

Science under siege

The Trump administration is chipping away at the science that environmental protection depends on. Here's why its efforts will fail.

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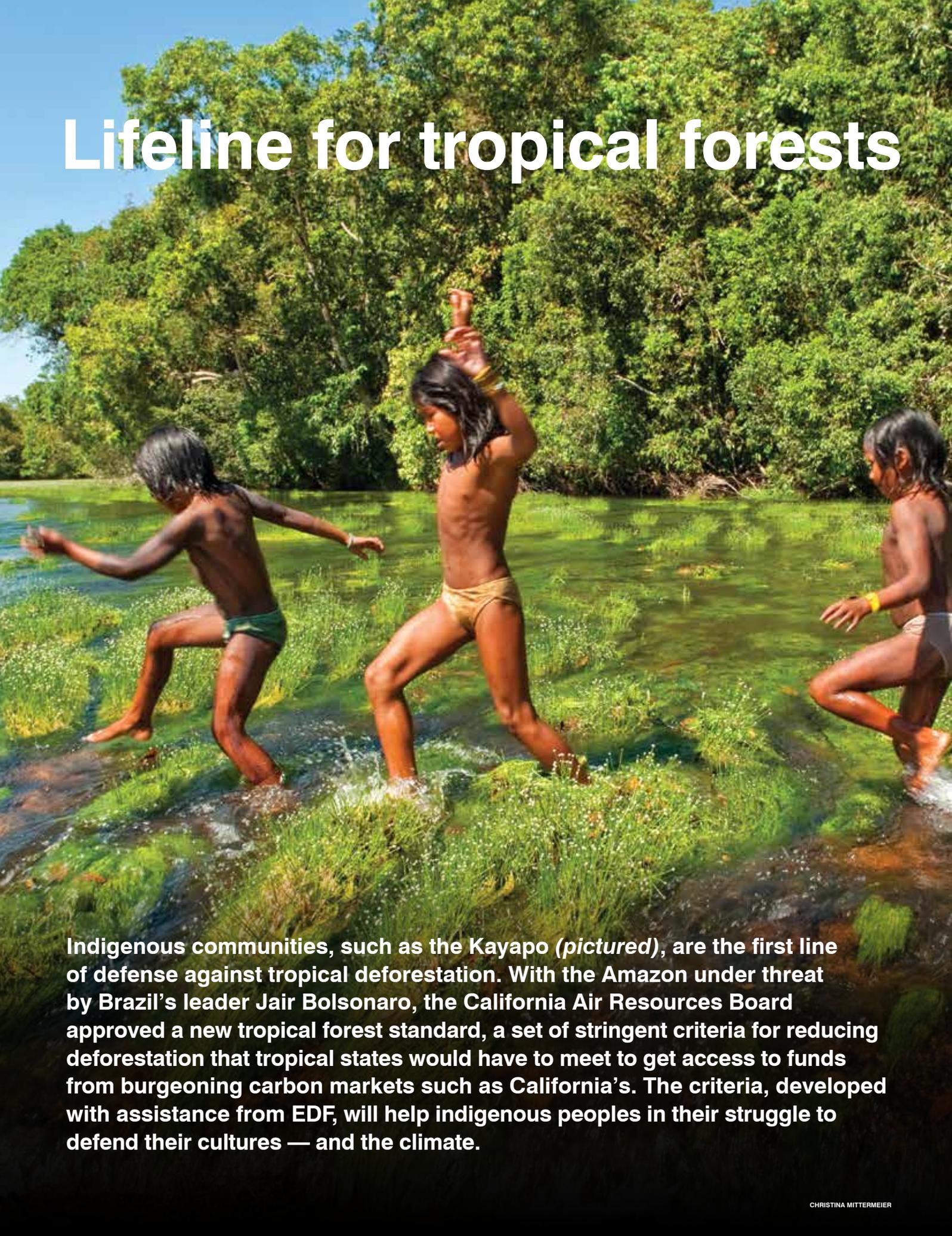
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sustainably

Lifeline for tropical forests

A photograph of three young Kayapo children playing in a shallow river. They are shirtless and wearing traditional loincloths. The child in the center has their arms raised, and the child on the right is also raising their arm. The background is a dense, lush tropical forest under a clear blue sky.

Indigenous communities, such as the Kayapo (*pictured*), are the first line of defense against tropical deforestation. With the Amazon under threat by Brazil's leader Jair Bolsonaro, the California Air Resources Board approved a new tropical forest standard, a set of stringent criteria for reducing deforestation that tropical states would have to meet to get access to funds from burgeoning carbon markets such as California's. The criteria, developed with assistance from EDF, will help indigenous peoples in their struggle to defend their cultures — and the climate.

Amping up the pressure for climate action



I often worry about the kind of world my two young grandchildren — and all children — will inhabit when they grow up. Will it be a chaotic place marked by extinction of species and mass migrations of people from land rendered unfit by drought and floods?

That prospect is alarming. And it's why EDF, together with so many other organizations and individuals, have never stopped pushing for federal climate action. Now I see clear signs that we're approaching a breakthrough moment.

After years on the sidelines, climate has suddenly become the number one voting issue for many Americans. In Congress, five climate bills have been introduced so far this year, two of them bipartisan and all including a carbon tax or fee.

As I talk with business leaders, I find that many of them — encouraged by their customers, employees and investors — are stepping up. In August, United Airlines announced a partnership with EDF to measure and accelerate greenhouse gas reductions. Utilities Xcel Energy and National Grid have pledged to reduce carbon emissions 100% and 80% respectively, and 13 oil and gas companies have set a target to reduce their methane emissions to near-zero levels by 2025.

With its Project Gigaton, Walmart intends to remove a billion tons of greenhouse gas emissions from its global supply chain by 2030. And leaders in the auto industry are pushing back against Trump administration policies. Ford, Honda, BMW and Volkswagen snubbed the administration's invitation to freeze their vehicles' fuel economy and instead reached an agreement with the state of California to build cars averaging nearly 50 miles per gallon by 2026 (*see p. 12*).

Most important, some in the business community are starting to put their lobbying muscle to work for climate. For example, the CEO Climate Dialogue has brought together 18 Fortune 500 companies and four environmental groups, including EDF, to advocate for climate legislation (*see p. 15*). The goal is to use an economywide price on carbon to reduce greenhouse gases 80% by 2050.

These initiatives add up to a welcome pushback against the denial of climate science in the White House. Science is the cornerstone of EDF's work with business and other allies. Today, we're fighting hard to advance science and defend it in court when it comes under attack, and we're making progress. (*see cover story, p. 8*).

All of this gives me hope. Now we must move, with all the tools at our disposal, to put a price on carbon and commit to a 100% clean energy economy and net-zero emissions by 2050. If we want our children and grandchildren to have a livable world, we must start making changes now.

