



New energy New solutions

Annual Report 2019



**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.**

Hope and resilience

In September 2019, millions of young people around the globe — millennials and others who have the greatest stake in the future — led the largest climate action in history. Tired of waiting for elected officials, they bring new energy and passion to the cause.

At Environmental Defense Fund, we're contributing to this growing momentum. EDF's achievements of 2019, which you can read about in the following pages, help chart our course for 2020 and beyond. We've helped win climate action at the local, state, corporate and international levels, and we'll continue working to slash fossil fuel dependence and move toward a 100% clean economy. To protect human health, we'll keep fighting the Trump administration's assaults on vital environmental protections.

We're deploying powerful new technologies, such as networked air quality monitors and MethaneSAT, the satellite we announced last year that will launch in 2022 and revolutionize our ability to hold oil and gas companies accountable for their methane emissions worldwide. Such advances will enable EDF and allies to win victories that match the scale of the challenges ahead.

We'll also expand our efforts to help communities, oceans and ecosystems become more resilient to climate change. This year's collaboration between countries to predict climate impacts on fisheries, the agreement among three Western states to conserve water and the consensus to help protect Gulf Coast



residents from powerful storms all address ongoing challenges. We will ramp up our work in such areas to make an even bigger difference.

To accelerate our progress globally, we will keep building a diverse and capable staff and board from around the world. We value the support we get from all communities. Thank you for helping to make our work possible.

Carl Ferenbach
Chair, Board of Trustees

Fred Krupp
President



The power of perspectives



Since our founding by a small group of scientists in 1967, Environmental Defense Fund has been dedicated to building a world where people and nature prosper together.

Scientific rigor and economic insights shape our solutions; partnerships and coalitions help refine and turn them into action.

Working in 26 countries today, EDF's 750 scientists, economists, attorneys and other associates — and our partners and allies around the world — bring unique perspectives to the quest. The combined power of these diverse perspectives creates new energy and new solutions.

(continued on next page)



*EDF Executive Vice Presidents
Gwen Ruta and Amanda Leland*



THE POWER OF PERSPECTIVES

(continued from previous page)

Even in the best of times, it's hard work winning lasting progress in Washington, D.C., and few would call this the best of times. The Trump administration is trying to roll back national environmental safeguards, and EDF and its allies are fighting that constant assault in court (*see p. 6*).

Yet even now, we're making breakthrough progress in U.S. cities and states — and elsewhere around the globe — thanks to a broad range of partners with varied perspectives. For example, to reduce air pollution and fund mass transit in New York City, we helped pass landmark congestion pricing legislation (*see p. 19*). We did that by building a powerful coalition with more than 150 allies, including leaders in environmental justice, real estate and finance.

Cutting climate pollution and putting the world on a rapid path toward a 100% clean economy is our most urgent assignment. Achieving that goal, however, can't stop the serious climate impacts that are already baked in from past pollution. So, even as we work to drive down emissions, we're also working to boost climate resilience — helping communities and ecosystems thrive, despite the changes that are inevitable. You'll find examples throughout this report, along

with some of the stories of EDF partners who are helping get the work done.

Thanks to our supporters who understand the power of strong science, we're able to invest in studies that answer difficult, timely questions, such as how much methane pollution is being emitted from the global oil and gas supply chain and what are the best ways to reduce it. Answering such questions leads us to champion technological innovations that match the scale of the problems. Among the most ambitious examples is MethaneSAT, a powerful methane-detection satellite set to launch in 2022, which will usher in a new era of accountability for those who are putting methane pollution into the sky (*see p. 12*).

EDF builds durable solutions that stand the test of time and the ebb and flow of politics. In the United States, we strengthen bipartisan support for the environment. And the world over, we build equitable, cost-effective solutions by listening to the people most affected and aligning incentives so that businesses can efficiently cut more pollution per dollar. The combined perspectives of stakeholders, science, innovation and economics fuel the lasting progress for which EDF is known.

“Scientists don’t always understand how to get people to act on their data. That’s where EDF has proven to be superb.”

Dr. Daniel McCleese

*Chair, MethaneSAT Science Advisory Group;
Former Chief Scientist, Jet Propulsion Laboratory*

ADVOCACY GUIDED BY SCIENCE AND ECONOMICS

“Many decisions that cause environmental damage are rooted in economics: what to produce and how, and what to consume. Understanding why people make these choices helps us find solutions that can shift behavior,” says Dr. Suzi Kerr, EDF’s Chief Economist.

