmental Protection Agency. The grassroots campaign, starting with a group of committed bloggers, will help America’s moms (and dads) keep the air clean and healthy for the next generation.

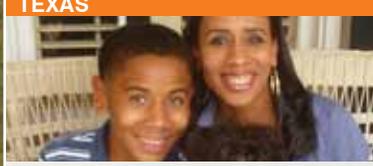


CALIFORNIA

ANA L. FLORES
 spanglishbaby.com

COLORADO

ROXANA SOTO
 spanglishbaby.com

TEXAS

GINA CARROLL
 chron.com/channel/momhouston/
 commons/TorturedbyTeenagers

CALIFORNIA
ELISA BATISTA
 mothertalkers.com

NEW MEXICO
DEREK MARKHAM
 naturalpapa.com

VERMONT
KATY FARBER
 non-toxickids.net

CONNECTICUT
ABBIE WALSTON
 farmersdaughterct.wordpress.com

RHODE ISLAND
RONNIE CITRON-FINK
 econesting.com

NEW YORK
MARCIA YERMAN
 marciagyerman.com


DOMINIQUE BROWNING (photo)
 slowlovelife.com

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 writeslikeshetalks.com

WASHINGTON, DC
JOANNE BAMBERGER
 PunditMom.com

VIRGINIA
KAREN
 milspousemutterings.wordpress.com



NURSING LOUISIANA'S COASTAL WETLANDS BACK TO HEALTH

Joel Sartore/Corbis

When BP's Deepwater Horizon exploded last year, the United Houma Nation was turned upside down. The culture and economy of the 17,000-member tribe have been entwined with the bounty of the Gulf of Mexico for centuries.

"Our people follow the seasons," explains former chief Brenda Dardar Robichaux. "In the summer we catch shrimp, crabs and garfish. In the winter we harvest oysters."

Even before the spill, however, Louisiana's coastal wetlands—which nurture one-third of the nation's fish and shellfish harvest—were disappearing. The state loses up to 30 square miles of coastland each year, largely due to navigation canals and levees, which starve wetlands of the sediment and fresh water they need.

"When I was little, we raised horses on fields. We had gardens and the kids played baseball. Now our backyards are water," says Robichaux. The spill added another dimension to the problem. "If we're ever going to get a vision for coastal restoration off the ground," she adds, "now is the time."

Working with Robichaux and others, EDF has been at the forefront of efforts to ensure that BP penalties from the spill will go to securing the safety of coastal communities through wetlands restoration. We also joined with other environmental groups in calling on President Obama to implement additional safeguards for offshore drilling.

This April, a settlement was reached

in which BP committed \$1 billion to pay for natural resource damages. "This down payment allows for approved projects to get under way," says Paul Harrison, our Gulf Coast director.

One such project could be the Myrtle Grove sediment diversion in northern Barataria Bay. Dr. Angelina Freeman, an EDF coastal scientist, has co-directed a study showing how reconnecting the Mississippi River to its natural floodplain in the area, if done correctly, would

rebuild wetlands.

EDF is now pressing Congress to ensure that 80% of the BP disaster's Clean Water Act penalties (up to \$20 billion) will be used to restore Gulf communities and ecosystems. Unless Congress dedicates these fines to restoration, they will be deposited into a fund that is unlikely ever to be tapped.

"Without this restitution," says Robichaux, "our culture and our way of life will be gone." So will the land that protects New Orleans.

A LIFELINE FOR GULF SEA TURTLES

Sea turtles have flourished on Earth since the age of dinosaurs. Yet these hardy creatures may not withstand today's man-made threats. Last year's BP oil disaster hit sea turtles hard. Five of the world's seven species live in the Gulf of Mexico. After the spill, 400 dead sea turtles were counted, including threatened loggerheads.