Fred Krupp
EDF President



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. Donate online at edf.org/newsletter or by mail: EDF, Attn.: Member Services, 1875 Connecticut Ave. NW, Ste. 600, Washington, DC 20009



On the cover:

For the Trump administration, sound science has no place in policy decisions, especially on the environment. Instead of following science, the administration is attempting to deny and manipulate it, starting with climate change. But EDF is pushing back. *Solutions* senior writer Charlie Miller reports on our efforts to restore science to its central role in decision-making.

COVER PHOTOGRAPHY: THE VOORHES

Solutions

Editor Peter Klebnikov
Art Director Janice Caswell

Environmental Defense Fund
257 Park Ave. South
New York, NY 10010

Main number 212-505-2100
Membership questions 800-684-3322
or members@edf.org

WE WANT TO HEAR FROM YOU
Send feedback to address above or email editor@edf.org

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FIELD NOTES

NOEL LOPEZ FERNANDEZ



Cuba delivers a win for fins

Cuba passed its first national fishing law, a sweeping reform that will help protect the island's spectacular marine ecosystems and small fishing communities. EDF has been working with Cuban partners for nearly two decades to shift toward this science-based, sustainable fishing plan.

Nearly 25% of Cuba's coastal waters are protected — the island is home to some of the healthiest coral reefs in the Caribbean. But more than 70% of its fish populations are in decline. Under the new law, Cuba will expand the use of a low-cost scientific program designed by EDF to

keep tabs on dozens of important fish species and set limits on catch, including sharks and rays. Cuban waters are extraordinarily biodiverse, home to 60 different species of sharks and rays. The law also recognizes small-scale private fishermen, giving them social security benefits while limiting illegal fishing.

"This is a new vision for fishing in Cuba," says Valerie Miller of EDF's Cuba Oceans program. "We'll keep working with fishing communities and scientists to make sure this law keeps Cuba's oceans healthy."



A NEW WAY TO BOOST TEST SCORES

Diesel engine retrofits that reduce harmful air pollution from school buses can improve student performance, and do so more cost-effectively than reducing class size.

SOURCE: ECONOMICS OF EDUCATION REVIEW

“Unlawful, arbitrary and senseless”

EDF files a forceful response to EPA's proposed rollback of the Mercury and Air Toxics Standards. The limits on toxic pollutants from power plants prevent up to 11,000 premature deaths each year.

Add your voice to the effort to stop this dangerous attack in its tracks:
bit.ly/noHg80



SHUTTERSTOCK

Curbing emissions from a big box store

When Dan Katzenberger became an EDF Climate Corps fellow in 2018, he took on a formidable task: to calculate all the carbon emissions of the goods Best Buy purchases and sells. This summer, building off Katzenberger's work, the multinational retailer committed to slashing emissions caused by the use of their products 20% by 2030.

The commitment tackles a significant chunk of Best Buy's overall emissions.

"What we sell is far and above the greatest part of our footprint," says Katzenberger, who now heads Best Buy's renewable energy programs.

Now in its 12th year, the EDF Climate Corps program trains graduate students to help Fortune 500 companies, cities and public institutions pave the way to a lower emissions future.



Our kind of fashion statement

To help us meet our goal of restoring 1.5 million acres of monarch butterfly habitat, TOMS shoes partnered with EDF* to create a limited-edition shoe featuring the beloved butterfly. TOMS also donated \$50,000 to Biodiversity Works, a nonprofit that funds habitat restoration in central Texas, a critical waystation on the monarch's annual migration.

*EDF DOES NOT ACCEPT FUNDING FROM OUR CORPORATE PARTNERS.



OREMISTIME

Court halts drilling expansion

Roughly 60% of Americans — and all East and West Coast states except Alaska — oppose the expansion of offshore drilling in U.S. waters. Still, the Trump administration has proposed opening 90% of off-shore areas for drilling.

In a major victory in April, a federal judge in Alaska upheld an Obama-era ban on the expansion of offshore drilling in the Arctic and Atlantic oceans. The ruling could safeguard protections for more than 23,000 square

miles of deep-sea corals off the North Carolina coast, protections EDF helped secure.

“The judge made the right decision, legally and environmentally,” says EDF’s Elgie Holstein, “but the threats to our marine and coastal environments continue.”

The Interior Department relaxed safety regulations for offshore drilling that were meant to prevent a repeat of the 2010 BP Deepwater Horizon explosion.

“The oil industry is going into increasingly hostile environments like the Arctic and deep waters of the Gulf of Mexico,” says Holstein. “Accidents happen. That’s why more than ever we need strong rules and oversight.”

MEET EDF



Dr. Doug Rader, chief oceans scientist

What are you working on?

As waters warm and species move into new areas, we’re working to build climate resilience, so healthy fisheries can serve people and nature.

What are some challenges?

Fishermen dream of the huge catches of the past, but those conditions won’t return. The world is changing rapidly — and we need to prepare for it. With aggressive conservation and effective climate emissions controls, we can sustain larger catches than today.

What accomplishments are you proudest of at EDF?

We’ve made tremendous progress in reforming fishery laws in Belize, Cuba and Japan — and there are even positive signs in China. No one thought that was possible.

You’ve done 1,000 scuba dives. Anything stand out?

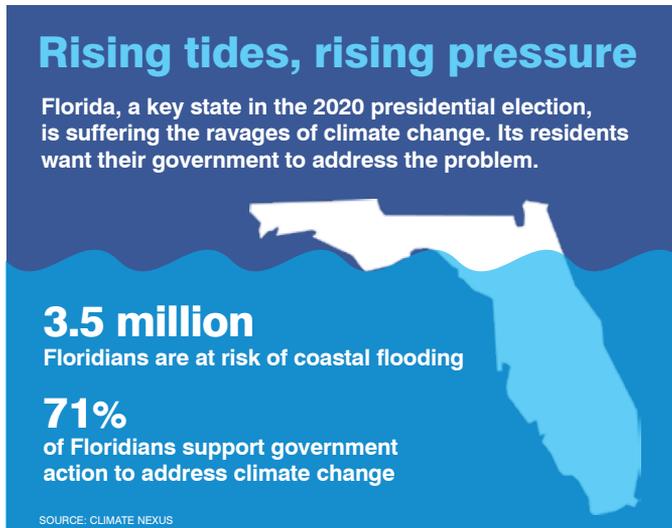
Being with a 40-foot juvenile humpback whale with eyes the size of saucers. The soul-touching intimacy with a huge animal is awe-inspiring. That rush is obvious. But I get the same rush observing coral. If you take time to look, you’ll always see something you’ve never seen before.



