EDF ENVIRONMENTAL DEFENSE FUND®
Finding the ways that work

Solutions

Vol. 51, No. 4 / Fall 2020

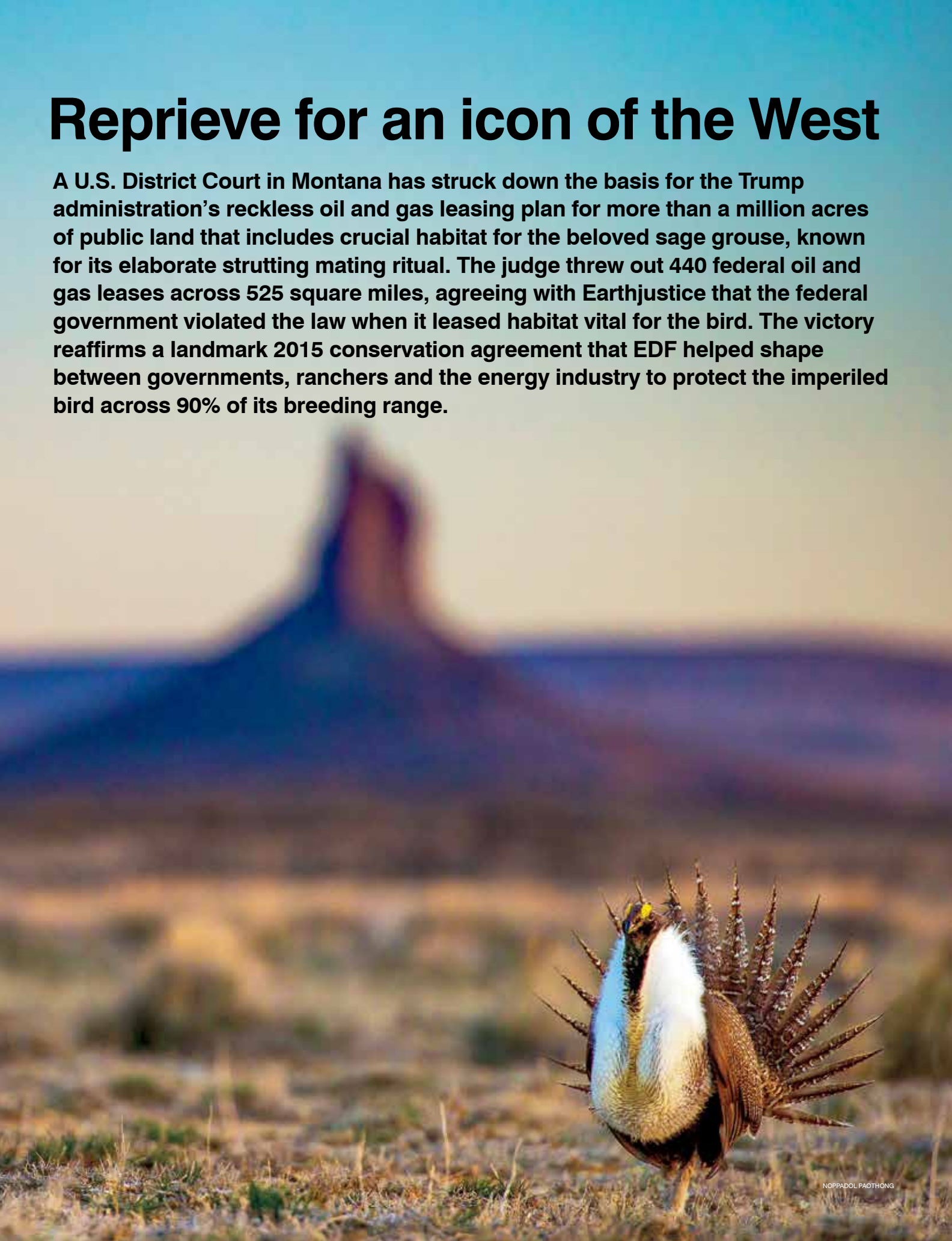
The pathfinders

From farmers to fishermen and from local officials to community leaders, everyday heroes are bringing bold environmental ideas to life. EDF salutes them.

PAGE 9

Reprieve for an icon of the West

A U.S. District Court in Montana has struck down the basis for the Trump administration's reckless oil and gas leasing plan for more than a million acres of public land that includes crucial habitat for the beloved sage grouse, known for its elaborate strutting mating ritual. The judge threw out 440 federal oil and gas leases across 525 square miles, agreeing with Earthjustice that the federal government violated the law when it leased habitat vital for the bird. The victory reaffirms a landmark 2015 conservation agreement that EDF helped shape between governments, ranchers and the energy industry to protect the imperiled bird across 90% of its breeding range.



NOPPADOL PAOTHONG

We're all essential for the environment

Recently, over a single remarkable week, EDF and its allies won four major victories in three different courts, turning back administration attempts to weaken America's environmental protections *(see p. 6)*.

After a week like that, you might think it's lawyers who are essential to the environmental movement today. And they are. So are the moms who fight for environmental justice for their kids and their communities. So are the farmers — whether in California, South Dakota or the Indian state of Bihar — who are finding ways to feed their families and the world while protecting the environment.

And so is the 11-year-old girl shouting Weather Channel updates to her mother during Hurricane Hugo, the same girl who went on to earn degrees in geography, meteorology and physics and today prepares coastal residents of North Carolina for a future of stronger storms *(see p. 10)*.

You'll read about these heroes, and many more, in this issue of *Solutions*. We salute them.

At a time of deep division in America, the environment is one thing that can bring us together. Everyone has a right to clean air and water, and the disproportionate pollution so often suffered by communities of color and low-income communities is one of the great injustices that must be put right. There is so much work to be done.

"Your ZIP code shouldn't dictate your health," says Catherine Flowers, a Houston activist who launched the local chapter of Moms Clean Air Force last year and is urging city leaders to bring about equity. "This is about bringing people together," says Flowers. "We need everyone at the table." *(See p. 10)*.

This year marks the 50th anniversary of EDF's membership program. Our trustee and co-founder Dr. Charles Wurster, who turned 90 this summer, wrote in his book *DDT Wars* that the financial situation was so dire in the early years that "some called us FED, the 'Fundless Environmental Defenders,' only partially in jest."

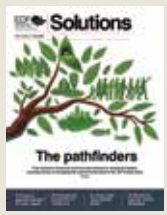
The founders gambled about a quarter of their diminishing bank account to place an ad in *The New York Times*, asking for donations. People responded in droves, and that support has never flagged. Today, EDF has more than 2.5 million members, every one essential. Thank you.

