

# Solutions



Vol. 52, No. 1 / Winter 2021

## A new day

President Biden has a bold plan to combat climate change.  
EDF is ready to seize this historic moment. PAGE 8

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**6** EDF's young lawyers rewrite the rules

**14** Celebrating a jewel of the Caribbean

**17** New climate leaders get down to business

**18** Could your home go all-electric?



# A win for the Amazon

Tropical forests are under siege, and so are the indigenous peoples who protect them. In a landmark win, EDF helped local partner Instituto Socioambiental prevail in Brazil's Supreme Court on behalf of indigenous rights. The court required the federal government to remove illegal loggers and miners invading 75,000 square miles of indigenous territories and spreading the coronavirus. The fight to end the deforestation of the Amazon continues.

# Window of opportunity

For the millions of Americans who care about clean air, clean water, healthy communities and the future of the planet, Joe Biden's election represents new hope.

While his first concerns must be to stop the spread of COVID-19 and help struggling workers and businesses, President Biden also ran on the most ambitious climate plan of any major party presidential candidate in history. He has pledged to cut America's greenhouse gas emissions, move toward a clean energy economy and protect those most vulnerable to pollution.

The choice of experienced environmental advocates including Brenda Mallory (*below left*) as chair of the Council on Environmental Quality and Michael Regan (*below right*) as EPA Administrator shows Biden is serious about climate change. Mallory has served on EDF's litigation review committee since 2017. She was also General Counsel on President Obama's CEQ and has overseen clean water and toxic chemicals at the EPA. Regan spent eight years at EDF where he led our clean energy efforts and forged unexpected alliances. His experience restoring morale at a battered state agency as North Carolina's top environmental regulator will prove invaluable as he takes the helm at EPA.



The President has no time to lose, and our cover story offers our view on what should be his immediate priorities. EDF policy experts and scientists advised the Biden transition team on how the new administration can achieve its goals. Our recommendations range from electrifying cars and trucks to ensuring cleaner air and clean power (*see cover story, p. 8*).

EDF stood strong against the previous administration's attacks on our environmental protections and now we will help fight for the new president's pro-environment policies (*see p. 6*). A Biden presidency will also move companies to do more, injecting momentum into EDF's work with corporations. Recently we successfully urged General Motors to withdraw its support for the Trump administration's legal attack on California's clean car standards.

Candidate Biden's campaign declared: "Communities of color are at the center of impacts of climate change and pollution, and they must be at the center of any solution."

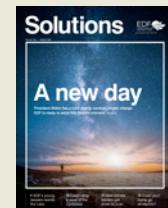
Organizations like EDF, as well as political leaders, must reach out to and learn from communities that have long been denied environmental justice. As part of our global mission, and with your continued support, EDF will help rebuild a better America — one that galvanizes the fight against climate change, generates millions of green jobs and increases protections for those hardest hit by pollution and COVID-19. It will not be easy, and we know there will be opposition. But it's a new day. Let's seize it.

  
Fred Krupp  
EDF President



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**On the cover:**  
After four years of struggle, America now has the opportunity to confront global warming, build a permanent clean energy economy and protect vulnerable communities from climate change. Where should President Biden begin? *Solutions* writers explore how EDF will support and drive Biden's climate success, page 8.

## Solutions

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# FIELD NOTES

## Recreational fishing on the hook

For some species, recreational fishing is estimated to account for more than half the fish taken from the sea. That's high enough to put species such as red snapper in the Gulf of Mexico at risk of overfishing. But without clear data, it's been impossible for regulators to set sustainable catch limits. That could change thanks to a new EDF program, Smartpass, that uses artificial intelligence to track boats and help calculate catch.

"Good, science-based fisheries management cannot happen without good data," says EDF's manager of oceans technology, Dr. Chris Cusack. "It feeds policy decisions, fights poaching and helps sustain stocks."

With 13.2 million saltwater fishers in the United States, EDF's Smartpass fills a critical data gap. The program uses cameras to monitor boats passing through ports and artificial intelligence to identify the type and number of vessels. Comparing that data with

dockside catches gives regulators a more accurate picture of how many fish are being caught.

"Currently, monitoring is done in person," Cusack says. "It's expensive and, because of the huge numbers of vessels, incomplete. Smartpass is a low-cost route to better data."

As oceans warm, improved data can also supply critical information about shifting fish populations, helping the world's fishers continue to feed the 3 billion people who depend on fish for protein.

Currently being piloted in Oregon and the Gulf of Mexico, the project is also undergoing trials in Indonesia, where the majority of fishing is done by small independent fishers and there is little or no data on stocks.

"This technology could transform the management of both domestic recreational fisheries and small-scale commercial fisheries worldwide," Cusack says.



## Cutting climate pollution is good for kids' health

The Regional Greenhouse Gas Initiative, an 11-state, market-based program EDF is helping expand, has:



**cut CO<sub>2</sub> pollution from power plants over 50% since 2005**



**and saved \$200–\$360 million in kids' health costs** from 2009–2014.



These savings are **25–50 times higher** than previously thought.

Sources: RGGI; Perera et al., Environmental Health Perspectives, 29 July 2020

## Chemicals in food add up

A new investigation by EDF finds that the Food and Drug Administration is ignoring a decades-old law that requires it to evaluate the cumulative effect of all related chemical additives that have health impacts before allowing them into food. This leaves consumers at risk of chronic disease.

"The collective failure by the FDA and the food industry to follow the law may have contributed to dramatic increases in chronic diseases including diabetes and kidney disease," says Tom Neltner, EDF's chemicals policy director. "Highly processed foods expose us to a mixture of chemical additives. That increases our health risks."

After analyzing nearly 900 safety reviews sent to the FDA, EDF found only one had even considered the cumulative impact of chemical additives. EDF and its partners have filed a petition demanding the FDA follow the law. The agency is obligated to respond to the petition and release it for public comment.





## MEET EDF

### Dr. Doria Gordon Ecosystems scientist

#### What are you working on?

I'm launching a project to identify how much CO<sub>2</sub> can be removed from the air and stored as carbon in agricultural soils and how to quantify any increases.

#### Why is this important?

The earth's soils store more than three times the amount of carbon as the atmosphere. We need to increase that reservoir to successfully tackle climate change. Agriculture has the potential to do this over hundreds of millions of acres.

#### What's the goal?

Once we can accurately measure that increase, we can speed progress by creating a market that compensates farmers for implementing beneficial practices.

#### So soil isn't just dirt?

No! In fact, just one tablespoon of soil contains more than 7 billion organisms — about the same as the number of people on the planet.

#### What will the world look like in 50 years?

I have to be optimistic. Despite inevitable climate impacts, we'll have decarbonized our economy, and developed new tech and better practices that both mitigate and increase resilience to change.