Victory on landfill pollution

In response to a lawsuit filed by EDF and eight states, a federal court ruled that the Trump administration must enforce limits on air pollution from more than a thousand landfills nationwide. Landfills emit climate-warming methane and dozens of hazardous air pollutants. The EPA set landfill guidelines in 2016, but the Trump administration never implemented them. More than 20,000 EDF members live within three miles of one or more of these landfills.

“Now this climate and air pollution that affects millions will finally be addressed,” says EDF attorney Rachel Fullmer. “This win is part of a streak of EDF court victories against Trump administration rollbacks.”



A sustainable feast

As Thanksgiving approaches, EDF is working with one of America’s largest turkey suppliers, Butterball, to help improve sustainability and reduce the environmental impact of its packaging. The work is part of a drive to engage more companies in Project Gigaton, Walmart’s plan to cut a billion tons of emissions from its supply chain by 2030. So far 1,000 Walmart suppliers are contributing to that goal.





TED WOOD/THE STORY GROUP

Exposed: Families at risk from oil and gas pollution

By Shanti Menon

As Trump tries to roll back air pollution safeguards, EDF and states move to protect families.

“I’M MAD,” SAID A TEARFUL ALEXIS Elliott, age 15. “I’m angry and disappointed that no one protected me.”

Alexis has uncontrollable bloody noses that arrive unannounced. She gets rashes and bruises that no makeup can cover. Last year she temporarily lost her

vision and was unable to walk. Her mother, a nurse, was dumbfounded by her symptoms — until a toxicology report revealed that Alexis had been exposed to benzene, a cancer-causing chemical that is released into the environment by oil and gas activity. It’s impossible to prove where Alexis’ exposure happened, but her family’s former home in McDonald, Pennsylvania, is near about 20 active oil and gas sites.

“People need to understand that this pollution isn’t something that could happen in the future,” said her mother, Jane Worthington, a member of EDF affiliate Moms Clean Air Force. “This is real. My child is real. This is happening now.”

According to a Moms Clean Air Force report, about 10 million people live, and nearly 3 million kids attend school, within half a mile of an active oil and gas site. In 2016, the Obama administration established groundbreaking national safeguards on climate and air pollution from

36,000 new and recently modified oil and gas wells across the country. These standards, supported by EDF research and the urging of 178,913 EDF members and activists, will prevent an estimated 300,000 tons of climate-polluting methane, 150,000 tons of smog-forming chemicals and 1,900 tons of benzene and other hazardous pollutants from getting into our air in 2020 alone. They ensure stronger protections for communities and lay the groundwork for future safeguards on 850,000 older drilling sites.

The Trump administration tried to prevent these protections from taking effect, an attempt EDF blocked in court. Now the administration is trying to eliminate all federal methane regulation, despite the heartbreaking protests of people like Alexis. She and more than 100 other concerned citizens testified at the EPA’s only public hearing on the issue, held in Denver, Colorado, in 2018.

“These rollbacks ignore fundamental science,” says EDF attorney Rosalie Winn. “They will strip protections as millions of Americans suffer the health and climate impacts of oil and gas pollution.”



PHOTOGRAPHY/144.COM

Patrice Tomcik: methane safeguards protect climate and reduce other air pollution.

EDF is fighting in court to preserve oil and gas safeguards and working with key states to reduce oil and gas pollution. The most efficient way to do this is to target methane, the main component of natural gas. Preventing emissions of this powerful climate pollutant will also reduce dozens of toxic air pollutants released along with natural gas.

Patrice Tomcik moved to bucolic Butler County, Pennsylvania, in 2009.

"I thought this gorgeous green space would be a healthy place to raise my kids," says Tomcik.

Then she learned about a plan to drill under her kids' school. Parents were able to quash that effort, but there are now six well pads in her school district, some within half a mile of the school.

Childhood cancer left her youngest, now 13, immunocompromised.

"Every day I send my kids to school and I'm wondering what they're being exposed to," says Tomcik, now a Moms Clean Air Force project manager. "I need these protections. My kids need these protections. Thirty-two hundred kids at this school need these protections."

Pennsylvania is the second-largest producer of natural gas in the country, and the number of active wells has increased 20% since 2017. Last year, the state, aided by EDF, established its first-ever limits on climate and air pollution from new oil and gas facilities. EDF is now working to expand Pennsylvania's safeguards to thousands more existing facilities, as well as with New York and Virginia as they consider methane rules.

In Colorado, which pioneered the

nation's first methane rules in 2014, we're working with state regulators on a bold vision to adopt next-generation rules.

In New Mexico, under the new leadership of Gov. Michelle Lujan Grisham, EDF is helping establish the state's first limits on methane pollution. This is a dramatic turnaround for a state with a 2,500-square-mile methane cloud hovering over its northwest corner.

Such progress can't come too soon for people like Shirley "Sug" McNall of Aztec, New Mexico. She gives visitors a "toxic

tour" of her town, pointing out leaky gas tanks, noisy compressors and a primary school just 400 feet from a gas well.

"The stink coming out of that well! Teachers complain they can smell it in their classrooms," says McNall.

“I need these protections. My kids need these protections.”

— Patrice Tomcik

McNall wants her great-grandson to breathe clean air. In San Juan County, 80% of kids under age five live within a mile of a well site. Young children, with their tiny bodies and rapid breathing, are particularly vulnerable to air pollution.

"If we don't have our health, all the jobs and money aren't worth a damn," says McNall.

Some major players in the oil and gas industry are also opposed to the planned EPA rollback. Shell, BP, Exxon Mobil and Equinor have all voiced support for federal methane regulations. These companies and others have set their own methane reduction targets, and some are testing new methane monitoring technologies, which EDF helped develop.

Ultimately, there's no substitute for strong federal pollution standards.

"State progress is critical, especially when it comes to controlling a fast-acting climate pollutant like methane," says EDF's Winn. "But not all states are moving forward on this. We're fighting in court for strong federal standards to ensure the whole country benefits from these protections."

>>> TAKE ACTION >>>

Tell the EPA: Stop the Trump administration's giveaway to the oil and gas industry. bit.ly/2Af2j

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DURANGO/JERRY MCBRIDE



Shirley "Sug" McNall lives in the epicenter of New Mexico's drilling boom and leads 'toxic tours' of the area.

In defense of science

By Charlie Miller



Researchers studying the effects of retreating sea ice on the biology of the Arctic Ocean.

The Trump administration has engaged in a relentless campaign to suppress and manipulate science for political ends. The consequences are grave — for the environment and for public health. EDF is fighting to restore objective science to its proper place.