Every year, hundreds of loggerheads get accidentally ensnared in fishing lines and die. EDF has provided turtle-friendlier gear to fishermen, but many turtles still get snagged. "The rules should favor fishermen who avoid turtles," says EDF expert Pam Baker, who previously helped persuade regulators to restrict trawling in areas where Kemp's ridley turtles mate. That species has begun to rebound.

EDF is helping create incentives for

fishermen to avoid sea turtle capture. "The first step is to get the management right," says Baker, who adds that the full impact of the spill on sea turtles won't be known for years. "The hatchlings that survived won't nest on Gulf beaches for at least a decade," says Baker. "Still, there's reason for hope."



Animals Animals

At loggerheads: Turtles and oil don't mix.



FINDING COMMON GROUND IN CUBA

Sharks, sea turtles, birds and fish traverse the boundaries between the United States, Mexico and Cuba. Now, fishermen, scientists and managers are doing the same.

Isla de la Juventud (“Isle of Youth”) dangles off Cuba’s southwestern coast like a pearl on a necklace. The largest of 350 islands in the Canarreos archipelago, the island provided refuge for pirates during the 16th and 17th centuries, and is said to have inspired Robert Louis Stevenson to write *Treasure Island*.

This spring, EDF staff members came there, too, equipped with laptops and position papers. But they weren’t looking for buried treasure. Rather, they were convening a meeting of fishermen, scientists and managers from Mexico, Cuba and the United States—the first of its kind to include fishermen from the three nations. EDF has worked on Cuba fisheries for more than a decade under a special license from the United States government and opened an office in Mexico in 2009.

“Our countries are ecologically connected,” says Billy Causey, a director of NOAA’s National Marine Sanctuary Program. “Cooperation benefits us all.”

Participants shared ideas on fisheries science and management, and spent

time on a research vessel and a tuna boat. These “floating workshops” provided a firsthand view of Cuba’s marine protected areas—20% of Cuban waters—that teem with tarpon, Nassau grouper, barracuda and pristine coral reefs.

Aboard the *Cayo Largo 19*, they learned how Cuban fishermen pursue blackfin tuna without sonar or other technology. Instead, they scan the horizon for frigate birds and sea gulls, a sign that tuna and sharks are feeding nearby. They then circle ahead of their prey, “chum” the water with live sardines and use 10-foot bamboo poles to haul in 20-pound tunas.

“This practice is sustainable and low impact yet highly successful,” says Ben Hartig, a Florida fisherman and member of the South Atlantic Fishery Management Council. “I plan to use the same chumming technique to fish for king mackerel off

the east coast of Florida.”

For their part, the Cubans, whose marine resources are threatened by tourism and overfishing, learned from their guests how market incentives and fishing cooperatives can rebuild fish populations, protect coral reefs and curtail illegal fishing.

On land, the participants hunkered down in meetings to hammer out strategies for conservation. “The exchange was incredibly productive,” says Dan Whittle, director of our Cuba program. “Fishermen speak the same language.”

A follow-up workshop is planned for November in the Gardens of the Queen, once Fidel Castro’s favorite spearfishing site and the crown jewel of Cuba’s marine reserve network.



Teamwork: Captain Mariel Hechavarria and EDF attorney Whittle.

CLIMATE CORPS EXPANDS

EDF's efficiency program comes to cities and schools



Raleigh News and Observer

Just three years old, EDF's Climate Corps is already a \$439 million success. That's the potential energy savings racked up by the program since 2008, when EDF began training MBA students to spot efficiencies and placing them in summer fellowships

at major corporations. Their keen eyes are helping to avoid up to 86,000 SUV's worth of global warming pollution each year.

Michael Regan, EDF's energy efficiency director, looked at that record and thought: Why not apply the same approach to saving

energy and money at public institutions? And why not start with state schools that serve minority communities?

In 2009, Regan launched a public sector extension of Climate Corps and placed energy efficiency fellows at two historically black universities, North Carolina Central and Johnson C. Smith. The fellows made recommendations that will save the schools \$14 million over five years.