## BY THE NUMBERS



**15 states**  
prompted by  
EDF are work-  
ing together to  
make 30%  
of all truck  
and bus sales  
zero emission  
by 2030.

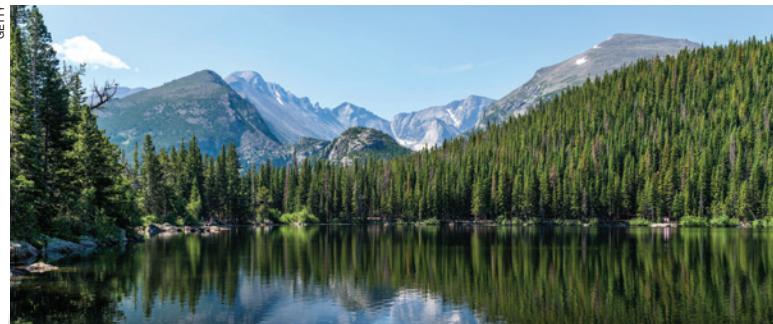
### Colorado gets tough on oil and gas

Colorado adopted new safeguards to prevent its 60,000 oil and gas wells from leaking or exploding. The rules, hammered out by an EDF-led coalition of environmental, industry and community groups, makes the state a leader in well safety, protecting workers and half a million Coloradans who live within a mile of an oil or gas well.

Leaking wells contaminate groundwater, spew climate-warming methane and can even cause fatal explosions. Colorado will require

companies to conduct monthly pressure checks, upgrade the cement used in well construction, better protect groundwater and more. Says EDF attorney Adam Peltz: "This is a win in so many ways — for worker and public safety, for the climate and for Colorado's water."

State officials called the EDF-led consensus "extraordinary" and a model for other oil and gas states. Colorado also banned routine gas flaring, a source of air and climate pollution.



New oil and gas safeguards will protect Colorado's water.



### Pedal power

An innovative pilot project from EDF and partners in China outfitted 100 share bikes at a Beijing university with sensors that measure air pollution. The data, collected every second along a rider's journey, is intended to help pinpoint local pollution hotspots and guide riders toward healthier routes. China averages about 47 million shared bike rides a day. Turning bikes into mobile pollution monitors could help create extensive air quality monitoring networks in cities battling smog.

# They didn't fight for four years to do something small

By Joanna Foster

Four young attorneys joined EDF as we expanded our large legal team around the time Donald Trump took office and were immediately plunged into the firestorm of the last four years. They fought hard to preserve our bedrock environmental protections, and thanks in part to their efforts, that fight was won. Now they are working to make real progress in the next four years.

**“YOU HAVE TO FIGHT FOR EVERY STEP.”**

It's grueling, but you just keep going.”

That's how EDF attorney Rachel Fullmer describes running the Leadville Heavy Half, a 15-mile trail race in Colorado, where she lives. The race tops out at over 13,000 feet. But it's also an apt description of her relentless fight over the last four years to defeat the Trump administration's repeated attempts to unravel public health protections.

When Fullmer joined EDF as a legal fellow in 2016, she expected to be part of a team helping states implement the Clean Power Plan. Instead, she was thrust into a pitched battle to defend Americans' basic right to breathe healthy air.

For Fullmer, this fight is personal. She's from New Carlisle, a small town in Indiana with just one stop sign and dozens of industrial sites. At 17, Fullmer helped her community block the construction of a new coal gasification plant slated for the field across the street from her mom's church. Ever since, she's been committed to protecting towns like hers from environmental pollution.

“When I study some of these proposed EPA rollbacks, it's not just so many extra tons of pollution somewhere in the country,” she says. “I know exactly where some of these facilities are, because they're in and around my hometown. And I know the names of the kids who go to elementary school down the street.”

Fullmer is one of four young attorneys — the others are Alice Henderson, Ben

Leviton and Rosalie Winn — who joined EDF shortly before the 2016 election and rose to the extraordinary challenge posed by the worst environmental president in U.S. history.

“These four are ready for whatever comes next,” says Vickie Patton, EDF general counsel. “The last four years has steeled them and made them all experts in their fields. Their dedication and perseverance motivates me and gives me incredible hope.”

Thanks to the relentless efforts of EDF and many others, the Trump administration has lost more than 80% of the court challenges to its environmental deregulation, with 83 out of 102 cases ending either in rulings against the policies or in their withdrawal.

Early on, the legal team successfully fought back against then-EPA administrator Scott Pruitt's unlawful attempt to suspend leak detection rules for oil and gas operations. The court ruled that Pruitt had illegally tried to sidestep the regulatory process, a decision EDF and our allies repeatedly used to disrupt numerous other administration attacks on climate and health safeguards.

EDF also fought back against Trump administration rollbacks with nearly 100 Freedom of Information Act requests about risks to public health and scientific integrity. Ben Levitan, who filed his first request on Inauguration Day 2017, quickly became known as “the FOIA guy.”



Alice Henderson



Ben Levitan



Rachel Fullmer



Rosalie Winn

D CLARK SCOTT PHOTOGRAPHY

His relentless push for transparency repeatedly exposed the Trump administration's penchant for putting polluters over public health, showing, for example, how the EPA had removed or modified more than 1,900 webpages relating to climate change or air quality.

For environmental law, one clear benefit of the Trump era has been the unprecedented level of collaboration that it fostered among environmental organizations, health associations, community groups and leading businesses. Working with these diverse groups, Alice Henderson helped build powerful coalitions that fought the administration's reckless rollback of the popular and highly effective clean car standards.

**“EDF builds coalitions to secure victories in the courtroom. It’s about rulings, it’s about changing policy, it’s about changing minds. And time and time again, EDF succeeds in getting all three.”**

— Richard J. Lazarus,  
Howard and Katherine Aibel Professor of  
Law at Harvard Law School; EDF Trustee

For her part, Rosalie Winn focused on making sure the true cost of climate change is counted. That helped win a major legal victory on methane waste. The case exposed the administration's total disregard for science in its haste to demolish critical protections. As the judge put it, the administration cannot "alter by fiat what constitutes the best available science."

As part of EDF's legal team, the quartet of young lawyers worked nonstop and on high alert as they confronted the chaos of the Trump administration. Now, they can look forward to working with a White House that offers them a chance to help create stronger new environmental protections, not just defend old ones.

"It's none too soon," Henderson says, staring out her window as plumes of gray smoke from Colorado wildfires drift



EDF's attorneys aim to reduce methane pollution nationwide.

ISTOCK

across the sky. The fires have been made bigger and more destructive because of climate change.

Over the past four years, EDF fought hard to preserve the integrity of the Clean Air Act, and now, as a new president takes office, we will use the power of that law to create the next generation of bold, new health and climate protections. Our goal is to help create durable safeguards that slash climate and air pollution from the biggest sources.