Fred Krupp
EDF President

EDF ENVIRONMENTAL DEFENSE FUND®
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: When federal action stalls, grassroots leaders step up. Even as the Trump administration has taken a wrecking ball to the country's environmental protections, across America environmental leaders are pushing through real, lasting changes. Read about them on page 9.

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Solutions

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FIELD NOTES

A lifeline for parks and wildlife refuges

In a major win for conservation, Congress agreed, with broad bipartisan support, to permanently provide $900 million a year for projects to preserve national parks, wildlife refuges and forests. The win is founded on the 1964 Land and Water Conservation Fund, which protects natural resources and safeguards federal public lands. The fund was permanently reauthorized by Congress last year, a move EDF supported. In July, lawmakers overwhelmingly passed the Great American Outdoors Act, which permanently endows the fund and also provides $9.5 billion for much needed maintenance. This will allow the National Park Service to restore hiking trails and picnic areas in places like Yosemite National Park. The president signed the bill into law in August.

"The permanent funding is good news for all Americans," said Elizabeth Gore, EDF's head of political affairs. "It brings critical investments in our nation's land and water resources, while bringing jobs and economic opportunities to local communities at a time they're urgently needed."

Green jobs get a leg up

The House of Representatives recently passed a $1.5 trillion infrastructure bill designed to create millions of green jobs and featuring 18 EDF policy ideas. Though the bill won't pass the Senate, EDF's head of political affairs Elizabeth Gore called it a "blueprint for the future."

$22.5B for replacement of lead water service lines.

$3.0B to restore wildlife habitat and help coastal communities adapt to climate change.

$1.7B in grants for zero-emission buses.

$350M to build alternative fueling stations, including EV charging stations.

All hail the electric car

Transportation is now the biggest source of greenhouse gas emissions in the U.S. But a growing number of companies envision a world where cars are clean.

Now Lyft, the country's second-largest ride-sharing service after Uber, has announced it will transition all cars to 100% electric by 2030.

Lyft will pursue this commitment with help from EDF and partners. The company is also working with EDF to develop plans for a national network of charging stations. Just as important, Lyft used its political muscle by joining EDF, plus Ford, Honda, BMW and others to oppose the Trump administration's rollback of vehicle emission standards.

"Lyft's bold commitment is a clear example of the private sector filling a current leadership void on climate while also reducing air pollution," says EDF+Business managing director, Elizabeth Sturcken.

In good company

The consulting firm Guidehouse predicts that by 2030 global corporate fleets will be running more than 70 million electric vehicles, up from around 2 million today.

> Ikea plans to make all home deliveries by zero-emission vehicles by 2025.

> Amazon has committed to putting 100,000 electric delivery vans on the road by 2030.

> British leasing company Zenith will switch its 140,000-vehicle fleet to electric by 2025.

GETTY IMAGES

IN THE COURTS

EDF is challenging federal approval of the Spire STL pipeline. The 65-mile Illinois/Missouri pipeline, one of several EDF is fighting, was rubber-stamped based on information provided by the developer, without a rigorous investigation of whether the project is needed.

EDF and nine states are fighting EPA's unlawful delay in implementing landfill pollution rules. Landfills are the nation's third-largest source of methane pollution.

MEET EDF

Dr. Elena Craft
Climate and health scientist

What are you working on?

A digital data collection project to track connections between air pollution and COVID-19 nationwide.

What have you discovered?

The work is in the early stages, but indications are that neighborhoods with higher pollution also have higher deaths from COVID-19.

Why is that?

Pollution causes or exacerbates lung and heart conditions that heighten risk from COVID-19. The worst affected communities are often low income with poor access to health care so they are doubly at risk. This work pinpoints where better services and pollution controls are needed.

Who are your heroes?

The community leaders who, despite the challenges they face, are doing the hard advocacy.

What keeps you going?

As a scientist, I'm glad to be adding to the broader understanding. That part feels good.

What is no one talking about but should be?

We're heading out of hurricane season and into flu season. There are always new threats on the horizon for vulnerable communities.

JOHN RAE

Canada's $2B project to plug abandoned oil and gas wells

KYLE BAKX/CBC

When Canadian Prime Minister Justin Trudeau announced his COVID-19 economic recovery plan, Dr. Shareen Yawanarajah was prepared for the worst. A petroleum geologist who works on energy policy for EDF, she had met with Trudeau's representatives to discuss "orphan" and abandoned oil and gas wells — wells with an unknown or insolvent owner. They can leak oil, brine and other pollutants, including methane, the climate pollutant responsible for about 25% of today's warming. Canada could use stimulus funds to clean up these wells, she argued, creating jobs and cutting pollution.

But on the morning of Trudeau's speech, a leaked memo revealed that Canada's powerful oil and gas industry was pushing for massive concessions, including a pause on methane regulation.

To her delight, Canada didn't bow to the pressure. Trudeau announced a $1.7 billion well cleanup effort and $750 million for an emission reduction fund focused on methane. Alberta received nearly 18,000 applications for cleanup contracts within four days of launching the program. Canada's decision is helping EDF build support for action to clean up U.S. orphan wells. There are an estimated 1–2 million such wells, and the number is expected to rise as hundreds of drillers are headed toward bankruptcy.

Now under construction

COURTESY OF METHANESAT.ORG

This satellite from EDF subsidiary MethaneSAT will locate and quantify methane pollution — the #2 driver of climate change — from the oil and gas industry and other sources around the world, with unrivalled precision. It will be ready to launch in late 2022.

EDF racks up new legal wins against the Trump agenda

By Joanna Foster

GETTY

The administration is scrambling to finalize its reckless anti-environment agenda. But EDF is standing firm, and we're landing win after win in the nation's courtrooms.

CHRISTINA, AGE 9, loves dancing, science class and her pet guinea pig Prince. Nothing holds her back, but she knows that bad air can make her sick and sometimes she needs her nebulizer to breathe. Christina has been treated as an asthmatic since she was just 6. Her mother, Latesha Walker, is deeply involved in their Long Island community, making sure their town is a healthy place for her daughter to grow up. Even as Walker works to organize community cleanups and advocate for pollution control at a local industrial site, she knows these efforts can't stop the dirty and dangerous air that often blows into her hometown from states as far away as Kentucky and Michigan.

A recent MIT study found that around half of premature deaths in the United States related to poor air quality are due to interstate air pollution. Communities of color are disproportionately affected.

4-0 legal wins in one week

One of the most dangerous forms of interstate pollution is ground-level ozone, or smog. Smog forms when industrial emissions react with heat and sunlight in the air. Nearly 40% of Americans live in areas with unhealthy levels of ozone pollution, which can cause and exacerbate chronic respiratory diseases like asthma. It can scar the lungs and cause premature death and is particularly harmful to children.