This summer, the public sector program is kicking into high gear. Thirty-nine fellows will cover 28 public institutions from Texas to Washington, DC, as well as 11 local governments, including the Eastern Band of Cherokee Indians. A big prize was the New York City Housing Authority, which manages more than 175,000 apartments in 2,600 buildings.

"In one summer, we can effect monumental change," says Regan.

One benefit of working with minority-serving institutions is that it helps to create a bigger, more diverse constituency for climate action. "We'll bring a larger army to the next round of climate battles, one that better reflects America," says Regan.

ON CAMPUS, ENERGY EFFICIENCY 101

"He's focused, a guy who knows where he wants to go in life," says Charles Hall, the director of construction at North Carolina's Elizabeth City State University (ECSU). "He's also really friendly and has a good sense of humor."

The "guy" is Tyrone Davis, a soft-spoken 27-year-old who spent last summer as a Climate Corps fellow at ECSU, a historically black school. Tyrone has a master's degree in public administration, with an emphasis on energy policy. In his new role, he was asked to create an energy efficiency plan for four large campus buildings, including the school's centers for technology, graduate studies and fine arts.

"It was pretty daunting," Tyrone recalls. "I relied on my training at EDF, which provided me with a lot of resources, like research databases and access to energy experts. I wound up recommending a lot of lighting improvements, like photo sensors for the fine arts center and window film in the tech center to cool the lobby and reduce air-conditioning demand."

Tyrone's business plan showed the changes would cost \$57,846, and deliver \$31,422 in annual savings—paying for themselves in less than two years. They'd also avoid 190 tons of carbon dioxide emissions annually.

"The school was really excited," he says. So much so, that

it hired him to complete a campus-wide sustainability plan. One month later, based in part on his work, ECSU decided to make sustainability a core part of the school's mission.

Tyrone, who is legally blind, seems to thrive on challenges. The next one is law school, which he'll begin this fall. He's leaning toward environmental law.



David Fox

Tyrone Davis of EDF's Climate Corps. To date, 86% of the energy savings suggested by our MBA fellows last year are being implemented.

HELPING FARMERS BECOME BETTER STEWARDS



Tim Connor

Standing in a field next to the house where he grew up, Todd Hesterman, a fourth-generation farmer in Napoleon, OH, picks up a clod of earth, examines it, then holds it to his nose. “You play in these soils long enough and you learn what looks and smells healthy,” he says.

In his John Deere cap and flannel shirt, Hesterman may look like a traditional family farmer, but in fact he’s part of an agricultural vanguard, an evangelist for the use of precise data to raise crops more efficiently, with less impact on the environment.

With partners like Hesterman (above left with his father), EDF is building communities of farmers in critical watersheds who are changing the way American agriculture works.

Farming is a major contributor to water pollution. Sediment and fertilizer runoff fills streams and lakes, where nitrogen and phosphorous from the fertilizer create algae-filled “dead zones.”

In Hesterman’s part of Ohio, some five million tons of topsoil erode every year into streams that feed Lake Erie. And fertilizer runoff contributes to algae growth that threatens an \$8 billion tourism and fishing industry, as well as drinking water for 11 million people.

“We can’t be farming and destroying a Great Lake,” says Hesterman. “That doesn’t make sense.”

Dead zones also plague Chesapeake Bay, where the once-great oyster industry has virtually collapsed, and the Gulf of Mexico, where a 6,000-square-mile dead zone has been created by fertilizer running off farmland along the Mississippi River.

The problem is that, until recently, farmers never knew exactly how much fertilizer to use. They relied on general guidelines and the recommendations of crop advisors, who get paid by fertilizer companies based on how much fertilizer they sell. The result: An estimated 50% of fertilizer applied is not taken up by crops.

In addition, farmers had grown

accustomed to planting every available acre, getting rid of wetlands and tree buffers that can capture up to 80% of fertilizer drained from farmlands. These set-asides also prevent erosion and create habitat for birds, bugs and bats, which help farmers by pollinating and controlling pests.