Adds Chief Scientist Dr. Steven Hamburg: “Solutions based on sound science are effective. That’s why rigorous peer-reviewed science underpins all our work.”



Steven Hamburg and Suzi Kerr

How EDF thinks about resilience

Resilience has multiple implications for our work, our policy approaches and our human interactions. You’ll see examples throughout this report.

CLIMATE RESILIENCE

Cutting climate pollution is job one, but serious impacts are coming no matter what. Climate resilience means helping people and nature thrive in the face of those impacts. There are no easy answers, but if we start now and focus on the right areas, we can dramatically improve outcomes for communities and ecosystems.

POLICY RESILIENCE

We’re in it for the long haul, so we forge bipartisan coalitions and durable policy solutions. Today, our lawyers and allies are fighting the Trump administration’s misguided attempts to dismantle environmental protections, and we’ve been winning far more cases than we lose (*see p. 6*).

ORGANIZATIONAL RESILIENCE

EDF is growing fast and working hard to meet environmental challenges. That means we have to work smart, with a lean and effective infrastructure, while fostering the diversity, equity and inclusion that strengthen our efforts. It also means we need to take good care of our people — the heart and soul of the organization — as they work with communities directly in harm’s way.

Holding the line on national environmental protections

EDF and its allies are fighting the Trump administration's assaults on the environment — and winning victories. As we near 2020, the bedrock laws remain intact and we continue a strong defense.

80%

Cases Trump's EPA has lost before the D.C. Circuit Court, compared with 19% for the previous administration.

DEFENDING THE RIGHT TO CLEANER CARS

The largest source of U.S. climate pollution is transportation, yet the administration is trying to roll back vehicle pollution standards. Some automakers have gone along, but Ford, Honda, BMW and Volkswagen rejected the plan and agreed with California on stronger standards. When the administration then moved to quash California's authority to set its own standards, EDF, its allies and 23 states — including Michigan, home of the U.S. auto industry — filed suit in federal court to block the attempt.

BATTLE OVER THE CLEAN POWER PLAN

In June 2019, the administration repealed the Clean Power Plan, an Obama-era rule to curb carbon emissions from electric power plants, and substituted its own, much weaker plan. EDF challenged the repeal in court, joined by a broad coalition of states, municipalities and electric companies, as well as other environmental and health organizations.

STOPPING DANGEROUS CHEMICALS

A 2016 overhaul of the nation's badly outdated chemical safety law was a major victory for public health, and EDF was instrumental in that bipartisan win. But the Trump administration has repeatedly undermined the landmark legislation. EDF had a major victory in 2019, winning a federal court decision that supports the public's right to know about toxic chemicals in homes, schools and workplaces. Meanwhile, in response to a petition from EDF and its allies, the Food and Drug Administration banned seven cancer-causing chemicals from food.



Heather McTeer Toney, national field director for the million-strong Moms Clean Air Force, testifies in defense of strong mercury rules.



New York City's climate march, where Swedish climate defender Greta Thunberg (right) was a powerful mobilizing presence.



Putting climate back on the agenda

It took a teenage girl from Sweden to galvanize world opinion on climate change. Days after millions of young people turned out for protest strikes worldwide, that teenager, Greta Thunberg, told the United Nations, “The eyes of all future generations are upon you.”

It was a turning point. Defend Our Future, EDF's youth mobilization program, pitched in, turning out college and youth leaders across the country. Adding energy and momentum to the groundswell of climate action was Moms Clean Air Force. Our million-strong affiliate mobilized mothers and families to demand action on the environment, testifying before Congress and meeting with elected officials at all levels.

The groundswell of action is working. Many voters now identify climate as a top electoral issue, and EDF Action, our political advocacy partner, has met with presidential candidates to talk about climate action.

After years of climate denial from too many in Congress, members of both parties are now acknowledging climate change and starting to identify possible solutions. With support from EDF Action, the 100% Clean Economy Act is expected to be introduced in the House soon. On the Senate side, for the first time, a Republican-controlled committee included climate resilience in a new transportation bill. In all, more than a dozen climate-focused bills were introduced in Congress in 2019, some of them bipartisan. Climate action is clearly back on the agenda in the nation's capital.