EDF CHIEF SCIENTIST DR. STEVEN Hamburg wasn't expecting much when EPA Administrator Andrew Wheeler stopped by the agency's Science Advisory Board meeting last June. Wheeler, a former coal lobbyist, and Scott Pruitt, his predecessor, had until then ignored the board. Wheeler began the meeting by apologizing for not consulting the board sooner. But what he said next floored Hamburg: he claimed there was not enough time to consult the board on many of the EPA's major initiatives. The message came through loud and clear: Science does not matter in the Trump administration.

"Wheeler's statement was jaw-dropping," says Hamburg. "How can someone pretend they're making good policy without consulting the underlying science and with zero input from experts?"

Since he joined the advisory board in 2016, Hamburg has watched new appointees shift the panel away from good science. Before Trump, the membership was diverse, with each member bringing a critical expertise. Now, the key criterion for appointment seems to be support for the administration's agenda. The number of industry representatives has tripled. Donald van der Vaart is an anti-regulatory chemical engineer who castigates the "extreme environmentalist left" for its "job-killing climate change agenda." Richard Phalen is a researcher who believes the air is "too clean for optimum health."

"Trump abhors expertise of any kind," says Hamburg. "It gums up his agenda."

Whenever reality collides with the president's wishes, facts fall by the wayside, from the crowd size at his inauguration to his claim that voter fraud cost him the popular vote. On the environment, however, Trump and his enablers have taken matters to a new level.

Government scientists have been muzzled, bad data has been used to prop up misguided policies, and research that runs counter to the administration's ideology has been censored.

Exhibit A in Trump's war on science is climate change, which Trump once

labeled a hoax invented in China. Not only did he commit to withdrawing from the Paris climate agreement but he refused to sign an international statement on protecting the Arctic until all references to climate change were scrubbed.

Fighting back

One way EDF is fighting back has been to deploy good science in court.

"When EDF goes to court, we back our legal arguments with sound science, and we expose the shoddy science often used by the administration," says EDF Lead Attorney Tomás Carbonell.

This tactic helped us block plans to allow highly polluting trucks into the marketplace. These "glider trucks" marry a new truck body to an old, polluting engine. The result is a new truck that can spew 450 times as much harmful pollution as other freight trucks. Then-EPA Administrator Scott Pruitt used a study paid for by the manufacturer of glider trucks to justify his decision allowing more such trucks on the road. The EPA's own scientists disputed the study's false conclusion that the trucks are no more polluting than conventional trucks.

EDF joined a chorus of opposition to glider trucks, and we stopped the administration in court.

EDF is holding the administration accountable by exposing its links to fringe organizations. William Happer advised Trump on climate policy, although he isn't a climate scientist. A recent Freedom of Information Act request by EDF revealed that Happer, who resigned in September, received guidance from the Heartland Institute, a climate-denying "think tank" that once put up a billboard comparing people who accept climate science to Ted Kaczynski, the Unabomber.

Trump is taking direct aim at two powerful tools for fighting climate change — the Clean Power Plan

PHOTO: STEVEN HAMBURG



Dr. Steven Hamburg, EDF's chief scientist, is on the front lines of the science wars.

and clean car standards. This summer, the EPA completed a full-scale rollback of the Clean Power Plan, designed by the Obama administration to curb carbon emissions from power plants. In August, 22 states and seven cities filed suit to block the rollback. On the following day, EDF joined a coalition of 10 environmental and public health organizations and also sued. We laid the groundwork for this legal challenge by filing detailed legal and technical comments showing the rollback is unlawful and unjustified. EDF also provided testimony opposing the rollback at public hearings, mobilized EDF members and provided accurate

TRUMP LOSES IN COURT

80% Percentage of cases Trump's EPA has lost before the D.C. Circuit Court

19% Percentage of cases the EPA lost before the same court under the previous administration.

information to Congress and the media.

EPA Administrator Wheeler absurdly claims his plan will reduce carbon pollution from the power sector by 34%. In fact, according to a recent EDF analysis of the EPA's own data, the plan will actually be worse than doing nothing in many states. The proposed replacement plan would result in significant increases in both climate pollution and unhealthy soot and smog.

America's popular clean car standards, which are saving drivers money at the pump while cutting pollution, are also under attack (*see p. 12*). In 2018, the administration committed to weakening these standards, selling its plan, in part, through bogus science.

This September, the administration unveiled a sweeping rollback of clean car rules that will mean higher gasoline

prices for consumers and billions of tons of carbon pollution. The new rules also challenge the "California waiver," a long-standing provision of the Clean Air Act that allows California to set its own, tougher standards.

Even some automakers think Trump has gone too far. Remarkably, four automakers, including Ford and Honda, rejected his plan and forged a pact with California. The agreement calls for much stronger standards than Trump wants, and he was reportedly "enraged."

On September 6, EDF appeared in court to block the weakened car rules. Expect a protracted legal fight.

Under this administration, even weather science is politicized. After federal scientists at the agency responsible for weather forecasts contradicted Trump's erroneous predictions about

Hurricane Dorian in September, the Secretary of Commerce threatened to fire top officials at the agency.

The administration's policies also play out in less high-profile but equally consequential ways, such as the large proposed budget cuts at the prestigious National Science Foundation and elsewhere that would devastate federal science and research. Congress later blocked Trump's budget proposals, but the proposed cuts reveal the administration's skewed priorities.

Even the most popular laws are not immune. In August, the administration unveiled rules that will substantially weaken the Endangered Species Act (*see box*). The new rules fail to account for climate change over the coming decades and, for the first time, allow economic considerations to enter decisions about

Defending the Endangered Species Act

The Trump administration has attacked the science underpinning the Endangered Species Act, one of our nation's most effective environmental tools. This impedes the listing process and threatens the survival of thousands of species. Here's what's happening:

How the Act is supposed to protect species

Staff at the key agency, the U.S. Fish and Wildlife Service, consider if species are threatened solely on the basis of best available science.

The agency lists a species as threatened or endangered and designates habitat critical to its survival.

The agency develops conservation strategies on current and former habitat, including areas that can be restored in the future.

All federal agencies must consult with the agency to ensure that their actions do not jeopardize a species or its habitat.

How the new rules undermine the Act

New rules illegally delete language requiring use of best available science — and improperly introduce financial considerations into listing decisions.

The new rules eliminate the consideration of climate change and other long-term risk factors in assessing the health of species.

The agency severely restricts which types of habitat can be designated for restoration.

The new rules will vastly reduce the number of projects that require agency consultation.



whether to list plants and animals.

“Many of the rule changes are overtly political and do nothing to enhance science-based decision making,” says Holly Pearen, EDF Ecosystems attorney.

Censoring science

Censorship is another way Trump wages war on science. Soon after his inauguration, the EPA removed or changed almost 2,000 references to climate change on the agency’s website. An EDF FOIA request revealed that Administrator Pruitt was personally involved in the purge.