Our legal team will play a central role in EDF's efforts to clean up the transportation sector. We will advocate ambitious next-generation standards paired with investments in manufacturing and infrastructure that address the array of serious air pollutants from cars, trucks and buses and help achieve 100% zero-emission passenger vehicle sales by 2035, and 100% zero-emission truck and bus sales by 2040 while advancing the Biden administration goal of creating 1 million new jobs. Achieving these goals will be a huge step forward for the climate and will dramatically improve air quality in communities nationwide, saving more than 20,000 lives every year.

A second priority is to dramatically cut pollution from the oil and gas sector. Under Obama, the EPA put in place the first methane standards for new oil and gas facilities. Methane causes more than 25% of the warming we experience today and is emitted alongside other smog-forming and toxic pollution from oil and gas sites. The Trump administration tried to roll back those safeguards, an effort we fought in court. Now, under a Biden EPA, science again holds sway, and we will work not just to reinstate and strengthen the old standards, but to limit pollution from more than 800,000 existing oil and gas facilities that are now allowed to dump pollution into the

atmosphere unchecked by the EPA.

Inevitably, there will be pushback from the fossil fuel lobby, but the politics of climate change are shifting. Businesses are beginning to respond to investor and consumer demand to reduce pollution. Nine power companies sided with EDF in opposing the rollback of the Clean Power Plan, and major automakers are working with California to support pollution standards substantially more protective than Trump's damaging rollbacks. Most recently, following urging from EDF and others, General Motors withdrew its support for these rollbacks. And even oil and gas giants like BP, ExxonMobil and Shell have called for federal methane regulations.

For the young guns on EDF's legal team, having successfully run the marathon of the last four years, the future looks bright.

"The race is far from over," says Fullmer. "But having come this far, the road ahead fills me with hope."

## Inside Solutions

Online conversations with experts

### Next generation takes charge: Meet three climate leaders

**Alice Henderson**, EDF attorney, on defending climate protections in court.

**Chad Hunter**, founder of Carbon Insights, on environmental entrepreneurship.

**Khyati Rathore** of Defend Our Future on the new wave of youth and employee activism.

Moderated by **Yesh Pavlik**, host of EDF's podcast, *Degrees*.

**March 4, 2021, 2–3 p.m. EST**  
Sign up for this exclusive EDF members webinar at [edf.org/InsideSolutions](https://edf.org/InsideSolutions)

# priorities for President Biden

By the *Solutions* team

**It's a new day. A new president is fighting global warming, and EDF is helping. Here are the most significant actions the new administration can and should take now to cut emissions, build a clean energy economy and protect those most vulnerable to pollution.**



## 1 Renew U.S. climate leadership worldwide

**C**LIMATE CHANGE INTERSECTS WITH every other environmental challenge faced by the new president. Renewed leadership from the United States is critical to solving this global crisis.

Rejoining the Paris climate accord is step one, but President Biden needs to do

of the world's top 10 emitters — which together account for more than half the world's emissions — step up their efforts, that motivates other countries to take stronger climate action."

A U.S. target should cut climate pollution at least 45–50% below 2005 levels by

much more to repair the damage done to the climate and to U.S. credibility. Recently, China, the EU, Japan and South Korea all announced they will take more aggressive climate action. Our nation must do the same.

"The United States needs to set a target that is ambitious and credible," says Nat Keohane, EDF Senior VP for Climate. "When five

2030. (Emissions have already dropped 12% from 2005 to 2019.) This will require strong domestic policies, including executive orders, regulations, tax credits and new legislation. Congress should take advantage of every opportunity, from economic recovery legislation to infrastructure bills. A major focus should be on building electric trucks, buses and cars and producing clean electricity to power them. EDF is working with both parties to get this done.

Biden has picked a team that will deliver results. Former EDF staffer Michael Regan, Biden's EPA head, led the implementation of science-based climate policies in North Carolina. His experience and skill in building coalitions will drive U.S. efforts to clean up energy and transportation. Brenda Mallory, an EDF legal adviser picked to lead the Council on Environmental Quality, will help ensure that climate impacts are considered in major industrial projects. If confirmed, Biden's climate team is primed to restore U.S. leadership and reinvigorate the global climate fight.

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## 2 Power up the economy

**W**ITH PRESIDENT BIDEN IN THE White House, we expect a big push for a stimulus package that will not only boost an economy reeling from the pandemic but deliver urgently needed progress on climate change.

"The road to recovery from COVID-19 must also lead our nation to a more stable climate and a safer, more prosperous and equitable society," says Elizabeth Gore, EDF's head of political affairs.

EDF is pushing for pro-climate investments to be included in any economic recovery package. We believe the way to start building this new, better future is by decarbonizing the power sector and electrifying transportation. Together, those sectors account for more than half of U.S. climate pollution. Federal investment in

decarbonization will cut climate pollution and set the course for the future emissions reductions necessary to reach net zero by 2050. This goal aligns with the best available science on averting the worst impacts of climate change.

These same investments are also

critical to jump-starting the economy. President Biden has pledged to create 10 million clean energy jobs, including 1 million clean transportation-related jobs. Before the pandemic, nearly 3.4 million Americans worked in clean energy. That's three times the number in the fossil fuel industry, and clean economy jobs were growing twice as fast as nationwide employment.

Our plan for moving toward a cleaner future is straightforward:

### Decarbonize electricity

- Extend and expand existing tax credits for clean energy like wind and solar, and create new tax credits for technologies like energy storage and offshore wind.
- Invest in grid modernization and

transmission infrastructure to accommodate the surge in clean power and increase the reliability and resilience of the grid.

### Clean cars, trucks and buses

- Through incentives, encourage manufacturers to retool their facilities and build electric vehicles, charging stations and batteries, with the goal of getting to 100% zero-emission new cars by 2035 and 100% zero-emission truck and bus sales by 2040.
- Build a national network of 500,000 charging stations for all sizes of vehicles.
- Make a major investment in mass transit systems across the country, encouraging cities and states to increase electrification of buses and trucks, and prioritizing communities overburdened by transportation-related pollution.