A STRONG VOICE FOR SCIENCE

The Trump administration justifies many of its rollbacks by questioning science, and EDF has mounted a vigorous defense. We helped mobilize scientists and public health experts to oppose an Environmental Protection Agency proposal that would require the agency to ignore peer-reviewed science when making decisions. And through the Freedom of Information Act, we exposed ties between a top White House science adviser and a fringe group that denies the consensus on climate science.

Climate & Energy



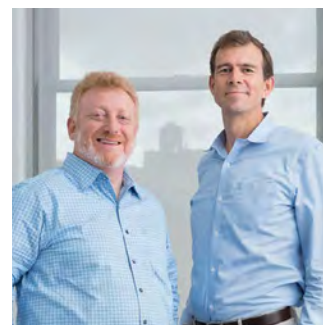
“EDF’s expertise has been instrumental in our effort to fight climate-polluting methane.”

New Mexico Gov. Michelle Lujan Grisham



Why we work on Climate & Energy

EDF’s aim is to stabilize the climate by dramatically reducing greenhouse gas emissions.



Mark Brownstein, Senior VP for Energy, and Nathaniel Keohane, Senior VP for Climate

100% clean is the economy of the future

The United States must lead the world toward a bold but achievable future: an economy with no net climate pollution.



Electric buses are cutting U.S. climate pollution from the largest source, transportation.



EDF is working to slash dependence on fossil fuels across the country. In Colorado, a major oil and gas producing state, we helped pass legislation in May 2019 requiring a 90% economywide cut in climate pollution by 2050, putting the state on the path to a 100% clean economy. EDF fought hard for this law, finding champions in the legislature and building a diverse coalition of health, community and business organizations. “States have to take the lead on climate,” says House Speaker KC Becker, a catalyst of the bill and one of its main sponsors. “EDF helped Colorado deliver on that promise.”

To avoid the worst impacts of climate change, we must reach net zero climate pollution by 2050 — that is, to add no more to the air than we remove. This means cutting pollution from energy, transportation, manufacturing and more. In addition, according to the National Academy of Sciences, we will need to remove some carbon from the atmosphere, using forests, smart farming practices and — if they can be made cost-effective — new technologies.

Locking in unnecessary fossil fuel infrastructure is an unwise investment. In New Jersey, EDF helped block

an unneeded natural gas pipeline in September 2019, setting a precedent for other states to do the same. In California, New York and Texas, we’re developing policies to deploy more electric trucks and buses, as part of our goal to achieve at least a 30% market share for such vehicles worldwide by 2030. And in New Mexico, we worked with Gov. Michelle Lujan Grisham, who has committed her state to a 45% reduction in climate pollution by 2030, starting with strong methane rules.

Meanwhile, DTE Energy, Duke Energy and Xcel Energy, three major utilities EDF works with on pollution reductions, committed to deliver net zero carbon emissions by 2050 — a yearly climate benefit equivalent to closing 45 coal-fired power plants.

But companies and states can’t tackle climate change alone. EDF is paving the way for strong federal climate legislation that engages every sector of the economy, protects vulnerable people and gives businesses incentives to find the most effective ways to get to 100% clean. “This flexible, bold approach is what we need to combat the climate crisis,” says EDF’s VP for U.S. Climate Derek Walker.



RESILIENCE PARTNER

**After the storm,
a beacon
of hope in
Puerto Rico**



When Hurricane Maria took down Puerto Rico’s electric grid in 2017, some residents endured nearly a year without power. On Culebra, an island off Puerto Rico’s northeast coast where Dulce del Rio-Pineda lives, people relied on noisy, dirty diesel generators for 18 months, but fuel was scarce.

Del Rio-Pineda is a co-founder of Mujeres de Islas, a women’s collective that’s rebuilding Culebra’s self-reliance. As climate change threatens Puerto Rico with increasingly damaging storms, the group is turning to solar power, starting with a community kitchen that doubles as a culinary school.

Such community-led efforts are key to EDF’s initiative to build a more resilient power system in Puerto Rico. We’re advocating legal reforms and developing innovative financing to support low-carbon microgrids — small electric networks that can run independently of the main grid — to give communities like Culebra access to clean, affordable and reliable power, even after storms.