- An investigation by *Politico* revealed the Agriculture Department refused to publicize studies by agency scientists warning of the effects of climate change on agriculture. The agency now avoids the phrase “climate change” altogether.



FLICKR/BILL ALDEN

EDF has filed suit to block the administration’s plans for increased carbon emissions.

- In July, a State Department intelligence analyst resigned after the White House tried to block portions of his testimony to Congress. The testimony warned of the current and future effects of climate change on national security.
- In November 2017, the National Climate Assessment reported that climate change would eventually cost thousands of American lives. The report was released on Friday (the day after Thanksgiving), a strategy for burying bad news called a “Friday news dump.” The tactic backfired. EDF and our allies contacted reporters, resulting in headlines around the country.
- At the Interior Department, staffers delayed for 10 months the release of a report on flooding risks in the national parks so officials could expunge every mention of climate change. EDF and allies generated enough pressure to have the cuts restored.

Some attacks on science have been more systematic. Before leaving the EPA, Pruitt devised a plan to block the agency’s use of research unless the underlying data is publicly available. But sometimes that information is kept private for good reasons, such as patient confidentiality. Pruitt’s restrictions threatened to undermine long-standing rules protecting public health. In September, however, Administrator Wheeler, following intense pressure, dropped current plans to restrict this type of science.

An unpopular war

Trump’s war on science plays poorly with the public. A recent poll found 86% of Americans trust scientists. Trump’s own party is starting to back off his excesses. The influential Republican strategist Frank Luntz, previously a doubter on climate, now supports action. Recently, speaking before a Senate committee, he said: “I’m here before you to say that I was wrong.”

Many other Republicans see the writing on the wall. Like their Democratic counterparts, young Republicans rank climate change high on their list of priorities. One conservative activist says, “I don’t know anyone involved in young, right-of-center politics who doesn’t believe climate change is an issue.”

EDF and a coalition of allies, from the Union of Concerned Scientists to our million-strong affiliate Moms Clean Air Force, are getting the word out on climate. Pushback from voters is changing political calculations on Capitol Hill.

Ultimately, the best defense may be to let science speak for itself. EDF is countering the administration’s failures with our own science. Because the administration won’t monitor methane, a potent greenhouse gas, EDF is working with Stanford University and energy companies to develop new methane detection technologies such as drones and sensors.

“Trump’s campaign to distort and suppress science will fail,” says Hamburg. “You can only hide the truth for so long. EDF is fully engaged, and we’re winning.”

What EDF is doing about it

EDF is helping develop better ways to quantify the many economic benefits of conservation.

EDF and partners are gathering evidence and legal arguments against this change, providing clear basis for litigation.

We’re helping expand restoration of critical former habitat by providing technical resources and scientific guidance to states and landowners.

EDF proposes a verification system using satellite data to track projects approved in critical habitat. We’re working with states to support landscape-scale biodiversity.

The Trump clean car rollback falters

In a surprise shift, automakers joined forces with California to keep America moving forward with clean cars — defying the administration’s efforts to gut clean car standards.

MAJOR AUTOMAKERS AND California agreed on a voluntary framework to produce cleaner cars nationwide, upending the Trump administration’s efforts to roll back federal clean car standards. Ford, Volkswagen of America, Honda and BMW have developed principles that provide for continued climate pollution reductions from their fleets nationwide, comparable to raising average fuel efficiency 51 miles per gallon by 2026 — well beyond the administration’s proposed 37 mpg ceiling.

“Ever since the Trump administration signaled it was going to attack clean car laws, we’ve been urging automakers to deliver climate pollution reductions,” says EDF General Counsel Vickie Patton. “This progress really cuts the legs out from under the Trump rollbacks.”

Clean car standards are the best tool we have to reduce climate pollution from transportation — the biggest source of greenhouse gases in the United States. The EPA’s current standards, developed



Major automakers agree: Clean cars need to keep moving.

with strong support from states, automakers, labor and environmental groups, including EDF, are projected to eliminate billions of tons of carbon dioxide and save consumers \$1.7 trillion at the gas pump. They support nearly 300,000 jobs, according to the BlueGreen Alliance. Seven out of 10 voters want to leave these standards in place.

Yet Trump officials want to freeze U.S. progress and attack states’ long-standing right to implement their own clean car standards. According to the Trump administration’s own estimates, the freeze would add more than 7 billion tons of carbon pollution to the air by 2100 — equivalent to the annual emissions from 1,800 coal plants — and cost 60,000 jobs.

California is not alone in standing up to the rollbacks. A coalition of 23 states has sued to stop the administration from revoking state authority to protect millions from this pollution.

The clean car framework gives automakers an extra year to meet the rigorous climate standards that the Obama administration adopted in partnership with California. At press time, more manufacturers were expected to join in, recognizing the momentum toward cleaner cars.

“We are preparing for extensive litigation against these unlawful rollbacks with a broad coalition of allies,” says Patton.

“We want to enforce the law and secure these climate protections for the American people.” EDF has also challenged other unlawful aspects of the clean car rollbacks in court.

“This progress really cuts the legs out from under the Trump rollbacks.”

— EDF General Counsel Vickie Patton

The automakers’ framework is a break with Trump. Some had approached the newly elected president for more flexibility in the standards. They got more than they bargained for. The administration announced a rollback so extreme it threatened to leave automakers behind in the global race toward clean vehicles.

An enraged Trump blasted the auto executives on Twitter, and the administration launched an antitrust investigation of the four companies. Patton says the administration is vulnerable now that automakers have shown their readiness to meet more protective standards.

“The Trump administration is asserting we can’t make progress on clean cars,” says Patton. “But automakers are now saying, ‘No, actually, we can do a lot!’ This shows how manifestly unreasonable these rollbacks are in the real world.”

Shanti Menon



State leadership drives pollution reductions.



JULIE DERMANISKY

New hope in a land of loss

LEAH CHAN-TAING'S HOME SITS 50 feet from the water in the small shrimping community of Buras, Louisiana. Pinched between the rising seas of the Gulf of Mexico and the stressed banks of the Mississippi, she watched the waters rise last summer when the latest tropical storm hit the coast. Even before the mandatory evacuation order came, she hit the road, photo albums and a few hastily assembled items of clothing in the trunk.

"I feared we'd get eaten by the water," says the shrimper and cafe owner.

Stories from coastal Louisiana are stories of what used to be there. Everyone knows of an islet, a home, an entire marsh now swallowed by the sea.

"We exist in a continuing condition of loss," says EDF's head of coastal resilience, Steve Cochran, of New Orleans.

"Even so, living here is wonderful."