Despite the proven, and staggering, public health burden of interstate air pollution, the EPA refused New York's recent request for help reducing smog-forming pollution from out of state. EDF and our allies fought back and won, and the EPA is under court order to consider New York's petition.

New York sought relief under the Good Neighbor provision of the Clean Air Act from the biggest upwind polluters, but the EPA mired the request in red tape. The District of Columbia Circuit Court agreed with us, saying the EPA "demanded likely unattainable standards of proof."

"The Good Neighbor provision ensures fairness, so that upwind sources of pollution do their part to protect millions of people downwind," said EDF attorney Graham McCahan. "In the current vacuum of national leadership, it's crucial to defend the mechanisms that enable states to forge ahead."

New York's petition, which the EPA must now consider, would broaden the range of interstate pollution sources to which the Good Neighbor provision could apply.

That's good news for people like Walker, who are working to keep their children healthy. "My job as Christina's mom is to keep her safe," she said.

Winning streak

The success in defending against interstate air pollution was just one in a streak of four resounding victories for the environment by EDF and allies in a single week this summer. The others are:

Our successful defense of an Obama-era rule designed to create an even playing field for energy storage to compete with fossil fuel generators
The decision secures important market access for energy storage — a key step for mobilizing renewable energy.

A victory that upheld California's authority to coordinate with Quebec to cut climate pollution through a linked climate pollution reduction program
California's enforceable climate pollution reduction program has been a model for meaningful bottom-up action on climate change. The program hit its target to reduce greenhouse gas emissions below 1990 levels four years early and has since set a new goal of reducing emissions 40% below 1990 levels by 2030.

A court ruling to vacate the administration's rollback of the 2016 Methane Waste Prevention Rule
This vital rule protects the climate and public health by reducing the waste of methane and other dangerous pollutants from oil and natural gas operations on public and tribal lands. The 2016 rule will prevent roughly 180,000 tons of methane emissions a year, the equivalent over 20 years of taking more than 900,000 cars off the road.

After nearly four years of relentless attacks on health and environmental protections, the administration has failed to complete and successfully defend in court a rollback of any major climate and clean air safeguards.

"These four wins in just seven days reflect the rock-solid legal and factual foundation for the vital health and environmental protections we are defending," said EDF attorney Tomás Carbonell. "From methane standards for oil and gas facilities, to health safeguards for communities affected by interstate air pollution, to pioneering state programs on clean energy and climate change, these protections are essential for the health and well-being of communities nationwide."

In fact, whereas previous administrations typically won about 70% of their regulatory lawsuits, the Trump administration has lost 85% — and 90% when it comes to environmental suits.

Trump has lost 90% of environmental regulatory lawsuits.

"In case after case, the courts have forcefully rebuked the administration for its refusal to abide by our nation's environmental laws and to provide well-justified, science-based reasons for its actions," said Carbonell. "This administration clearly has no regard for the law, which is why its unprecedented attacks on bedrock environmental protections so frequently fail."

The success of EDF and allies in disrupting and delaying the administration's deregulatory agenda means that many major rollbacks face ongoing litigation, while other rollbacks promoted in the first weeks of the administration are still struggling to be finalized. This is important, as any rule finalized within the last 60 legislative days of a presidential term, is vulnerable to repeal under the Congressional Review Act. A weapon once wielded by Trump to cut down environmental progress could eventually be repurposed to repair and rebuild.

Yet even as the clock ticks down the final days of his first term, Trump continues to escalate his appalling attacks.

In July, the administration announced changes to weaken the Magna Carta of environmental law — the National Environmental Policy Act. NEPA was signed into law by President Nixon 50 years ago with huge bipartisan majorities. The act enshrines environmental review and public comment. It gives communities a voice in the planning of pipelines, industrial activities and some power plants and ensures they can protect themselves from dangerous or poorly designed federal projects.

The new changes strike at the heart of NEPA: they fast-track environmental studies, recklessly ignore climate impacts and exempt certain projects from any environmental impact assessment.

Two weeks after the administration's announcement, EDF, Earthjustice and others filed suit.

"For half a century, NEPA has been a foundational tool for communities seeking to have a voice in federal decisions that have a profound impact on their health and well-being," said EDF attorney Rosalie Winn. "The administration's changes threaten the viability of NEPA, making it easier for government to ignore harms from new industrial projects to underserved communities already burdened by pollution. The changes also restrict consideration of less harmful


Latesha Walker protects her community and her daughter, Christina, from air pollution.

alternatives. These changes contradict the fundamental purpose of NEPA: to ensure the government carefully considers how its actions impact the health and well-being of all communities."

While EDF is confident that our scientifically rigorous and legally sound arguments will continue to prevail in the courts, we have lost precious time.

With the climate crisis growing deeper every day and a deadly pandemic worsening the burden of polluted air, halting the administration's hasty and half-baked deregulatory agenda is simply not enough.

Moving past the destruction of the past four years, to secure a safe climate and healthy air for all Americans, is the vast job that awaits.

> **"This administration clearly has no regard for the law, which is why its unprecedented attacks on bedrock environmental protections so frequently fail."**
>
> — EDF attorney Tomás Carbonell

EDF is prepared to fight for climate and clean air progress — regardless of the outcome of this fall's election. "We will continue to work hard with our many partners and allies to craft a vision for a cleaner, safer tomorrow," said Carbonell.

"A new generation of climate and clean air protections is essential to spur job creation and innovation, save lives and protect the health of communities that have suffered the burden of unhealthy air for far too long."

A new generation of environmental lawyers steps up

Teneshia Jones is a third-year law student at Howard University with a background in criminology and a passion for environmental justice.

"Growing up in a large family was my first environmental education," she says. "When your budget is tight, you see everything as a nonrenewable resource and you are much more mindful."

During her recent externship with EDF, Jones was deeply involved with EDF's legal team, helping oppose the EPA's destructive plan to censor science. She also advocated for accountability at the EPA and worked on a comparative review of state clean energy policies.

"I learned that environmental law can be temperamental," says Jones. "But I was inspired by the vigilance and dedication of the team. The experience confirmed my desire to be a voice for the environment and an advocate for underserved communities."

EDF partners with Howard University School of Law to place externs with attorneys on our Health and Clean Air teams. The program intends to catalyze careers.

This fall, EDF attorneys Michael Panfil and Tomás Carbonell are serving as adjunct faculty at Howard.

The pathfinders

By Rod Griffin, Tasha Kosviner and Shanti Menon

The pandemic rages, the nation reckons with racism, millions are jobless and hungry and the climate crisis is more urgent than ever. Yet all across America, unsung heroes are taking big environmental ideas from the drawing board to reality and showing the way to a better future. Meet some of the people doing the critical work to build a more just society and a greener world for us all.