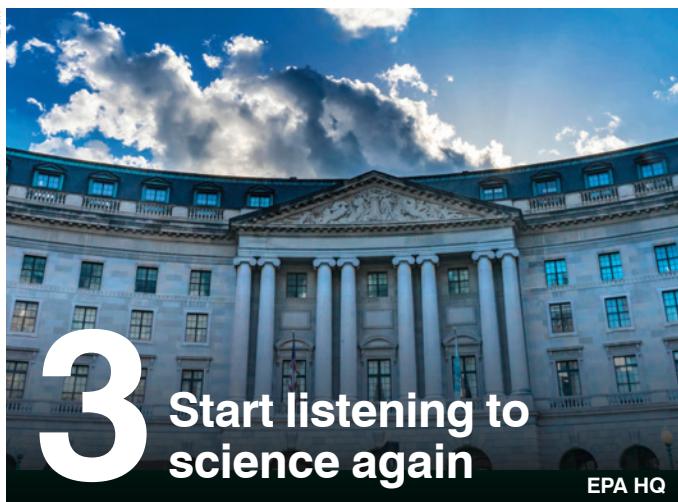
"The Biden climate plan sets a new bar for ambition," says EDF's Vice President for U.S. Climate Derek Walker. "We're ready to help make it happen."

### TAKE ACTION»

Tell the Biden-Harris administration and Congress to Power Up, America! We need more clean trucks and buses and clean electricity to run them.

[edfaction.org/PowerUp](http://edfaction.org/PowerUp)

ALAMY



**T**rump's record on science was abysmal. He denied climate change and appointed industry lobbyists to key science agency posts. His administration censored government scientists and suppressed and manipulated data for political ends. More than 1,600

impossible to create effective policies to address pollution and advance public health. We also believe leadership matters. Having a president who publicly affirms the value of science and technical expertise is a huge step forward. We're working with key Biden officials to

scientists left the federal government in the first two years of his administration. "Throughout the administration, science was perverted to reach a predetermined outcome," says EDF Chief Scientist Dr. Steven Hamburg.

EDF was founded by scientists and science drives all we do. Without first-rate science, it is

restore objective science to its rightful place — at the heart of federal environmental policy and decision-making.

The nation needs to restore scientific integrity at three levels:

- Rebuild the ranks of civil service researchers.
- Ensure that high-level political appointees are qualified and impartial.
- Appoint credible scientists to science advisory boards.

The new administration must boost spending for climate research at the EPA and Department of Energy and invest in research and development to advance clean energy and storage systems and develop the next generation of carbon removal technologies.

"The scientific community stands ready, independent of politics, to rebuild our country's climate leadership," says Hamburg. "Let science lead the way to a better future."

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## 4 Protect communities from pollution and toxic chemicals

**N** IN 2019 ALONE, THERE WERE FIVE major chemical fires in and around Houston, putting millions at risk,

protections nationwide have threatened the health of communities. Now, it is critical that President Biden not only reverse

particularly in communities of color and low wealth located closest to the facilities.

"That's what happens when you relax environmental regulations," says Dr. Grace Tee Lewis, an environmental epidemiologist at EDF.

From toxic chemicals to air pollution, the Trump administration's efforts to roll back environmental

the damage done over the last four years, but also strengthen standards to protect those most at risk from pollution and toxic chemicals.

As part of this, the Biden EPA should fully implement the Lautenberg Chemical Safety Act. EDF was instrumental in passing the law, which protected Americans from harmful chemicals in the marketplace. Despite being passed by overwhelming bipartisan majorities in Congress in 2016, it was undermined by the Trump administration. Under the leadership of Michael Regan, the EPA should now advance actions that protect the public's health and engage communities disproportionately harmed by chemical exposure.

The Biden administration also has the opportunity to strengthen protections

"I helped launch the Food and Agriculture Climate Alliance, which includes groups representing the vast majority of America's farmers and ranchers. Under Biden, we will push for incentives that promote climate-smart farming and clean drinking water."

— Callie Eideberg, Director, Government Relations



"I strive to ensure that the transition to clean vehicles benefits everybody. The shift has been a long, uphill battle, but I think the tide is turning. With a new administration and more states and manufacturers getting on board, this work can really accelerate."

— Larissa Koehler, Senior Attorney, Energy



against lead poisoning. EDF will help advance efforts to replace lead water service lines to 9.3 million homes, with a focus on equitable funding for community programs. The new administration should also increase protection of children's health by immediately updating the standards for lead in dust, paint and soil.

In addition, we will help the Biden

administration strengthen the Mercury and Air Toxics Standards, which prevent an estimated 11,000 American deaths annually from hazardous pollutants spewed by coal- and oil-fired power plants. As part of this effort, we will urge the EPA to close the Trump administration's air toxics loophole, which allows large industrial facilities to opt out of re-

ducing pollution.

"The new administration needs to take immediate action to restore scientific integrity and enact standards that safeguard the health and well-being of communities across the country, especially those at the greatest risk," says Sarah Vogel, EDF's Vice President for Health.

Washington will take real steps to protect our communities."

### A bipartisan issue

Even in a divided Congress, President Biden will find support. Whether it's tackling sea level rise, addressing drought or increasing flood protection, resilience transcends party politics.

Under the Trump administration, more than 20 pieces of bipartisan legislation addressing resilience were introduced in Congress. This includes two EDF-supported bills: one requiring the mitigation of flood risks on federally funded construction projects and the second, the Growing Climate Solutions Act, which sets the stage for farmers to make money from practices that lock nutrients in the soils.

As EDF partner Rob Larew, president of the National Farmers Union, says, "There are concrete actions farmers can take to build resilience to weather extremes ... but they need strong policy behind them."

Resilience legislation that creates jobs, protects communities, promotes equity and delivers environmental benefits stands a good chance of success, regardless of who controls the Senate.

Says EDF Senior VP of Ecosystems and Oceans, Eric Schwaab: "Whether it's farms, coasts or other hard-hit areas, this work is about protecting people. Who can argue with that?" ■



## 5 Build climate resilience

**HIS CAMPAIGN CLIMATE PLAN,** Joe Biden rightly called climate change "an existential threat" to the nation, one that "damages our communities with storms that wreak havoc on our towns and cities and our homes."

In response, the president has proposed a national program to build the nation's resilience to climate change.

With 20 years' work in climate resilience, EDF is well-positioned to help. We have designed a set of policies to help America prepare for, and withstand, the effects of climate change.

Under Biden, there is now the real possibility many of these policies can be enacted. They include:

- New financial mechanisms to fund natural flood protections for cities, farms

and transportation hubs.

- The creation of a Climate Resilience Corps of young people helping prepare communities for climate disasters.
- The appointment of a chief resilience officer to ensure that resilience is considered across every government agency.
- Training and money to help vulnerable states create climate adaptation plans.

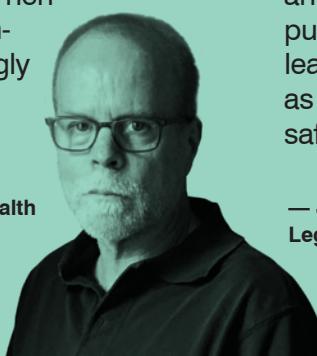
"I have watched my home state's extraordinary efforts to protect its people and coasts from climate-driven storms and sea level rise while the federal government ignored the threats," says EDF's New Orleans-based head of coastal resilience, Steve Cochran. Louisiana loses a football-field-sized area of wetlands to the sea every 100 minutes. "Now there is hope

"I spent 15 years working to get a revised Toxic Chemicals Substances Act passed. Then under Trump, I spent four years pushing back against the EPA's increasingly narrow look at toxics. Now we can make sure the chemical safety law tackles health inequities.