The tractor network

In 2001, the Iowa Soybean Association, aided by EDF, created the On-Farm Network. The network shows farmers how to collect and use data about conditions in their fields to determine how much fertilizer their crops really need.

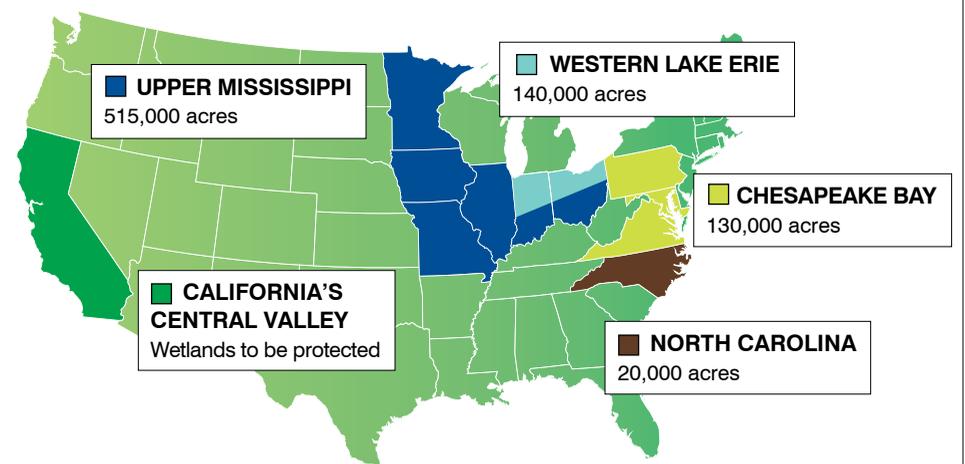
“We help farmers understand how to use tools like corn stalk tests, which show what percentage of the nitrogen they applied to a crop was actually utilized,” says Karen Chapman, EDF’s Great Lakes director. “And it encourages them to share best practices, both online and at local meetings.”

Today, the network includes more than 1,000 farmers working nearly one million acres in 11 states, spanning the critical watersheds of the Mississippi, Chesapeake Bay, Great Lakes and North Carolina (*see map*). These farmers have cut fertilizer use up to 25%, saving an average of \$3 per acre, without reducing yields.

And that’s just the beginning. “Our goal is to influence federal policies,” says EDF scientist Suzy Friedman. “Precise use of fertilizer is still the exception among farmers. We need to make it the rule. Then we can make a real difference.”

EDF’S CLEAN WATER NETWORK

Highlighted areas represent states where EDF has farming partnerships for clean water.



EDF INITIATES A GLOBAL CONVERSATION ABOUT GEOENGINEERING



istockphoto.com

What are the rules for experimenting with the planet?

Heat-trapping gases are already disrupting Earth's climate. But what if humanity fails to act in time to prevent extreme climate change?

In an 18th-century English manor house, once used to train anti-Nazi saboteurs, an international group of experts recently gathered to air concerns about one possible answer to that question. It's called geoengineering, the deliberate manipulation of Earth's environment.

"We need to have an honest conversation about geoengineering," says Dr. Steven Hamburg, EDF's chief scientist and co-chair of the conference, which was convened by the U.K.'s Royal Society, the Academy of Sciences for the Developing World and EDF.

"Once we understand the risks of

deploying these technologies," Hamburg added, "there's a good chance we'll never want to use them."

A menu of risky options

Geoengineering proposals range from carbon-eating plankton to cloud-seeding ships to artificial trees that scrub the air of carbon dioxide (CO₂). But the roughly 50 scientists, policy analysts, ethicists and international lawyers at Chicheley Hall, in Buckinghamshire, concentrated on one approach: solar radiation management to reduce the amount of sunlight reaching Earth's surface.