ILLUSTRATIONS: DOUG CHAYKA

TACKLING ENVIRONMENTAL INJUSTICE

Catherine Flowers mobilizes a clean air army in Houston

"I CAN'T BREATHE." GEORGE FLOYD'S dying plea ricocheted across the country, not only in response to police brutality but to the crushing weight of all the inequities faced by communities of color. For environmental justice advocates, these words also speak to the burden of air pollution. People of color are more likely to be exposed to, and suffer from, air pollution than white people.

"Doing nothing about air pollution is racism in action," says Catherine Flowers, Houston organizer for EDF affiliate Moms Clean Air Force. Houston, an industrial city without zoning laws, presents a stark picture of environmental racism. Polluting facilities can be located in residential areas and are often placed in communities of color. EDF's block-by-block air quality maps of 22 neighborhoods in Houston show that many of these communities have high pollution levels. "Your ZIP code shouldn't dictate your health," says Flowers.

Flowers, whose son has asthma, launched Moms' Houston chapter in 2019. Moms is a million-plus strong and growing movement whose members campaign for clean air and climate action. "When I started, no one wanted to talk about air pollution," Flowers says. "This is an energy town."

But Flowers, a Hurricane Katrina evacuee who went on to found a city department dedicated to helping underserved neighborhoods, persevered.

"Catherine is a force of nature," says Reverend Rudy Rasmus of St. John's Downtown Houston. When Flowers was CEO of his nonprofit, Bread of Life, she pivoted from serving 500 meals a day to the homeless to providing disaster relief to 100,000 people hit by Hurricane Harvey.

Moms' Houston area members now top 4,200. When the Environmental Protection Agency held a public hearing on standards for soot pollution this year, Flowers registered five delegates from Houston to speak — including a high school student who wants to follow in her footsteps as a clean air activist.

As Houston implements its new climate action plan, Flowers and others are urging city leaders to appoint a community-led advisory committee and create a scorecard to evaluate equity. She and Moms are part of coalitions and campaigns such as One Breath Partnership, which works for clean air and environmental justice in Houston and across Texas, and Our Shared Home, where she collaborates with a diverse group of allies, including the Steelworkers Organization of Active Retirees.

"Moms builds capacity in communities that didn't necessarily have the words before," says Flowers. "This is about bringing people together. We need everyone at the table. It's about giving Houston a voice."

MOMS CLEAN AIR FORCE

PROTECTING COASTAL STATES FROM CLIMATE CHANGE

Jess Whitehead prepares North Carolina for a stormy future

IN SEPTEMBER 1989, AS HURRICANE Hugo smashed into South Carolina, an 11-year-old girl in Carbondale, Illinois, sat glued to The Weather Channel, shouting updates to her mother. Jess Whitehead's mom in turn relayed the news via telephone to friends huddled in a community shelter in Charleston without a TV. Together they shared the horror as trees fell, waters rose and homes and businesses were destroyed.

"We carried on until midnight when the phones went down," says Whitehead. The next morning the family heard their Charleston home had lost its roof. Many neighbors fared much worse.

The experience was formative. "I decided I wanted to understand extreme weather and how to help people," Whitehead recalls.

Today, with degrees in geography, meteorology and physics, Dr. Whitehead is North Carolina's chief resilience officer, charged with helping the state prepare for, and recover from, floods, wildfires, hurricanes and other ravages of climate change.

"We're looking at housing, transportation, businesses, communities and how to build resilience into the fabric of our systems," she says, "so that when disaster strikes, we don't bounce back — we bounce forward."

Whitehead is one of six state

resilience officers working with EDF to share knowledge about how to protect vulnerable communities and ecosystems.

The stakes couldn't be higher. Since 2016, North Carolina has been clobbered by three major hurricanes, including two 500-year storms. According to some assessments, up to half the state's 10.5 million residents are at risk from an extreme weather event made worse by climate change.

Across the United States, the outlook is similarly stark. Flooding alone costs the economy $54 billion per year.

"Higher seas, stronger storms, worsening droughts — these are normal conditions now," says Steve Cochran, EDF's head of coastal resilience. "Cities and states need to plan ahead."

For EDF, that means helping Louisiana devise and execute a $50 billion state plan that includes restoring natural flood defenses like wetlands and creating sediment diversions that reduce flood risk and land loss in the Mississippi River Delta. We've worked closely with Whitehead and North Carolina to craft the state's first climate risk and resilience plan and we helped develop and pass a law that creates new ways to fund natural flood defenses. We organize knowledge sharing forums between chief resilience officers in Louisiana, North Carolina, Florida, New Jersey and elsewhere. And we make sure communities most at risk are engaged in devising solutions.

Whitehead is currently planning a community project modeled on one EDF helped spearhead in 2018, which saw 3,000 Louisiana residents discuss risks and propose solutions. Following that effort, Louisiana Gov. John Bel Edwards invested $41 million in floodproofing, mental health services, relocations for threatened communities and much more.

"EDF has the on-the-ground knowledge of the challenges, so we're not reinventing the wheel," says Whitehead.

Recalling that fateful night in 1989, she says, "My audience is bigger and the stakes are higher, but I'm still helping people understand what's happening."

DEMANDING CORPORATE RESPONSIBILITY

Christina Herman pressures companies to act on climate

WHEN THE COCA-COLA COMPANY committed to slashing emissions in line with internationally recognized goals on global warming, it cited a lesser-known group of investors as a key influence.

"That was a proud moment," says Christina Herman, who today coordinates investor efforts on climate and environmental justice for that group, the Interfaith Center on Corporate Responsibility. She had been urging Coca-Cola to do more on environmental issues for years.

In truth, Herman is well accustomed to being the small dog in a big fight. ICCR's members control $500 billion in assets, compared to larger investor groups that manage trillions. But as a vocal, values-based organization with an active portfolio management style, it wields outsize influence. Of the 281 shareholder resolutions it filed in 2020, 40% were withdrawn following corporate commitments, including from Amazon, Facebook and Alphabet, parent company to Google.

"We're often the first group to raise an issue with companies," says Herman, who also focuses on human rights. "We read the studies, talk to groups on the ground and then talk to companies. Investors say: 'You hear things we don't. We need your view.'"

That approach yielded a big win in 2019 when oil companies, including BP, ExxonMobil and Shell, defied their trade group to speak out against the Trump administration's rollback of regulations limiting methane emissions from oil and gas fields. Methane is a powerful climate pollutant. That announcement, a big win for the environment, followed an open letter from investors representing more than $5.5 trillion in assets, that asked oil and gas companies to unite in opposition to the rollbacks. The letter's author? Herman.

"Investors understand that the rollbacks would cost them in the long run," says EDF's Ben Ratner, whose expertise in methane emissions from oil and gas operations helps big investors identify the industry's good and bad players. An EDF study found methane leaks cost the U.S. oil and gas industry an estimated $2 billion a year — enough natural gas to fuel 10 million homes.