— Richard Denison, Lead Senior Scientist, Health

"New Mexico is creating its first-ever limits on oil and gas methane pollution, and I'm pushing to ensure they are nationally leading standards. States can serve as models for federal methane safeguards."

— Jon Goldstein, Director of Regulatory and Legislative Affairs, Energy





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# Taking off: the world's biggest carbon market

China's new national emissions trading system could take a major bite out of the world's climate pollution. EDF has been a key partner.

**W**HEN WANG ZHIXUAN WAS A child, his home was lit by kerosene lamps. People in his village in northern China lined up day and night to draw water from a well with a bucket. Today, China's electric power system is the largest in the world, and Wang is vice chair of the China Electricity Council, the major trade group for the country's electricity companies. Wang has spent decades nudging his industry to reduce its environmental impacts, and as a longtime EDF ally, has become a leading Chinese advocate of market-based solutions. This year could prove seminal in our partnership — and in the world's efforts to combat climate change.

China's massive energy system relies heavily on coal-burning power plants,

which are a major source of climate pollution as well as deadly air pollution. China is working to reduce both, and its new national emissions trading system, which puts a price on carbon pollution from 1,700 power plants, will help. Power plants are the source of more than one-third of China's total emissions. That means the ETS will be by far the world's largest carbon market. Eventually, the ETS will expand to other high-emission industries like aluminum, cement and iron and steel production. The goal: reduce China's climate pollution economy-wide while supporting low-carbon economic growth.

"Addressing climate change is a common challenge for all mankind and a key to China's sustainable development," says Wang. "Our cooperation with EDF has played a fundamental role in promoting China's emissions reductions by market means."

## A long partnership

EDF has been working in China for 30 years. We were an early partner with Wang in the development of China's sulfur dioxide emissions trading program, which created a foundation for carbon trading. We helped design China's seven pilot carbon markets, which began operating in 2013 and informed the launch of the national ETS. Chinese participants trained on EDF-designed software that simulates the experience of a live carbon market and teaches the principles of emissions trading.

A successful ETS is key to meeting China's new climate goals. In 2020, at a U.N. General Assembly meeting, Chinese President Xi Jinping unexpectedly pledged to strengthen China's Paris Agreement climate commitments and aim for carbon neutrality by 2060. That goal, if achieved, would be a major step forward in the fight against climate change. Experts have estimated that meeting this target would single-handedly bring down projected global average temperatures by around 0.2 to 0.3 degrees Celsius by 2100.

But hard work lies ahead. "It is a strenuous challenge and there are many unknown problems to solve, but we are confident we can meet this goal," says Wang. "The ETS will play a big role."

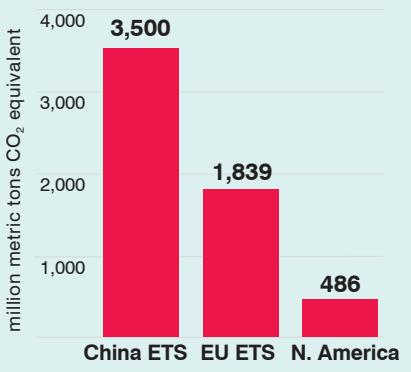
Another key to success is accountability. The pollution reductions are being overseen by a new cadre of environmental enforcement officers, more than 55,000 of whom were trained in a program EDF established with leading universities. EDF and our partners will be evaluating the effectiveness of China's ETS and advising on its expansion to other industries.

EDF will continue to advocate for more ambitious pollution reduction targets and policies in China, including addressing methane, a powerful near-term climate threat. EDF research suggests that China can cut its carbon emissions in half by 2035, helping the world avoid the worst impacts of climate change.

Shanti Menon

## A big step forward on climate

China's ETS covers nearly twice as much power plant pollution as the EU's and far more than the state and provincial markets in North America.



# New respect for natural flood defenses

North Carolina is unlocking private markets to fund the restoration of wetlands and other delicate habitats that protect communities from floods.

**T**HEY ARE AMONG THE WORLD'S most biologically diverse ecosystems, teeming with insects, plants and wildlife. But wetlands, along with other natural features like floodplains, forests and streams, also play a critical human function: they are our first line of defense against floods.

"By slowing surface runoff and giving rivers more room to flow, these features protect our towns and cities during times of intense rainfall or storm surge," says Will McDow, EDF's director of resilient landscapes.

Between 2000 and 2018, flooding cost the United States \$830 billion and claimed at least 6,200 lives. Climate change, which supercharges storms and causes sea levels to rise, will make the problem even worse.