Researchers are already thinking about using airplanes or balloons to scatter reflective aerosols in the stratosphere to block sunlight, so there is an urgent need to explore how to govern such research.

The idea of solar management is based on the effect of erupting volcanoes, like Mt. Pinatubo in 1991, which lowered the Earth's average temperature for a couple of years. However, adding sulfates to the stratosphere comes with an array of nightmarish risks.

It might, for example, disrupt rainfall patterns

or change the color of the sky. And the technique would do nothing to stop atmospheric CO₂ from acidifying Earth's oceans and damaging marine creatures. Worse, if the concentration of sulfates dropped (due, say, to technological failures), temperatures around the world would rise dramatically.

The first step: Understanding what could go wrong

The key to any consideration of this technology, the Chicheley Hall group agreed, is to do enough research to understand what could go wrong before making a decision on whether real-world experimentation is worth the risk.

"If we reach a crisis point and deploy geoengineering with only a modicum of information, we will be playing Russian roulette," says Hamburg.

He added that no field experiments should be conducted without the full participation of civil society.

"Transparency is key. We can't just say, 'Trust us, we're scientists.'"

Hamburg and other conferees now plan to extend their geoengineering conversation about whether to engage in basic research to similar gatherings worldwide.

"The agreements we end up with must be multilateral," he says. "This issue involves the whole world."

IS THIS THE SILVER BULLET?

Spraying reflective particles in the stratosphere could block sunlight and cool the planet. It could also change the weather and the color of the sky.



Illustration by John E. Kaufmann



Michael Yamashita/Corbis

FINDING SAFE AND ECO-FRIENDLY SEAFOOD

Fish is part of a healthy diet, and EDF's Seafood Selector (edf.org/seafood) has long helped consumers make the best choices. Developed with the Monterey Bay Aquarium, it identifies fish that are safe to eat and caught or farmed sustainably. Our guide is different from others because we work with troubled fisheries to improve management and conservation, which over time can help their ratings in the Selector. Here are the latest developments:

Is Gulf seafood safe?

After the BP Deepwater Horizon explosion last year, consumer confidence in Gulf seafood fell. Consumers remain wary today, despite government assurances. Now a new testing program developed by EDF and Gulf fishermen, called Gulf Wild, tracks fish from ocean to plate.

"Gulf Wild testing goes well beyond what the government does," says Tim Fitzgerald, EDF seafood policy analyst. The tests were developed with the University of Alabama's School of Public Health.

The program is sampling more than a dozen species for oil-based contaminants, dispersants and heavy metals, and will eventually expand to all the fish in the Gulf catch share program, which helps conserve red snapper and other reef fish.

Gulf Wild fish is sold with a numerical tag. You can enter the tag number at MyGulfWild.com to see the captain who caught your fish and where it came from.

"The oil spill made it imperative to show that Gulf seafood is safe," says David Krebs, president of the Gulf of Mexico Reef Fish Shareholders' Alliance. These Gulf Wild fishermen pledge to abide by rules that result in zero wasted fish.

Mercury in canned tuna

Consumers have been warned for years about mercury in popular fish like canned albacore ("white") tuna. Concerned parents who rely on canned tuna for their kids' lunches can check Seafood Selector consumption advisories, which are based

on EPA's health-assessment approach. Skipjack tuna, sold as canned "light" tuna, is lower in mercury than albacore.

California retailer Wild Planet Foods offers canned albacore containing 62% less mercury than well-known national brands, making it roughly as low as typical "light" tuna. It is rated a Best Choice by Monterey Bay Aquarium. The California Fisheries Fund—a loan program begun by EDF to help West Coast fishermen fish sustainably—is assisting Wild Planet.

Wild Planet cans smaller tunas caught by low-impact methods. Since mercury accumulates in the tissue as fish grow, fish lovers should eat a variety of small fish, including Atlantic mackerel and sardines. This reduces your exposure to contaminants and helps conserve fish stocks as well. "The lower you eat in the food chain—generally the smaller fish—the less impact you have on the ocean," explains EDF's Fitzgerald.