As Herman puts it: "Climate change is an existential threat, and as such, an economic issue. For the financial sector it is a systemic risk that must be managed."

CHANGING AGRICULTURE

In South Dakota, Keith Alverson builds a conservation legacy

FOR SIX GENERATIONS, KEITH Alverson's family has shaped the tallgrass prairies of Chester, South Dakota, and it has shaped them.

"We work hard to keep our soil healthy," says Alverson, whose ancestors were conservation farmers long before anyone had thought of the term. "If my forebears hadn't taken care of the land the best they knew how, it wouldn't be as productive as it is now. My job is to build resilience for the next generation."

A father of three, Alverson *(pictured, left, with his father)* maintains the cottonwood and ash tree lines planted by his grandfather to protect the land from erosion and extreme weather. He continues the minimum-till practices begun by his father to keep nutrients in the soil. And he protects wildlife refuges and uses cover cropping to improve soil structure on his 2,600-acre corn and soybean farm. As former chair of the National Corn Growers Association's climate task force, he is a vocal advocate for climate-friendly farming policies at both the state and federal level.

SOUTH DAKOTA CORN

As climate change increases flood risk and erosion, shifts planting and harvesting windows and increases uncertainty, practices that improve farm resilience to changing conditions become ever more important. In 2019, record snow and rain rendered 3.9 million acres of land unplantable in South Dakota alone. Across the country, farms — already suffering from low crop prices, the effects of the pandemic and the U.S.-China trade war — are being battered.

"Conservation farming is climate-smart farming," says Maggie Monast, who leads EDF's work on the economics of agricultural sustainability.

Farmers like Alverson are critical partners in EDF's efforts to help farms to withstand extreme weather and minimize agriculture's impacts on the environment. Together we've supported organizations like the Iowa Soybean Association and the National Corn Growers Association, which represents more than 300,000 farmers, as they roll out conservation measures across thousands of acres of the heartland. EDF has also devised a framework, now undergoing on-farm trials, that will help farmers measure how much fertilizer is at risk of polluting our waterways and air.

Alverson recently joined EDF in championing the Cover Crop Flexibility Act, which would ensure farmers who plant cover crops are eligible for full crop insurance payouts, and the bipartisan Growing Climate Solutions Act, which would enable farmers to benefit from greenhouse gas markets.

Both bills are currently working their way through the legislative process.

"Farming is moving in the right direction," Alverson says. "With the right incentives and the right financial support, farmers and the environment can thrive together."

TRANSFORMING TRANSPORTATION

Christine Weydig drives an electric revolution for millions

RECENT VISITORS TO NEW YORK'S John F. Kennedy International Airport will have landed in the midst of a quiet revolution. The buses that ferry thousands of passengers between parking lots and terminals are now electric.

The replacement of the old polluting diesel buses here, and at LaGuardia and Newark airports, is the work of a team led by Christine Weydig, director of environmental and energy programs at the Port Authority of New York and New Jersey. Weydig leads the agency's efforts to slash its greenhouse gas emissions 80% by 2050.

"Transportation is the country's largest source of greenhouse gas emissions," says Weydig. "We have a responsibility to act."

Trucks and buses are also a major source of fine particles and other unhealthful pollution that hits low-income neighborhoods, often situated near transportation hubs, hardest.

"To limit dangerous levels of global warming and protect public health, the vast majority of the world's 350 million trucks and buses must be zero emission by 2050," says Jason Mathers, who directs EDF's transportation

THE CLIMATE GROUP

work. "The time for bold, ambitious action is now."

Car electrification could create as many as 1.9 million U.S. jobs by 2030. Buses and trucks would swell this number even further.

But the path forward is a complicated one. "Manufacturers must provide vehicles, and fleet operators must commit to using them," says Mathers. "Power companies must provide charging infrastructure, utilities offer appealing rates, and government must drive demand through financial incentives and emissions controls."

EDF is working hard on all fronts. We helped convene a coalition of major manufacturers including Cummins and Daimler, to call for federal funding to jump-start the market and create a nationwide charging network. We helped California develop a new rule mandating that by 2045, all new trucks sold in the state must be electric. And we're fighting the Trump administration's rollback of vehicle emissions standards in court.

At the state level, progress took a huge leap forward this summer when we helped 15 states, representing about one-third of U.S. truck and bus sales, jointly commit to ensuring all medium- and heavy-duty trucks and buses sold in their jurisdictions be zero emission by 2050.

The Port Authority of New York and New Jersey, which also runs a major shipping port and multiple bus and rail terminals, is way out ahead of state rules. The agency is also working on electrifying 50% of its car fleet — a total of around 700 vehicles.

It's also leading by example. JetBlue, one of JFK's largest tenants, is electrifying its ground service equipment. Weydig's team launched a monthly knowledge-sharing group that includes 34 different transit authorities in nine states. She also advised on New Jersey Transit's aggressive new bus electrification goals and is convening discussions with airlines around carbon offsets and sustainable fuels.

As the pandemic's economic bite deepens, keeping partners focused on sustainability goals is getting tougher. But Weydig, a former competitive gymnast, is no stranger to the contortions required to broker delicate deals: Under President Obama, she spent two years covering the energy portfolio for the U.S. Embassy in Iraq.

"You accept blood, sweat and tears as part of the job," she says. "But we're on our way. The hard work has begun."

THE OCEANS REBORN

Paul Kujala helps revive a West Coast fishery

DECLARED A FEDERAL DISASTER IN 2000, the West Coast groundfish fishery has experienced a remarkable recovery. The revival stems in part from sustainable fishing policies championed by conservation-minded fishermen like Paul Kujala.

Kujala operates Cape Windy, a 58-foot trawler, out of Warrenton, Oregon. More than a decade ago, he partnered with EDF to help enact reforms. Our approach to fisheries management, adopted by the Pacific Fishery Management Council, combines habitat protection and secure fishing rights. Today, nearly two dozen important species — including iconic sole and rockfish — are certified as sustainable.

> "I didn't want to be the one to catch the last fish out there."
>
> — Fisherman Paul Kujala

The success has triggered a new wave of reforms. In January 2020, a swath of protected deep-sea habitats off the West Coast doubled in size, thanks to a historic plan brokered by fishermen, EDF and other nonprofit groups. Under the agreement, more than 135,000 square miles of ocean, an area twice the size of Washington state, has been safeguarded. Simultaneously, 2,000 square miles of less sensitive habitat has been reopened to fishing.

"This agreement shows we can work together to improve habitat protection while creating opportunity for fishermen," says Kujala, who provided logbooks, charts and knowledge gained over decades to help design the protected areas.