Louisiana's exquisite marshes and wetlands are disappearing at a rate of a football field every 100 minutes. Scientists predict that without action, up to 4,000 square miles will be lost by 2050, fueled by a relentless feedback loop of climate change, rising seas, floods and damage to wetlands. As many as 10,000 homes may be lost.

But Chan-Taing and almost 3,000 other Louisiana residents aren't sitting idly by. They joined EDF in a year-long community-driven process led by local funder Foundation for Louisiana, in partnership with the state, to help them envision a brighter future. Over the course of 71 meetings and planning sessions, residents took a clear-eyed look at the risks they face and drew up strategies and projects to confront them. These were presented to Governor John Bel Edwards.

The state acted fast. In the first plan of its kind in the U.S., it invested \$41 million in community resilience projects. Design and construction is already underway, with efforts including floodproofing and elevating homes, paying for voluntary relocations and providing infrastructure for communities who stand to receive displaced people. The plan, dubbed LA SAFE, incorporated almost every suggestion the communities made.

"LA SAFE offers a model for Louisiana and climate-vulnerable communities everywhere," Edwards said.

One of the regions to benefit is Plaquemines Parish, ground zero in Louisiana's land-loss crisis. Thanks to LA SAFE, this barely connected filigree of spits, islets and patches of land stretching into the Gulf of Mexico will receive a new harbor designed to protect shrimp boats from storm surge and an expansion in mental health services.

"The range of projects funded was striking," says Cochran. "You only really get that with this extent of community engagement."

Three days after the latest storm ended, Chan-Taing returned to Buras to find her home still standing. Thanks to LA SAFE, she says she feels better prepared to face the future.

EDF is also helping protect the land. Cochran is now managing Restore the Mississippi River Delta, a coalition of local and national nonprofits advocating large-scale land preservation projects, such as marsh restoration and sediment diversion, under Louisiana's \$50 billion, 50-year plan to contain future losses.

"Good planning hinges on a clear understanding of the science," Cochran says. "We make sure people have the full picture so they can make informed decisions."

Chan-Taing puts it more succinctly. "EDF told us the truth," she says.

Tasha Kosviner

JULIE DERMANISKY



Louisiana resident and activist Leah Chan-Taing



CHRISTOBALRAMIREZ.COM

Preparing fisheries for climate change

THE HUMBOLDT CURRENT, LOCATED off the coast of Chile and Peru, is one of the world's great ocean ecosystems, providing close to 15% of the entire global fish catch. Cold, nutrient-rich waters from the south intersect with warm tropical currents, supporting phytoplankton and an extraordinary variety of marine mammals, seabirds and fish.

Today, climate change and overfishing are upsetting the balance, driving some species toward the poles and allowing others like Humboldt squid to proliferate. The changes ripple through the fishing sector, from industrial anchovy fleets (the world's largest fishery) to 170,000 artisanal fishermen who traditionally catch hake, a mainstay in local diets.

As waters warm, many squid are moving from Peruvian into Chilean waters, testing international fishing agreements and sparking conflicts over fishing

grounds and profits. The South Pacific Regional Fishery Management Organization has agreed to start managing squid in international waters, but it won't be easy.

Even within Chile, where squid exports are growing, there is disagreement between artisanal and industrial fishermen over who should have access to squid. In January, protesters took to the streets in Santiago over what has been dubbed "the Squid War."

"What's happening with squid is emblematic of the uncertainty with climate change," says Erica Cunningham, EDF's South America oceans director. Squid, like anchovy, are subject to boom-and-bust cycles that could intensify.

As more marine species cross borders around the world, countries — and local communities — need to work together on management.

In June 2018, EDF brought together fishery leaders from Peru and Chile for a meeting at our Washington, D.C., office. Working with us, the countries are now sharing information on fish stocks and working toward the development of an early warning system and stock-sharing arrangements to help cope with the changes. Using high resolution modeling provided by NOAA, our goal is to help plan for the future.

"EDF has been an honest broker in the process," says Renato Guevara, the scientific director for IMARPE, Peru's national fisheries research institute. "They are helping us navigate the science in a rapidly changing environment."

Climate change is affecting fisheries worldwide. To help policymakers, EDF is working with others to develop a set of climate resilience principles — focusing on international collaboration, science, social equity and forecasting — that can be applied globally.

"This is the new frontier," says Merrick Burden, director of resilient fisheries at EDF. "The goal is to build a scientific foundation for climate-ready fisheries."

Scientists from EDF, UC Santa Barbara and elsewhere have published peer-reviewed research showing that adaptive, proactive fisheries management can keep oceans productive, if the rise in global temperatures is kept below 2 degrees Celsius. The study examined data from more than 900 fish stocks. With the right policies, we can increase the number of fish in the sea by nearly a third by 2100, improving food security and boosting fishing revenue.

For Chilean fishermen like Jose Chauara, who recently obtained quota to fish for squid, there's hope. "We face a lot of uncertainty," he says, "but having the flexibility to catch different species as circumstances change will allow us to fish sustainably and maintain our livelihoods."

Rod Griffin



ALAMY

Humboldt squid, climate migrant

Businesses lobby for a price on carbon

WHEN THE INTERGOVERNMENTAL Panel on Climate Change released its now famous 2018 report sending the strongest warning yet of the impending climate crisis, Amanda Sourry's first thought was of her children.

"As a parent it's incredibly hard to ... think about what that really means," the president of Unilever North America said.

Now Sourry has joined the CEOs of 17 other global companies, including Ford, PG&E and Shell, to lobby for strict federal legislation to limit climate pollution. The CEO Climate Dialogue calls for an economywide price on carbon with the goal of reducing greenhouse gas emissions 80% by 2050. In effect, these Fortune 500 companies and global brands are asking to pay for what they emit.

Victoria Mills, EDF+Business managing director, called the move "a breakthrough moment."

"Years from now, we will see this as the moment business engagement on climate policy became an unstoppable movement," says Mills who, along with three other nonprofits, helped recruit the companies and draw up the group's guiding principles.

The group is presenting a united front when providing input on proposed carbon pricing bills and meeting with congressional staffers as it seeks to shape the development of climate legislation.

For many, the CEO engagement is a ray of hope.

"This is a sign the good guys in corporate America will show up on Capitol Hill and fight for climate action," says Sen. Sheldon Whitehouse (D-RI).

Increasingly, companies recognize climate change as a risk to their bottom line and reputation. Energy security and access to natural resources are at stake. Pressure from consumers and shareholders is mounting. According to an EDF report, *Business and the Fourth Wave 2019*, more than nine in 10 business leaders say consumers are likely to hold them accountable for their environmental impact.



"The cost of inaction is greater than the cost of action," says Unilever's Amanda Sourry.

Says Unilever's Sourry: "The cost of inaction is greater than the cost of action."