Tracking radiation

In April, workers at the Fukushima Daiichi nuclear power station in Japan released 10,000 tons of radioactive water from the damaged reactors into the ocean. That prompted some restaurants—such as Le Bernardin, the famous New York seafood restaurant—to shun fish from Japan and buy radiation detectors.

Very little seafood is now being caught in Japanese waters, but any fish harvested there and imported into the United States will undergo screening for radiation, as will other food products from Japan. Most canned tuna sold here is caught nowhere near Japan.

FISH DU JOUR WITH CONFIDENCE

- Use EDF's Seafood Selector to choose safe-to-eat, eco-friendly fish: edf.org/seafood
- For more information on Gulf Wild, go to: mygulfwild.com. Gulf Wild red snapper and grouper are available at: Fishbustertz, Madeira Beach, FL; North Coast Seafood, Boston, MA; Fulton Fish Market, New York, NY; or ask your fish dealer to order Gulf Wild.
- For a list of sustainable fish purveyors supported by the California Fisheries Fund, visit: californiafisheriesfund.org/customers.html
- Wild Planet's products are available in natural food chains, independent retailers and supermarkets throughout the United States; or order online at: wildplanetfoods.com/store/products

BIOENERGY AND NATURE: A BALANCING ACT



Rolf Nussbaum/Alamy

In the rush for clean energy, let's not forget the red-cockaded woodpecker.

Endangered red-cockaded woodpeckers forage for spiders and insects in the decaying logs and pine needles on the Southern forest floor. How much of this organic material can be removed without harming the forest ecosystem?

That question is growing in urgency as the market for bioenergy booms. In the South alone, there was a 35% jump last year in the number of facilities that use wood to generate electricity for homes and businesses. That growth is a response to demand, which is rising rapidly.

Only a few states have developed harvest guidelines to assist landowners and loggers in entering these new markets.

Science-based policies are urgently needed.

"We're at a tipping point," says EDF's Will McDow, a forestry expert. "The rich biodiversity of America's longleaf pine and Appalachian hardwood forests is at risk." Not only does a wide range of wildlife rely on dead wood for critical habitat, but decayed matter on the forest floor also helps the soil retain nutrients.

EDF is working with landowners, businesses and universities to answer critical questions about biomass harvesting. How much harvesting is sustainable? At what point do we begin to damage the ecosystem? Our team is focusing its efforts on forests in the Southeast and New England, which will become models for other regions.

Bioenergy can reduce the need for fossil fuels and cut emissions of greenhouse gases. But not all bioenergy is created equal. Simply cutting down forest trees to make wood pellets for boilers,



Pat Canora/Alamy

Detritus on the floor of a longleaf pine forest serves as a seedbed for trees and plants.

for example, releases large amounts of greenhouse gases that are not accounted for under current policies.

EDF is developing a system to measure these carbon emissions. In the absence of EPA carbon accounting rules for biomass, our framework will differentiate between biomass sources that are good for the forest and the atmosphere and those that are not.

"We must balance our energy needs with the needs of wildlife," says McDow.

THIS MAJESTIC LEGACY CAN BE YOURS

A bequest is a powerful way to make certain your values endure. To see sample language for your will or to take advantage of our estate planning resources, please contact:

Phoebe Geer
Toll-free: 1-877-677-7397
Email: legacy@edf.org
Web: edf.org/legacy



Galen Rowell/Corbis

Hope for a threatened desert wetland

A century ago, the Colorado River ran free from the Rocky Mountains to Mexico. Now its once-fertile delta in Mexico ekes out a precarious existence on less than one percent of the river's water.

Only a remnant of the emerald wetlands that once covered the delta remains. That remnant, the 40,000-acre Cienega de Santa Clara, is a principal stopover point for migratory waterfowl and home to hundreds of bird species, including the endangered Yuma clapper rail, a secretive shorebird whose cry sounds like hands clapping.