Kujala is now testing new smart boat technologies that could help ensure the long-term survival of the fishery. On the West Coast, 50% of the groundfish fleet is now using cameras, and recent advances in machine learning create an opportunity to dramatically increase that number. These innovations improve accountability and reduce the need for expensive human observers on boats.

"Fish stocks on the West Coast are the healthiest they've been in more than 20 years," says Kujala. "The management approach adopted here could be a model for other fisheries, not just in the United States but globally." ■

Banking on a cleaner environment

Green banks are a growing force for clean energy across America. They attract private investment to climate solutions, getting more bang out of limited public bucks.

COMMUNITYENERGY/FLIKR

Green banks can help underserved communities get access to clean energy.

THE ELDERLY RESIDENTS OF Southwest Terrace Apartments, a public housing complex in Windsor Locks, Connecticut, were having trouble opening the heavy fire doors in their building. The housing authority wanted to install push-button doors, but high electric bills were consuming the budget. Then executive director Jaimie Mantie heard about a solution. With financing from Connecticut Green Bank, she could lease a rooftop solar system and cut utility bills in half — with no money down. "With the savings, we were able to put in new doors," she says. "Now our residents have access to the whole building, and we're looking at solar for our other four buildings."

High cost of capital, perceived project risk, inefficiencies of scale and other barriers can prevent climate solutions from flourishing, even when communities or businesses want to make a change. Green banks, which can be public, quasi-public or private institutions, help address these barriers. EDF has worked with several green banks to optimize their impact. Now we're helping advise New Jersey as it launches a green bank that will turbocharge the state's clean energy transition.

Unlike a government grant program, green banks are self-sustaining. They design and deploy financial tools aimed at specific market barriers that can hold back climate solutions — and they usually recoup their investment for future use.

Unlike traditional banks, green banks are mission-driven. They exist to underwrite climate solutions, not necessarily to maximize profit. They often use their assets to support transactions that private capital might avoid, reducing or eliminating market risks and making markets more attractive for private capital investment. Leveraging public capital and unlocking private capital are key to the mission of a green bank.

Different by design

Every green bank is structured and operates differently to meet its goals. Baltimore's Climate Access Fund focuses on low-income community solar projects, offering credit guarantees to get better rates for borrowers and low-interest loans with reduced documentation requirements. Florida's Solar and Energy Loan Fund focuses on low-interest loans for property improvements in lower- and middle-income communities.

Connecticut's green bank is relatively large and focuses on financing energy efficiency and clean energy projects for consumers, while New York's issues debt alongside private investors to finance everything from organic greenhouses and large community solar projects to energy storage.

New Jersey's green bank, like some others, will use funds generated by the Regional Greenhouse Gas Initiative, a 10-state carbon market. It will provide financing to underserved populations and projects that will create clean energy jobs. It could help fund community solar projects, drive investment to charging stations for electric vehicles and improve energy efficiency in buildings. EDF is advising both nascent and established green banks on ways to support the transition to electric trucks.

From 2011 to 2019, green banks created $3.60 in total investment for every public dollar, generating over $5 billion of investment in tens of thousands of projects that reduce carbon emissions and create jobs.

The House of Representatives recently called for a $20 billion clean energy jobs fund, as part of a proposed National Climate Bank, that could generate 5 million clean energy jobs. A bipartisan group of governors, along with EDF and others, are also urging Congress to support a national green bank. "Green banks are one of the best tools we have to animate the private capital we need to address climate change," says EDF clean energy finance expert Victor Rojas.

Shanti Menon

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

GREGKESSLERPHOTO.COM

California pecan farmers go nuts for pollinators

Its existence precarious, the monarch butterfly finds new saviors.

IN A BATTLE BETWEEN AN APHID AND a ladybug, put your money on the ladybug.

That's what pecan farmer Ben King learned this summer, when he planted native wildflowers to attract beneficial predators and pollinators like the monarch butterfly, to his groves in California's Central Valley.

For California farmers, aphids are the common enemy. Capable of ruining an entire crop, they're controlled by an array of pesticides, many of which are devastating to monarchs and honeybees. These chemicals are partly responsible for the crash in monarch populations, which plummeted 90% over the past two decades. Pesticides also kill ladybugs, which eat aphids, and other beneficial insects.

"Many farmers are interested in using biological strategies so they can reduce pesticide use," says Daniel Kaiser, EDF's director of western conservation. EDF is helping farmers cut pesticide use by encouraging the presence of beneficial insects — part of a broad campaign to save the monarch and other pollinators.

With King, we planted 275 acres of pecan groves with pollinator-friendly cover crops, including milkweed, which monarchs need to survive, in Colusa County last winter. The wildflowers bloomed in the spring, attracting ladybugs and lacewings that happily devoured the aphids. Honeybees and butterflies have also returned in profusion. And King, who used to spray his crop several times a season, hasn't had to spray once.

King, a fifth-generation farmer, was so impressed with the results that he presented them at a state almond board meeting. Now, farmers growing other nut varieties are contacting EDF for information about cover crops with wildflowers.

"This is an experiment to restore the natural ecosystem as it was 150 years ago and allow natural predators to do the work," says King. "It worked. We proved that farmers can be essential workers in saving monarchs and bees."

Another pecan orchard we're working with, ByPass Farms, reports a profusion of butterflies, including the elusive great purple hairstreak. The projects are paid for in part by the $3 million in state funding to help pollinators that EDF helped win in 2018.

Golf courses and pheasants

A chief reason for the monarch's decline is the loss of its milkweed habitat, which these butterflies rely on for breeding and feeding. But extensive herbicide use, habitat loss and climate change has drastically decreased milkweed.

EDF is working with a variety of farmers and other landowners to restore milkweed habitat along the migration corridors monarchs use for their storied journey to and from Mexico. With Audubon International, we've launched Monarchs in the Rough, a program that creates habitat for pollinators on golf courses, which occupy 2 million acres in the United States. Already, 700 golf courses in all 50 states have planted butterfly habitat.

Meanwhile, Pheasants Forever, a conservation and hunting organization, is working with EDF to create pollinator habitat on Oklahoma farms. The area was once a vast prairie, rich with native grasses and wildflowers.

"We're not going to restore a large-scale, perfect prairie," says EDF's director of conservation strategy David Wolfe. "But by working with farmers, we can restore important elements of it."

EDF projects to restore monarch habitat are also underway in Texas, Minnesota, Missouri and Iowa — all key states along monarch flyways. If we're successful, we can help put a beloved — and imperiled — butterfly on a path to recovery.

Peter Klebnikov

YOUR HELP IS NEEDED ››

Your support can make a world of difference for the monarch butterfly and other pollinators threatened by habitat loss and climate change.