To date, more than 600 companies have announced emissions reduction targets and nearly 200 have committed to 100% renewable energy. Maintaining pressure on companies to advocate public policies consistent with their sustainability commitments is key to EDF's work.

"The urgency of the climate challenge demands a bigger response than cutting their emissions," says Mills. "Companies must also support policies to drive down emissions across the entire economy."

This is not the first time business has tried to influence Congress on climate. What sets this initiative apart is that it doesn't prescribe a specific solution. While the group's guiding principles call for a carbon pricing policy that protects people and the natural world and prevents disadvantaged communities from bearing the cost (for example, through increased energy bills), they stop short of defining exactly what form the legislation should take.

The flexibility is intentional as the group attempts to gather support from members of both parties.

"The reality of politics is that durable change comes from broad coalitions," says EDF president Fred Krupp.

A recent EDF report, *The Blind Spot in Corporate Sustainability Rankings*, revealed that many ranking systems fail to consider lobbying activities. Too many

companies receive plaudits for their environmental record while opposing climate policies behind closed doors.

EDF recently called out Amazon and Google publicly for providing financial support to the Competitive Enterprise Institute, a group that questions the science behind climate change.

"A company shouldn't be labeled a sustainability leader if it publicly supports climate action but privately funds those who lobby against it," says Mills.

Tasha Kosviner

Corporate trailblazers

WHO ARE THEY?

The 18 companies are: BASF Corp., BP, Calpine Corp., Citi, Dominion Energy, Dow, DSM North America, DTE Energy, DuPont, Equinor, Exxon, Ford, LafargeHolcim, PG&E Corp., PSEG, Shell, Total, Unilever. *Nonprofit partners are:* EDF, World Resources Institute, The Nature Conservancy, Center for Climate and Energy Solutions.

WHAT DO THEY WANT?

Legislation aimed at reducing greenhouse emissions 80% by 2050.

WILL THEY GET IT?

In the long term, yes! How fast depends on the outcome of the 2020 elections.

Heal a bird, heal the land

By Peter Klebnikov

Some animals are of outsize importance to their ecosystems. And some ranchers and farmers take special care of these special creatures, because they're committed to protecting biodiversity on their working lands. EDF spotlights three extraordinary bird species — and salutes the men and women who help them.



FLICKR/PETER TAMAS AND JOHN DAVIDSON

Safe harbor for a secretive bird

AMY GREER WILL ALWAYS remember the thrill of finding a black-capped vireo nest on her ranch in the geographic center of Texas. “It’s such an incredible little bird,” she says. “So secretive.”

Black-capped vireos are a precise indicator of ecosystem health. When the bird was listed as an endangered species in 1987, it was on the brink of extinction. Only 350 were known to exist in the wild.

Thanks to the efforts of landowners like Greer (*above*), the tiny songbird has made a remarkable recovery and is no longer on the endangered species list.

“My husband George and I

understand how important ecological diversity is for the plants, animals, insects and birds that live here, aside from us and our cattle,” says Greer, a wildlife biologist. “We’re sixth-generation ranchers but we know it’s not really our ranch. It’s part of the planet.”

In 2008, the Greers decided to participate in Safe Harbor to reestablish vireo habitat on their property in Brady, Texas. Created by EDF, Safe Harbor allows working landowners to protect species without additional government intervention. To date the approach has saved more than 4 million acres of prime habitat.

Each spring, the Greers move their cattle from 400 acres of shin oak. Then they cut out invasive prickly pear, which allows native grasses and

forbs to return, as well as insects that vireo chicks require. “The birds found the habitat and used it,” says Greer. The native grasses retain water in times of drought, which aids their cattle. “Everything benefits when all is in balance,” says Greer.

“Everything benefits when all is in balance.”

— Amy Greer, rancher

They’re now enlisting other landowners to restore habitat.

“We couldn’t have done it without EDF,” says Greer. “You have to understand how the system works. Otherwise you just set yourself up for failure, especially given the pace at which the climate is changing. We need to be open to changes. We need to pay attention. We need to wake up.”



THE WILSON LEGACY

This feature honors the memory of Robert W. Wilson, a longtime EDF supporter and champion of harnessing market forces to drive environmental progress. See edf.org/wilson



ALAMY AND JIM COX/TALLTIMBERS.ORG

Protecting Georgia's "redwoods" for dozens of species

IN THE SOUTHEAST, THE LONGLEAF pine savanna that once covered 90 million acres and harbored up to 40 plant species per square yard is 98% gone.

In this compromised ecosystem, the red-cockaded woodpecker stands out as a survivor. The endangered woodpecker nests only in the oldest longleaf pines. It's considered a keystone species because after it abandons its intricate cavity nest, 27 species take over the nests for roosting or nesting, including wood ducks, flying

squirrels, eastern bluebirds and great crested flycatchers.

Warren Bicknell, a third-generation tree farmer in Thomasville, Georgia, has intact stands of old-growth longleaf pine.

"They're majestic trees," he says. "Woodpeckers have nested here for 400 years. I think of the stories these trees could tell. They're our redwoods."

Bicknell (*above*) signed a Safe Harbor agreement to help the woodpecker. "I was very hesitant to join at first," he says. "I

didn't want any government agency on my property. But it's been a real pleasure." Saving old trees for the woodpecker allows him to conduct prescribed burns to control undergrowth, helping the imperiled ecosystem — and his timber operation. "EDF had the right idea," he says. "It's a win-win." Bicknell has since influenced neighboring landowners to do the same.

"The red-cockaded woodpecker has had enough hardships," he says. "I want to help it if I can."

Saving grouse on Nevada's sagebrush sea

"WE USED TO HUNT SAGE GROUSE," says Agee Smith. Smith and his family work a 37,500-acre cattle ranch on the eastern edge of the Jarbidge Wilderness in eastern Nevada. The high-elevation meadows are ideal greater sage grouse habitat.

The greater sage grouse is considered an umbrella species because protecting it helps 350 species on the range.

But today, the grouse is under enormous threat as the Trump administration loosens protections on much of its range to facilitate a drilling boom.

To some extent, the fortunes of the grouse and the humans who share its

habitat are intertwined. In 1985, the boom and bust economics of ranching nearly forced the Smiths to quit ranching.

Instead, they diversified their business and received payments for restoring creeks and wetlands. They're also helping the grouse through a form of habitat exchange, a tool pioneered by EDF. These exchanges compensate landowners for restoring habitat to offset disturbances elsewhere. The result is a net gain of habitat.

"It's a good idea," says Smith (*below*). "If you want broad-scale improvement on the land, you need to give people incentives to change."

Now the beavers have returned,

creeks and wetlands are back and grazing lands are more resilient. And Smith has gotten used to seeing greater sage grouse following his livestock and browsing on insects.