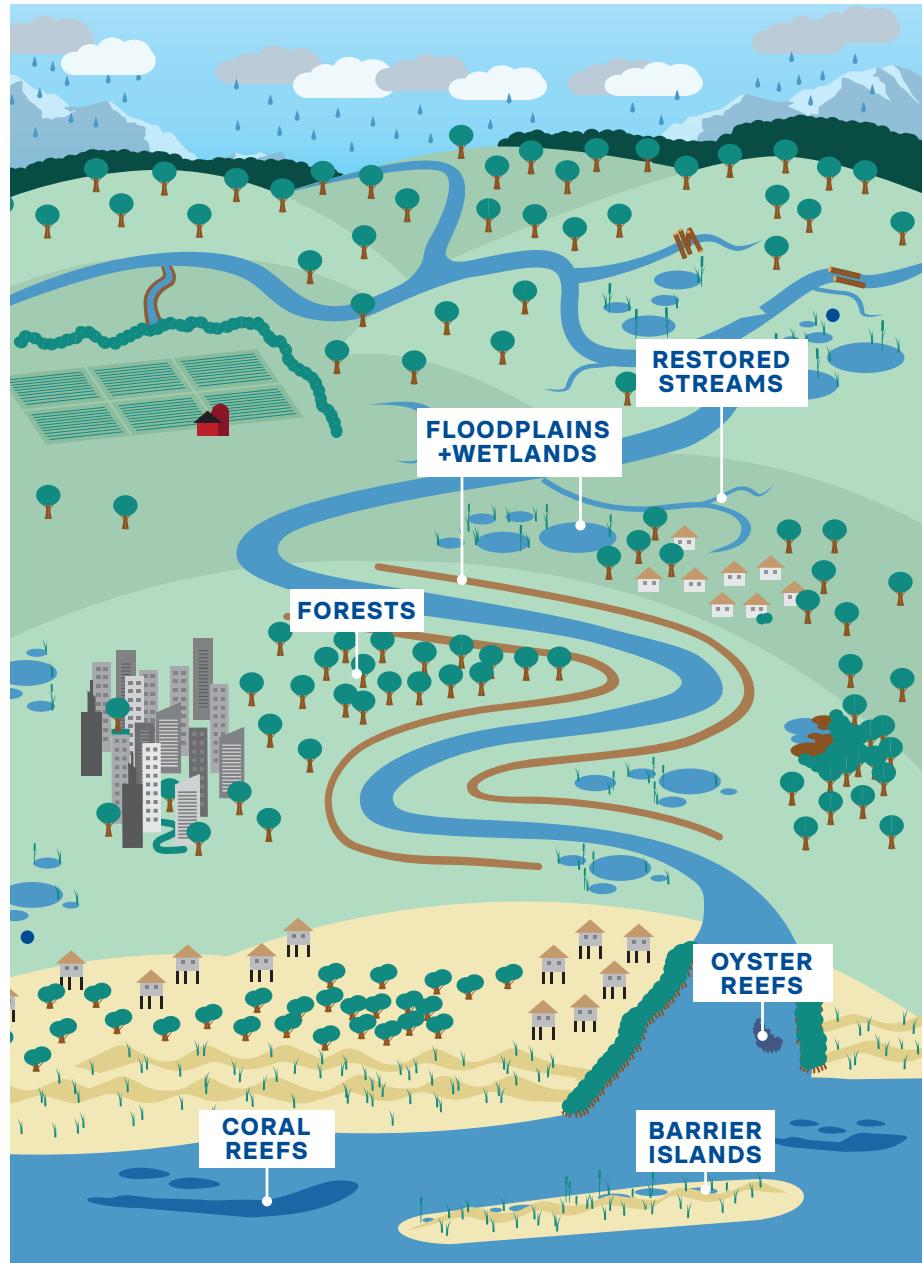
Yet erosion and other factors mean that U.S. wetlands are disappearing at a rate of 70,000–90,000 acres a year. And in storm-ravaged states up and down the coasts, funding for the protection and restoration of these and other natural infrastructure has been limited.

"Many decision-makers don't yet understand the value of natural infrastructure," McDow says.

That's why EDF worked with North Carolina to draft and pass a law that engages private companies to efficiently deliver projects that restore wetlands, floodplains and more. The measure was unanimously passed.

The new law followed a study we did with North Carolina State University, which found that just 500 acres of wetlands would reduce flooding in the town of Goldsboro by up to 28%. Additional research shows that every dollar spent on resilience reduces the cost of disaster recovery by up to six dollars.

North Carolina's new law creates a mechanism for quantifying the flood-reducing effect of different types of natural infrastructure. It will enable the state



to put a dollar value on the benefit of restoring wetlands and other flood-protection projects and allow businesses to invest in natural infrastructure projects to offset the risk posed by upstream flooding. An added benefit: the protection of the state's delicate

wetland habitats.

North Carolina's new law also provides a blueprint that other flood-ravaged states can follow.

Says EDF's McDow: "When you can harness the power of the private market to create jobs, reduce flooding, restore habitats and save money, it's a winning formula for everyone."

Tasha Kosviner



## 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](http://edf.org/wilson)*

## A CUBA SCRAPBOOK

# Protecting a Caribbean jewel

By Tasha Kosviner

For two decades, EDF has worked with Cuba to safeguard its marine resources and help fishing communities thrive. Our success has inspired conservation efforts across the Americas.

**1** Cuba's seas are home to vibrant mangrove forests, seagrass beds and some of the best-preserved coral reefs in the Caribbean. But years of overfishing and the impacts of climate change put these delicate ecosystems under threat. Today they are beginning to recover.

**2** Twenty years ago, EDF partnered with Cuban officials to accelerate the protection of 25% of Cuba's coastal waters, including the Gardens of the Queen, the largest marine park in the Caribbean and one of the world's best-preserved coastal marine ecosystems.

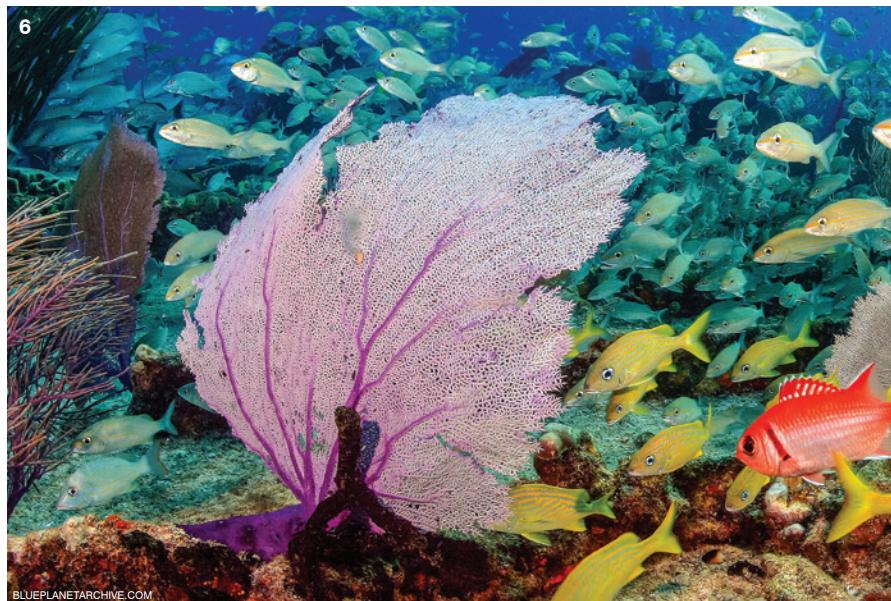
**3** Over the years, EDF collaborated with hundreds of Cuban partners. The SOS Pesca Project brought scientists, fishers and managers into two fishing communities — Playa Florida and Guayabal — to jointly address overfishing and habitat loss. The project inspired a network of similar collaborations in coastal communities across the island.

**4** Almost one-fifth of the world's 500 shark species are found in or around Cuban waters. With EDF's support, Cuba was the first Caribbean island nation to enact a national plan to protect sharks and rays, whose populations worldwide are in decline.

**5** Strong science also guided new lobster and shrimp regulations and new catch limits to help the lane snapper fishery recover from overfishing. Cuba also made the colossal, internationally threatened goliath grouper, pictured here with EDF scientist Doug Rader, a protected species.

**6** In 2019, Cuba passed its first-ever national fisheries law to end overfishing, recover depleted stocks and help struggling communities. EDF contributed scientific expertise to guide the new law, which now mandates science-based management of all species.