Visit edf.org/pollinators to make an online contribution. Find out how you can plant milkweed for monarchs in your backyard. Go to: Xerces Society xerces.org/milkweed and Monarch Watch monarchwatch.org

GETTY

Fertile ground for climate solutions

By Shanti Menon

Can hundreds of millions of farmers in India grow more food, more profitably, with less climate pollution? EDF and local partners are creating climate-smart solutions for a rapidly developing nation.

Mehrunisa, a farmer in the eastern Indian state of Bihar, grows rice, wheat and maize on about an acre of land. High costs and low yields make it difficult to feed her extended family of 16, let alone turn a profit. Like millions of subsistence farmers in India, her livelihood is further threatened by climate change. Farm incomes in India — already meager — could drop 12% to 18% in the coming years due to changing weather patterns.

India's farmers are among the world's most vulnerable to climate change. Though its climate pollution per person is barely one-tenth that of the U.S., India is the world's third-largest climate polluter. Its emissions are growing as it provides more food and energy for its 1.4 billion people, most of whom are rural residents. Nearly 20% of India's emissions come from agriculture. So, EDF has been working with partners there for nearly a decade to promote low-carbon rural development. Together with Indian nonprofits, research institutions and the government of Bihar, a state of more than 100 million people, we're building a support network for small farmers to help them produce more food, more profitably — while reducing climate pollution.

The power of local networks

Mehrunisa used to walk miles to buy farm supplies and often couldn't find what she needed. Today she shops at a local store affiliated with EDF's partner DeHaat, creator of an online agribusiness platform. The shopkeeper sells quality fertilizers, manures and seeds at reasonable prices. He buys her crops at a good price because DeHaat links him directly to big buyers, allowing better returns for him and Mehrunisa.

Through the DeHaat smartphone app, developed with help from EDF, farmers can upload pictures and queries and interact with agriculture experts through voice and text. They get access to current market prices and credit and loans on better terms. "We are reimagining how to bring food security to these households by leapfrogging over old technologies," says EDF climate scientist Dr. Kritee, who leads EDF's scientific research in India.

Along with troubleshooting, the advice includes how to be more efficient with irrigation and fertilizer. Using less fertilizer at the right time boosts yields, saves money and cuts climate pollution from

Ready for change: Farmers like Mehrunisa are advancing new sustainable farming techniques.

nitrous oxide, a potent greenhouse gas.

"Now I am using three kilograms of fertilizer instead of five. Water used for irrigation is also less," says Ramashish, one of 14,000 farmers in a DeHaat-EDF pilot project. On average, these farmers increase their profits by 5% to 10% and yields by 10% to 20%.

"You have to fulfill some of the farmer's immediate needs — and there are many — in order to build trust," says Kritee. "This gives farmers a sense of security that we have their well-being in mind and thus the confidence to follow our recommendations."

Reaching 300 million farmers

Based on the program's success, EDF and partners were recently invited by the Bihar government to help advise the state's climate action plan for agriculture and to pilot a training program for government agricultural officials to use the app in their work to support farmers. The potential is huge: There are roughly 4,000 such officials and 563 DeHaat centers in the state, providing an opportunity to reach hundreds of thousands of farmers with climate-smart advice.

EDF is also part of a major collaboration among Indian and American universities, the Bihar government and international research groups to develop a low-cost, comprehensive soil health test. This will allow advice on fertilizer, irrigation and more to be customized to each farmer's field.

For Mehrunisa, the benefits of this support are clear. "Earlier my crops weren't growing, or they were bad quality," she says. "Now I grow good crops. We eat better quality food." Her yields and profits have increased roughly 20% per acre in the four years she has been working with DeHaat.

By farming more efficiently and profitably, Mehrunisa and other small farmers in India will be better equipped to face climate challenges. They will also be helping India develop with less climate pollution.

"We're demonstrating that India can make real — not theoretical — low-carbon choices on its path to development," says Richie Ahuja, who leads EDF's work in India. "These practices align with the national interest and with the best interests of the planet."

SHAMS UL HAQ PHOTOGRAPHY

EDF's Richie Ahuja (top right) has worked in rural development in India for nearly a decade.

A rare clean air opportunity

In most global rankings of urban air pollution, India's cities dominate the 10 worst. In 2019, the country's soot pollution averaged five times World Health Organization recommendations.

But when India instituted a broad shutdown to combat COVID-19 in March, air pollution levels in Delhi plummeted nearly 50%. In the northern city of Jalandhar (pictured below) residents were stunned to see, for the first time in decades, the snow-capped Dhauladhar mountains, more than 100 miles away. "Suddenly," says Parthaa Bosu, who heads EDF's air quality work in India, "the story we were telling about clearing the air was no longer a fairy tale."

Many people in India are unaware of the dangers of air pollution and its impacts on health. Some believe the problem is an inevitable cost of economic development.

To combat this notion, Bosu worked with Indian research institutions and government agencies to create a public database of original Indian research demonstrating the existence and health effects of air pollution in India, going as far back as 1900. "It was almost like doing archeological research," he says. The central government launched the repository with great fanfare just months before the COVID-19 shutdown.

As restrictions ease, India's air pollution is increasing again. But Bosu hopes the memory of that splendid mountain view will last. "Now people understand what we are trying to achieve," he says.

EDF and local partners are helping create a center in New Delhi to strengthen legal, technical and policy expertise on air pollution and to train workers to help build and maintain air quality monitoring networks.

AVEL CHUKLANOV/UNSPLASH

How to make online shopping a safer option for the planet

As stores closed their doors this spring, online shopping became a lifeline for millions of Americans. We clicked our way through the shopping list from the safety of our living rooms and built haphazard monuments of discarded cardboard by the front door. We did this to protect ourselves, but at what cost to the environment?

The good news is that online shopping is not categorically more damaging to the environment than driving to your local store. And there are simple steps you can take to make your online purchase more sustainable.

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Don't rush it

Next-day delivery options free us from the chore of planning ahead. But when you select the "I need it now" shipping option, you are contributing to the likelihood that partially full diesel delivery trucks will be patrolling your neighborhood. When you pick a slower shipping option, companies can consolidate loads and routes and make the most energy efficient delivery. Fewer trucks also lightens the pollution for the neighborhoods surrounding depots and warehouses, which are often low income and communities of color.

Think it through

When ordering, be mindful. Remember, there's no such thing as a free return. Your credit card might be unaffected when you change your mind about a purchase, but returns essentially double the environmental impact of an order.

"The impact is real," says EDF's Aileen Nowlan, who helps cities and companies manage and mitigate local air pollution. "You're actually increasing air pollution in your own neighborhood."

Consumers, unite!