"I've ridden every corner of the ranch and thought I knew everything," he says. "But I didn't know anything about how things are connected. The grouse is a very important part of the sagebrush ecosystem. Healthy habitat benefits every part of our operation."

"My daughter is already taking conservation to the next level," says Smith. "So are my grandchildren. I'll never go back to the old way of doing things."

SHUTTERSTOCK AND DAN HOTTLE/USFWS





Your pet has a big environmental paw print. Here's how to shrink it

EVERY DAY, 70,000 CATS AND DOGS are born in the United States. Many will end up in shelters, where 1.5 million are euthanized annually. Before buying from a breeder, consider adoption or fostering. You'll get all the fun of a furry friend while lightening the load on shelters and reducing the number of unwanted pets in the world.

If you are committed to buying a pet, avoid so-called puppy mills, which are frequently inhumane and sometimes serious environmental violators. And guard against adding to the population overload by making sure your new friend is neutered or spayed.

■ Find the right diet

UCLA research shows that dogs' and cats' diets account for almost a third of the country's environmental impact from meat production. Unfortunately, switching to a plant-based diet isn't always viable for pets. According to the American Society for the Prevention of Cruelty to

Animals, it is possible, though rare, to keep a dog healthy on a plant-based diet, but cats need meat to survive.

"Cats' digestive systems aren't designed to handle it," says ASPCA veterinarian Laura Stern.

Even without abandoning meat, pet owners can do right by their animals and the planet. You might want to rethink premium pet foods made only with high-grade meats. Organ meats are a valuable source of nutrients for cats and dogs that might otherwise end up in landfills. Also, beware of trendy grain-free dog foods. The FDA has linked several popular brands to heart disease in dogs.

■ DIY chow?

If you have concerns about animal welfare or toxic preservatives in cheaper foods — and you have plenty of time! — try making your own pet food. There are recipes online from sites like Damn Delicious and Canine Journal. This will let you choose local and ethically raised

meats, or cheaper offcuts from your butcher or local meat counter. Many freshly prepared pet foods claim to avoid toxic preservatives, though they come at a premium cost. Whatever you choose, be sure to consult with your veterinarian before making changes to your pet's diet.

■ Walkies!

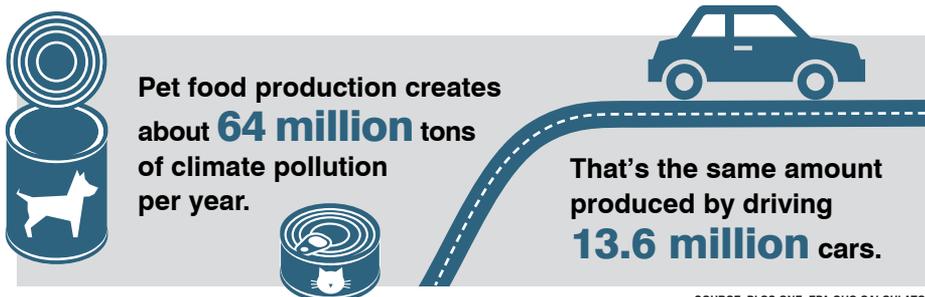
Keep your dog on a leash and your cat indoors. Cats kill billions of birds and mammals each year, according to the U.S. Fish and Wildlife Service. Feral and free-roaming dogs are a threat to the survival of almost 200 species around the world, including some that are critically endangered, says the International Union for Conservation of Nature.

If your cat does go outdoors, give it a bell or a brightly colored collar to help alert birds to its presence.

■ Avoid toxic chemicals

Using pet products can bring toxic chemicals into your home. A good rule of thumb, says EDF's toxic chemicals expert Boma Brown-West, is to make sure your pet products are free of chemicals that humans should avoid. The Environmental Working Group advises using kitty litter made of plant sources such as wheat, avoiding flea collars that may contain harsh chemicals and steering clear of ingredients such as parabens, PEG, urea and fragrance in pet shampoos.

Jim Motavalli



MEMBER PROFILE



A view from the front lines

For years, Kacey Conway worked on the frontlines for the environment in Grand Junction, Colorado, inspecting oil and gas wells for the Bureau of Land Management and battling invasive plants. Seeing the recent attacks coming from Washington, D.C., Kacey threw her support behind EDF.

"EDF went to court on day one to keep this administration in check," she says. "We can't always do much as individuals. It's in groups like EDF that we have the power."

Having seen methane pollution firsthand as a well inspector, Kacey especially appreciates our work aimed at stopping leaks of this potent greenhouse gas from oil and gas operations.

"EDF is helping ensure companies take responsibility for this waste," she says.

Kacey recently included EDF in her will. "I find an organization I believe in and invest in them. That's how we get change that lasts," she says.

Join forces with Kacey and 1,500 other EDF members by remembering EDF in your estate plans. See p. 7 for full details.

ASK AN EXPERT



Talking climate change with kids

Whether from school strikes or science classes or living through extreme weather, kids are increasingly aware of the climate crisis. EDF staffers share how they manage anxiety and instill hope in their kids.

"My daughter's generation is very direct about climate change — you're either with us or you're against us. I try to teach her that policy progress only comes from building consensus. From considering everyone's views, needs and concerns."

— **Hanling Yang, director, global energy, mom to Zizhan Luo, 23**

"I teach my kids that humans are resilient. We visited Port Aransas, Texas, which was heavily hit by Hurricane Harvey. Some of the buildings show the waterline at the height of the floods, which made it very real. But we also saw the town

was thriving. I made a point of showing them how the town had rebuilt."

— **Stacy MacDiarmid, manager, energy communications, mom to Miller, 8, and Wells, 5**

"My daughter loves hunting for worms. It's important to foster their love of the outdoors — not just because the human impulse is to protect what we love, but also because being in nature makes you feel good."

— **Dan Upham, manager, executive communications, dad to Beatrix, 2, and Violet, 6**

"My daughter has been participating in the school strikes

for climate. Of course I'm sad she has these worries on her shoulders at such a young age. But kids are more resilient than we think. And they take their cues from us. I work for an organization that is laser-focused on finding solutions. That's the message I convey to my kids: There are a lot of good people in this fight. Action and optimism — not despair — is how we're dealing with this."

— **Tasha Kosviner, Solutions managing editor, mom to Zola, 12, and Lenny, 9**

»»» TALK TO US »»» How do you discuss climate change with your kids or grandkids? Let us know at editor@edf.org.



2.5 million strong!

This spring EDF surpassed 2.5 million members. A warm welcome to our newest members and a huge thank you to existing members for your ongoing support and your steadfast activism. We couldn't do what we do without you. *Thank you.*

“Unite behind the science. That is our demand.”

— Greta Thunberg
Climate defender, age 16