**7** Cuba's success is inspiring international action. In Chile, Belize, Mexico, the United States and elsewhere, EDF has brought together fishers, scientists and regulators, helping to create new laws and bilateral agreements that preserve marine ecosystems, secure local food production and help coastal towns adapt to climate change.





2



5

NOEL LOPEZ



7

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## One of the most important financial decisions you can make.

Did you know that in just a few simple steps, or as little as one sentence, you can help save the planet?

By making a gift to EDF through your will, trust or a beneficiary designation, you can create an enduring gift and help build a brighter future.

**Now is the time to take action.** Contact us today to schedule a no-obligation conversation with one of our gift planning experts.

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**Legacy@edf.org**  
**1-877-677-7397**  
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# Tackling beauty's hidden peril

“IT’S MY FAULT.” THOSE ARE WORDS NO

mother should utter after losing a baby.

But that was what nail salon worker Van Nguyen told journalists after suffering two miscarriages.

Doctors had advised Nguyen to stop work at her San Francisco salon, fearing the chemicals she was exposed to at work would harm her unborn child. But Nguyen, like thousands of Vietnamese and other immigrant beauty salon workers, couldn’t afford to.

“This is what I chose to do for a living,” she said. “So I have to live with it.”

We all deserve to live and work in an environment free of harmful chemicals. Yet there are currently thousands of unregulated chemicals in our day-to-day beauty and personal care products. Among them is toluene, found in nail polishes and associated with birth defects, miscarriages and organ damage. Many shampoos, lotions, soaps and cosmetics also contain chemicals linked to cancers, liver disease, asthma, diabetes, reproductive disorders and more.

“There are increasing incidences of diseases and disorders with no genetic explanation,” says EDF’s director of consumer health Boma Brown-West. “So we know there’s an environmental component. We are exposed to toxic chemicals daily—in our food, clothing, furniture and in the products we put on our skin. The quantities may be small but the cumulative effect can be devastating.”

The burden is often disproportionately borne by people of color, both in a work environment and because toxic chemicals are more prevalent in beauty products marketed to these communities.

EDF works with the nonprofit ChemFORWARD and leading businesses to identify and eliminate the most concerning toxic chemicals and provide manufacturers with safer alternatives.

“Product manufacturers need accurate data if they are to switch to safer chemicals with confidence,” says Brown-West.

Last year, our work together resulted in the identification of several safer alternatives to commonly used, but highly toxic, preservatives including

Preservatives used in lipsticks and other cosmetics release formaldehyde, a known carcinogen.

Exposure to PFAS, found in shampoos and conditioners, can cause liver damage, thyroid disease and developmental issues.



parabens, linked to reproductive damage, miscarriage and some cancers. The preservatives list is part of a broader directory of safer ingredients to replace the most common toxic chemicals used in cosmetics.

“This work gets us closer to a future where every product, on every shelf, is made with demonstrably safer ingredients,” says Brown-West.

As for Nguyen, her salon now uses only toluene-free products. She has also become an outspoken advocate for the elimination of toxic chemicals in beauty products and was the star of the documentary *Painted Nails* (available to view on *kanopy*), which highlights the issue.

“Voices like Nguyen’s are a vital part of this fight,” says Brown-West.

Tasha Kosviner



## Meet the new climate entrepreneurs

**S**INCE 2008, EDF'S CLIMATE CORPS fellowships have enabled over 1,100 dedicated graduate students to drive progress on clean energy and climate at major corporations, government agencies and nonprofits.

The program has been a rousing success. To date, fellows have recommended over 2.2 million metric tons of greenhouse gas reductions — equivalent to taking more than 460,000 cars off the road — and more than \$1.6 billion in energy savings. But Scott Wood, the program's director, wanted to do more.

"We have such a fantastic network of alumni working in all sectors of the economy," Wood says. "How can we empower this group of emerging climate leaders to have an even greater impact?"

The answer was to develop an alumni network where former fellows, hosts and partners can connect with one another and benefit from additional training and resources. One part of the network, a workshop/incubator for entrepreneurs, launched last year and has already helped several alumni grow their ideas into successful business startups.

Eliza Edge, a 2019 Climate Corps fellow, *pictured above*, fleshed out her idea for tackling fast fashion, an industry built on waste. In March, Edge launched Cahoots Co., which rents artfully repaired used children's clothing to subscribers who pay as little as \$15 a month.

"I got a framework for thinking through all of the steps," Edge says of the workshop. "They helped me address questions like how much money will I

need? How can I get the right press coverage, in my case the mommy influencers? The network served as a kind of advisory board before I had an advisory board."

Children don't stop growing just because there's a pandemic, says Edge, noting: "We've had more signups because schools are meeting outside. Now we are featuring winter coats and clothing that can be worn in layers."

Shannon Parker and Chad Hunter, 2019 fellows who met through the alumni network, launched Carbon Insights, which will work with financial institutions to translate individuals' spending behavior into personal carbon footprints.

"When you get your credit card bill, for instance, you would see the carbon impact of every purchase," Hunter said. "We use established techniques and our own algorithms to figure it out."



Robert Ddamulira

Recently, Carbon Insights was accepted into the highly regarded Joules Accelerator, which provides financing opportunities to clean energy startups.

Meanwhile in Delaware, alum Robert Ddamulira started an energy efficiency service that uses sensors and smart incentives to reduce corporate energy use by changing worker behavior. His company, GreenPesa, is already working with businesses in multiple states.

"Being part of a group of Climate Corps alumni helped clarify my ideas," Ddamulira said. "It got me excited about where I could go next."

The alumni offerings go well beyond entrepreneurship to focus on advocacy, arming the climate leaders of today and tomorrow with the tools and knowledge they need to influence policy changes.

"These young business leaders have the power to change the world," said Yesh Pavlik, host of *Degrees*, EDF's new podcast about planet-saving careers.

The 2020 class of 100 fellows mostly worked remotely, but that didn't tamp down their enthusiasm.



Fiona Li

Fiona Li helped Colgate-Palmolive create its roadmap to sustainability by 2025. "We wanted to give employees a simple tool so that making decisions about sustainable manufacturing didn't seem like an extra job," Li said. "We made a checklist that allows them to connect the dots as they go."

Colgate-Palmolive has already rolled out Li's toolkit to senior leaders in 30 countries and 100 sites.

That kind of success keeps Wood inspired. "Hearing stories of our alumni's impact gives me a fresh injection of optimism and hope every day," he said.

Debra West

# Upgrade your home, lower your impact

**A**CROSS THE COUNTRY, THE CALL for all-electric homes is growing. In California, dozens of communities, including San Francisco, have already adopted policies requiring new residential construction to install only electric appliances.

The reasons are clear: 70 million homes and businesses in the U.S. use gas, oil or propane and produce 560 million tons of CO<sub>2</sub> per year. That's 10% of all U.S. greenhouse gas emissions.