Purchasing power can drive positive change. Tell companies that you want to hear a plan for them to clean up their act. According to Nowlan, the trucks that are responsible for the final leg of the delivery process are perfectly poised to switch to full electrification. These trucks typically drive less than 100 miles a day and are parked all night in a central location.

"The technology is there and it's cost-effective," says Nowlan. "But these companies need to be motivated by customers demanding cleaner alternatives."

Give back

Once you've unpacked your treasures, it's time to recycle or repurpose all that packaging. You can help the environment and your neighbors by using old cardboard boxes to ship donations through the Give Back Box program *(see below)*. Fill an old box with gently used clothing or household items, print the prepaid label and ship as usual. Your box will be donated to your nearest participating charity organization.

Grow greener

Did you know you can use an old cardboard box to make an indoor composting bin with minimal fuss? All you need is a large cardboard box and some coco peat and rice husk ash or hardwood ash from a gardening store. Composting household food scraps is more than just a crunchy hobby. It prevents organic matter from ending up in landfills where it decomposes to release methane, a potent greenhouse gas. You can use the compost to enrich the soil for houseplants or to grow vegetables and flowers. A layer of used cardboard in your flowerbeds or kitchen garden is also a safe and effective weapon against weeds.

Get crafty

Rather than buying more and more toys to keep your stir-crazy kids quiet while you work, challenge them to get creative with all that cardboard you already have lying around. Build a dollhouse, a spaceship or a fort. You'll be giving a second life to what would otherwise end up on the curb. You'll also be raising imaginative environmentalists.

Joanna Foster

REDUCE YOUR IMPACT

- **Every empty box can be an opportunity to donate** givebackbox.com/works
- **Simple cardboard box composting:** bit.ly/32qS8

ASK AN EXPERT

Are businesses really fighting for the climate?

Annette Billingsley, San Francisco, asks: *Asset managers such as BlackRock have told energy companies they intend to scrutinize their commitments to address climate change. How impactful is that?*

Tom Murray, VP of EDF+Business, responds:
Pushing for a clean energy economy requires engagement from every sector, and asset managers have a key role to play.

Until recently, the largest, most influential managers have stayed mostly on the sidelines.

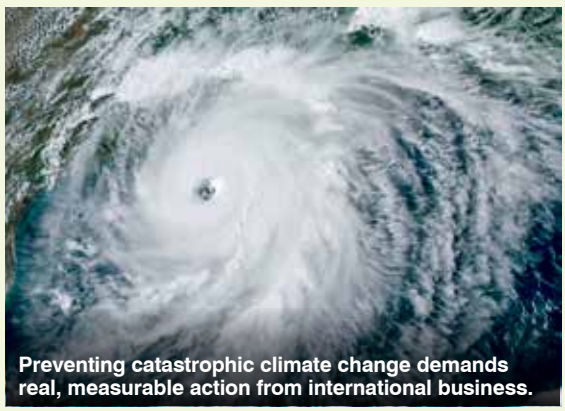
But things are changing. BlackRock CEO Larry Fink has committed to making climate change central to the way the firm manages risk and chooses where to invest. He's seeking the emissions reductions and accountability that will speed progress toward the goals of the Paris Agreement.

Given that BlackRock manages over $7 trillion in investments, the firm's announcement could catalyze a historic shift on Wall Street, one that induces the two other big U.S. asset managers — Vanguard and State Street — to follow. If these institutional investors can pressure industry to reform, use shareholder voting to hold climate laggards accountable, and direct investment dollars toward companies that lead on climate action and advocacy, we can accelerate the transition to a net zero economy.

That advocacy part is critical. The true corporate leaders are those who call for strong federal climate policy, align their trade associations on climate and allocate political spending to advance climate action — not obstruct it.

EDF is making the case for companies to do this, and we encourage all asset managers to lend their voices to that effort.

This question was asked as part of EDF's new webinar series, *EDF Live*. Sign up for future events and be part of the conversation at edf.org/EDFLive



NASA

Preventing catastrophic climate change demands real, measurable action from international business.

WE ARE EDF

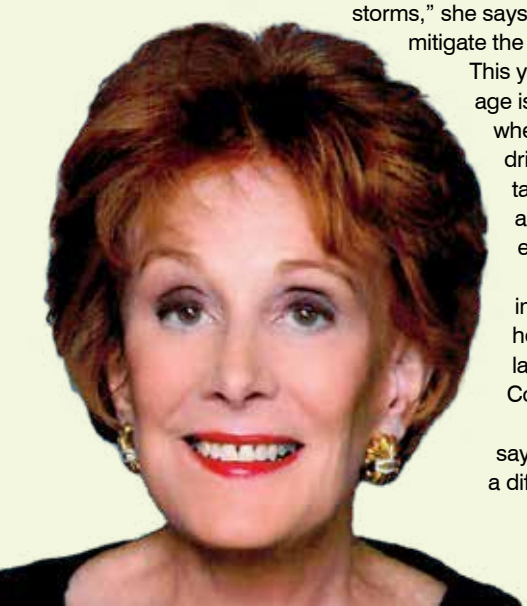
A guardian of nature who supports new climate solutions

One of Phoebe Cowles' earliest and fondest memories is of exploring the prairies in her home state of Washington, with her mother, gathering wildflowers.

"There was bear grass, Indian paintbrush — I was captivated by the beauty," Cowles recalls of the outings. Thus began a lifelong love of wild places and natural splendor — and a strong desire to protect them.

Over the years, Cowles, now 79, has watched with increasing concern as climate change, spiralling emissions and urban sprawl have irrevocably changed the natural world.

"We see the oceans rising, temperatures increasing and greater storms," she says. "We must act now to reduce the cause and mitigate the effects."



This year Cowles, a longtime EDF member, proved age is no barrier to embracing cutting-edge change when she provided core funding to advance EDF's drive to help Washington state hit its new climate targets. The goal? To permanently cut emissions and make the state a national model for strong, enforceable limits on carbon pollution.

"This is an efficient way of reducing human impact on the environment," Cowles says. She hopes the work can pave the way for more collaboration on emissions reductions on the West Coast and beyond.

"EDF is a most effective organization," Cowles says. "I'm so pleased with this opportunity to make a difference."

GETTY

Triple your impact!

EDF is celebrating 50 years of our Membership program. We wouldn't be here without you. Please help us usher in the next half-century of environmental protection. Every dollar you donate until December 31, 2020, will be matched with two additional dollars from an anonymous EDF member — tripling your impact and helping us defend bedrock environmental laws. Call us at 800-684-3322 or give at **edf.org/2020yearendmatch**.

"History says, Don't hope
On this side of the grave,
But then, once in a lifetime
The longed-for tidal wave
Of justice can rise up
And hope and history rhyme."

— Seamus Heaney, excerpt from *The Cure at Troy*

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