Last year the federal government, responding to population growth in the Southwest, prepared to fire up a controversial \$23 million desalination plant in Yuma, AZ, that would harm the Cienega by taking 25% of its water.

EDF water analyst

Jennifer Pitt took action. She brokered an agreement between the United States and Mexico to replace the water lost to the plant—a total of 30,000 acre-feet over the first year pilot phase of the project.

“This is the first time the U.S. or Mexico sent water to the delta,” says Pitt. “It’s an example of what needs to be done to save threatened ecosystems elsewhere in the seven-state Colorado River basin.”



The magnificent Colorado River carved the Grand Canyon, but by the time it reaches its delta, it has been reduced to a mere trickle.

Cracking down on the illegal coral wildlife trade

Neon-orange striped clownfish, iridescent black-and-white cardinalfish—the exotic sea creatures in people’s aquariums are dazzling. But most are pulled from remote coral reefs, part of an international trade that is decimating fish and coral populations.

Every year up to 30 million fish and 1.5 million live corals are harvested, the majority for sale in the United States. A major source for this trade is the “Coral Triangle” in the southeast Pacific, home to the world’s greatest ocean diversity. There, collectors often break off the corals they want or squirt cyanide in the water to stun fish, up to 40% of which die in transport.

In response to this strip-mining of coral reefs, EDF’s coral specialists and others are launching a project to improve international collection practices through more stringent standards and better enforcement. Existing U.S. laws banning imports of illegally procured corals have multiple loopholes, and international laws regulating the coral trade are weak.

Our effort, similar to those that curtailed U.S. trade in parrots and elephant ivory, will help preserve the world’s coral reefs.

In the Texas Hill Country, a campaign expands to save endangered songbirds

The largest nesting population of endangered golden-cheeked warblers in the world is found on Fort Hood Army base in Texas, where rumbling tanks and deafening explosions are commonplace. But the birds are doing fine, thanks to a program EDF helped design five years ago.

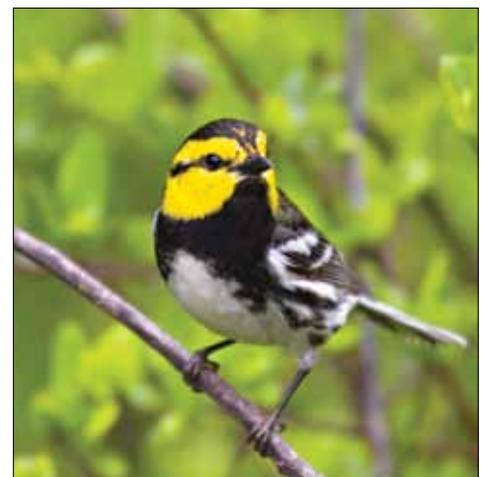
Under the plan, Fort Hood gets credits for restoring warbler habitat on private land outside the base. Hill Country landowners are paid to use techniques such as selective brush thinning and managed grazing to restore optimal nesting habitat. The landowners are enthusiastic about the program.

In fact, EDF’s songbird project is

working so well we’re expanding it from 6 to 34 counties, encompassing the entire Texas Hill Country. This time we’ll restore habitat for both the warbler and the black-capped vireo, another endangered songbird.

The system will offer credits to participating landowners from energy companies running transmission lines for wind power projects and others that want to help the birds.

“With our offset system, these projects can be completed while the birds thrive and a big chunk of a unique ecosystem is conserved,” says David Wolfe, EDF regional wildlife director.



Anti-sprawl campaigner: The golden-cheeked warbler.

A boondoggle is stopped and a rare wetland is spared

Even as EDF fights to save Mississippi Delta wetlands, it recently won a major victory nearby. A federal judge in Mississippi has prevented construction of the destructive Yazoo Pumps project. This Army Corps boondoggle would have drained for agricultural use some of the richest natural wetlands in America—up to 200,000 acres of the last bottomland hardwood forests in the Mississippi River basin—imperiling the rare black bear and other wildlife. In her ruling, the judge cited the concerned citizens who submitted comments (including thousands of EDF Action Network members).