Shrinking your home's carbon footprint isn't the only reason to go electric, says Timothy O'Connor, EDF's senior director of energy transition strategy. Home appliances without proper ventilation, like many stoves that use natural gas, have been linked to an increase in childhood asthma.

And going electric can save you money over time.

Switching to all-electric is easiest when building a new home, but you can also move in that direction when replacing a furnace or redoing a kitchen. Here are a few options:

## ■ Air-source heat pumps

Heating and air conditioning account for 46% of a home's energy consumption. Improvements in technology have made air-source heat pumps a viable option for heat and cooling in most climates. The pumps, which save energy by transferring heat rather than

generating it, can cut your energy bills by approximately 50% compared to a furnace or baseboard heating. The systems can be ductless or use a home's existing ductwork.

**For more info:** [bit.ly/3jz2Qbz](https://bit.ly/3jz2Qbz)

## ■ Hot water heaters

Water heaters are a home's next biggest energy guzzler, accounting for 14% of energy usage. A heat pump water heater is more efficient than a gas water heater and can save a family of four some \$350 a year over a standard electric water heater.

**For more info:** [bit.ly/35yTp7y](https://bit.ly/35yTp7y)

## ■ Induction stoves

Serious cooks used to say they would only use gas stoves, but induction ranges are changing their minds. Induction cooking is electromagnetic and moves the electrons in pots and pans to generate heat. Some of the benefits include being able to boil water in half the time of a gas or electric coil range, and cook food evenly across the entire area of the pan. The downsides? Induction ranges cost more than regular electric stoves and require special cookware.

**For more info:** [bit.ly/3jBP7kg](https://bit.ly/3jBP7kg)

## ■ Smart thermostats

A smart thermostat learns from your behavior, delivering heating or cooling when you are home and minimizing it when you are out. These thermostats let you control your HVAC system remotely and some produce monthly reports so you can track your energy use.

**For more info:** [bit.ly/2J4r9SA](https://bit.ly/2J4r9SA)

## ■ Time of use pricing

Check with your utility to see if the cost of electricity in your area varies depending on the time of day. In places where there is more energy available at night, like areas that are connected to wind energy, homeowners might do their laundry then to save money and cut carbon. Some utilities will send texts saying when it's best to use appliances. Homeowners with electric appliances like smart water heaters that can be programmed to turn on at night can take advantage of low-cost and low-carbon electricity as well.

## ■ Energy audit

Investing in a new HVAC system won't maximize your savings if you've got leaky windows. Most utilities offer energy audits that often point to easy fixes, like adding weather-stripping to windows and doors or switching to LED lightbulbs.

## ■ Geothermal

A geothermal system, or ground-source heat pump, can cut a home's energy bills by up to 65% over traditional HVAC systems. Geothermal works by transferring heat from underground, where the temperature is a constant 50 to 60 degrees Fahrenheit. The cost of installation has come down as the technology improves, but it can still be prohibitive. Federal, state and local tax credits can help, and some utilities offer rebates.

**For more info:** [bit.ly/31Obxcn](https://bit.ly/31Obxcn)

"It's a great time to go all electric, for the homeowner and for the planet," says O'Connor. "Change starts where you live, and taking fossil fuels out of our homes will go a long way toward reducing greenhouse gas emissions."

**Check your home's energy use at**  
[bit.ly/3kzV1nV](https://bit.ly/3kzV1nV)

Debra West



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## ASK AN EXPERT

## How do I counter disinformation?

**Lindsey Walaski, Philadelphia, asks:**  
*The 2020 presidential election is a recent example of just how harmful the misinformation spread by social media can be. The same channels are being used to undermine the science of climate change. How is EDF fighting this and what can I do to help?*

**EDF's digital marketing specialist, Lauren Guite, replies:**

Using social media to spread dangerous misinformation about the science of climate change is a common tactic of people working to undermine climate action. EDF has teamed up with other green groups to fight back. Together, we are helping social media networks identify and take action against the worst offenders, a list that includes familiar names such as Heartland Institute as well as

lesser-known groups such as CFACT.org, ClimateDepot.com, WattsUpWithThat.com and the Koch Brothers-funded CO<sub>2</sub> Coalition.

When using social media, always check sources before you share. Ask yourself, is the source recognizable? Is there a reference you can easily find? If you spot fake news, report it immediately. Social networks do review those reports, and you'll see your impact as fake news is taken down.

What if someone in your network shares something that isn't true? Research shows that questioning sources is more effective than arguing with facts, so direct them to sites like triplecheck.org, Snopes.com or, depending on your audience, the more right-wing checkyourfact.com or leadstories.com.

You can also use your social media accounts to amplify the truth. Analysis showed that in just a two-week period, climate denial and pseudoscience accounts averaged about 50 more tweets per account than their pro-environment counterparts. By following reputable sources (EDF, of course, but also sources like National Oceanic and

Atmospheric Administration and the Intergovernmental Panel on Climate Change) and sharing their content widely and often, EDF members like you can help silence the deniers.

## TAKE ACTION &gt;&gt;

Join EDF's Misinformation Brigade and become part of a community fighting for better transparency online. Sign up at [edfaction.org/MisinformationBrigade](https://edfaction.org/MisinformationBrigade)

# Fake News — Facts

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MINDEN PICTURES

## WE ARE EDF

## The new power generation

In 2020, a surge of young voters — up an estimated 8% to 11% over 2016 — played a critical role in electing Joe Biden president and helping turn the states of Georgia, Arizona and Michigan blue. For Khyati Rathore, the surge of youth power came as no surprise.

"For the first time, a presidential candidate ran



on such a strong pro-climate platform," Rathore says. "That really resonated with young people."

Rathore, a former EDF Climate Corps fellow, is now a manager at Defend Our Future, a nonpartisan EDF affiliate that develops young climate leaders nationwide. She was one of three youth leaders chosen to address the 2020 U.N. General Assembly on World Environment Day. There, "on behalf of 1.8 billion young people," she told the assembled diplomats to "not just speak about rebuilding better but to put actual finances behind it." Her recommendations on financing a clean and just economic recovery were incorporated into a widely circulated U.N. report on COVID-19 recovery.

Rathore is now launching an initiative to train young professionals willing to press corporations to act on climate. "The election was just the beginning of a long fight," says

Rathore. "With a new generation influencing politics and so many companies getting on board, I can't help but feel optimistic."

## Thank you, EDF members!

In 2020, you donated generously, helping us win case after case in court AND mobilized thousands of volunteers to get-out-the-vote.

To see how your support helped achieve more of EDF's big wins of 2020, go to [edf.org/impact](https://edf.org/impact).



**“Roll up your sleeves and let your passion flow.  
The country we carry in our hearts is waiting.”**

— Bruce Springsteen