This fight began nearly 35 years ago

when EDF attorney James Tripp first testified in opposition to the pumps. EPA ultimately vetoed construction under the Clean Water Act. But local sponsors brought a suit to overturn the agency's ruling. EDF, along with the National Wildlife Federation and the Mississippi Wildlife Federation, intervened in the lawsuit.

“The Yazoo pumps were a bad idea from the start—bad for flood control efforts, bad for water quality, bad for wildlife and bad for the taxpayers who would get stuck with the bill,” says Tripp. “We hope this is the final nail in the coffin of this horrendous project.”



Animals Animals

Louisiana black bears are hanging on in vanishing bottomland hardwood forests.

TOXIC CHEMICALS ARE IN YOUR HOME...

Phthalates
Used in air fresheners, paper, vinyl tile, wood varnishes and lacquers

Toluene
Used in paints, flooring adhesives, plumbing adhesives, adhesive removers

PFCs (perfluorinated compounds)
Used in clothing, cookware, food containers, floor wax

BPA (bisphenol A)
Used in food can linings, baby bottles, receipt paper, CDs and DVDs

Formaldehyde
Used in carpeting, soaps and detergents, cabinetry, glues and adhesives

PBDEs (polybrominated diphenyl ethers)
Used in furniture, electrical equipment, TVs and computers

...AND THEY'RE PUTTING YOUR HEALTH AT RISK

Phthalates

Linked to breast and prostate cancer, altered thyroid function, low birth weight and infertility.

PBDEs

Linked to fertility problems.

Toluene

Linked to breast and prostate cancer.

PFCs

Linked to reproductive development disorders.

BPA

Linked to breast and prostate cancer, altered thyroid function, low birth weight and infertility.

EDF is working to reform outdated chemical safety legislation. Join us at notaguineapig.org/join



THINK GLOBALLY, ACT LOCALLY

Laying the foundation for coordinated climate action

Scientists tell us that to avert catastrophic climate change, carbon pollution needs to be cut 50% or more worldwide by 2050. Neither the United States nor the United Nations has reached agreement on economy-wide policies, but EDF has been working with partners around the globe to achieve real reductions in emissions.

“There is no such thing as an American solution without a Chinese or Indian solution,” says Jennifer Haverkamp, our international climate director.

By raising awareness around the globe and empowering local partners, EDF is helping build momentum for comprehensive action on climate change.



Guenter Guni/istockphoto.com

Carbon farming in Asia

In Vietnam’s Mekong River Delta, EDF has partnered with rice farmers to cut emissions of methane and CO₂. The project also decreases the use of water, fertilizer and pesticides. Our work with farmers in China, India and Vietnam reduces more than 350,000 tons of emissions annually.



Christopher Pillitz/Getty Images

India cook stoves

We’re helping thousands of rural Indian families cut pollution by replacing traditional wood-burning fires (shown here) with clean-burning stoves powered by biodigesters that use bacteria to convert livestock manure into cooking gas.



imaginechina/Corbis

China green commuting

EDF’s partnership in China to reduce driving has expanded to more than 30 cities. Projects range from company programs to the world’s first low-carbon transit card, where half the fare goes to emissions-reduction projects.



Owen Franken/Corbis

Rainforest work in Brazil

Working with local allies, EDF is helping create an expansive tropical forest corridor in Brazil’s Xingu River Basin. Indigenous communities are now stewards of 20% of the Amazon, slowing deforestation and protecting biodiversity.



Peter Essick/Aurora Photos

At-risk island nations

EDF has joined with island states like the Maldives to draw attention to the risks they face from sea level rise. As a key player in UN climate talks, we’re also helping them make the transition to cleaner energy technologies.