“It’s not just throwing panels on houses,” says del Rio-Pineda. “EDF knows the policies and economics that can help communities become sustainable.”

Reduced emissions from:

- ENERGY**
- TRANSPORTATION**
- MANUFACTURING**
- BUILDINGS**
- AGRICULTURE**

Carbon removed from the atmosphere by:

- FORESTS AND FARMS**
- NEW TECHNOLOGIES**
(if cost-effective)



100% CLEAN BY 2050

We need to cut climate pollution across the economy, adding no more pollution to the atmosphere than we remove.

The fastest way to slow global warming? Cut methane.

“MethaneSAT is a major step forward and continues EDF’s pioneering work.”

Fatih Birol

Executive Director, International Energy Agency



New technologies that EDF has championed, ranging from drones to a new satellite, can spot methane emissions from oil and gas facilities.

Methane from human activities is driving more than a quarter of the warming our planet is experiencing now. The global oil and gas industry is responsible for roughly one-third of this. EDF’s goal is to cut the industry’s methane pollution 45% by 2025 and 75% by 2030.

Improved leak detection will help make it possible. This year, EDF and Stanford University tested new sensors mounted on drones, trucks and planes that can spot methane leaks with 90% accuracy. BP is now using the sensors and other technologies to monitor methane. “Inspections that used to take seven days will now be able to take 30 minutes,”

says BP’s Morag Watson. EDF will also deploy cutting-edge technologies to detect methane leaks in one of the world’s largest oil and gas production areas, the Permian Basin of Texas and New Mexico. Once found, most leaks are not hard to fix.

Our hunt for methane is global. In 2022, EDF’s affiliate MethaneSAT will launch a satellite to measure methane pollution from space. Ball Aerospace is building the satellite’s methane-measuring instrument. Emissions maps from the project will be free and public. “Ignorance can no longer be an excuse for inaction,” says Mark Brownstein, EDF’s Senior VP for Energy.



Climate Corps, an EDF summer fellowship program, has trained more than 1,000 graduate students to improve energy efficiency and set climate goals in more than 500 companies, cities and nonprofits.

“This is a sign that the good guys in corporate America will show up on Capitol Hill and fight for climate action.”

Sen. Sheldon Whitehouse (D-RI)
on the launch of the CEO Climate Dialogue

Companies lobby for a price on carbon



*VP for EDF+Business
Tom Murray: “This is the year that business engagement on climate policy became an unstoppable force.”*

For years, forward-looking companies have cut their carbon footprints. Now, some are also stepping up to lobby for federal action on climate.

At the forefront is the CEO Climate Dialogue, an alliance of leaders from 18 powerful companies, including DuPont, Exelon and Ford. Their goal: an economywide price on carbon. EDF and partners recruited companies and helped develop the group’s guiding principles.

Meanwhile, several major automakers, galvanized by EDF and others, spoke out in support of clean car rules that the Trump administration seeks to weaken. And we persuaded BP and Shell to fight the rollback of federal methane standards. As these battles rage on, such businesses will be important allies.

EDF also helps companies cut their own greenhouse gas emissions, including by advising Walmart’s suppliers on how to contribute to the retailer’s ambitious billion-ton reduction goal — more than the annual emissions of Germany. EDF accepts no money from its corporate partners.

Says Amanda Sourry, president of Unilever North America and CEO Climate Dialogue member: “The cost of inaction is greater than the cost of action on climate change.”

Spurring international cooperation on climate

Focusing on major emissions, EDF is building new momentum for climate action. International carbon markets can nearly double the reductions in pollution — at no added cost — compared with countries acting alone.*

China is building the largest carbon market

In 2020, China will roll out its national emissions trading system, initially covering 1,700 companies in the power sector and keeping the country on track to meet its commitment under the Paris Agreement. As the system expands, it will become the world's largest carbon market. EDF, with our 28-year history in China, has helped guide the system's design.

The initial phase represents more than one-third of China's carbon emissions. The plan is to scale up the emissions trading system gradually to include other sectors, such as cement and steel manufacturing, which would cover a total of 7,000 companies and help to continue China's leadership in climate action. Accountability is key. The transition is being overseen by a new generation of environmental enforcement officers, more than 55,000 of whom were trained in a program EDF established with leading universities.

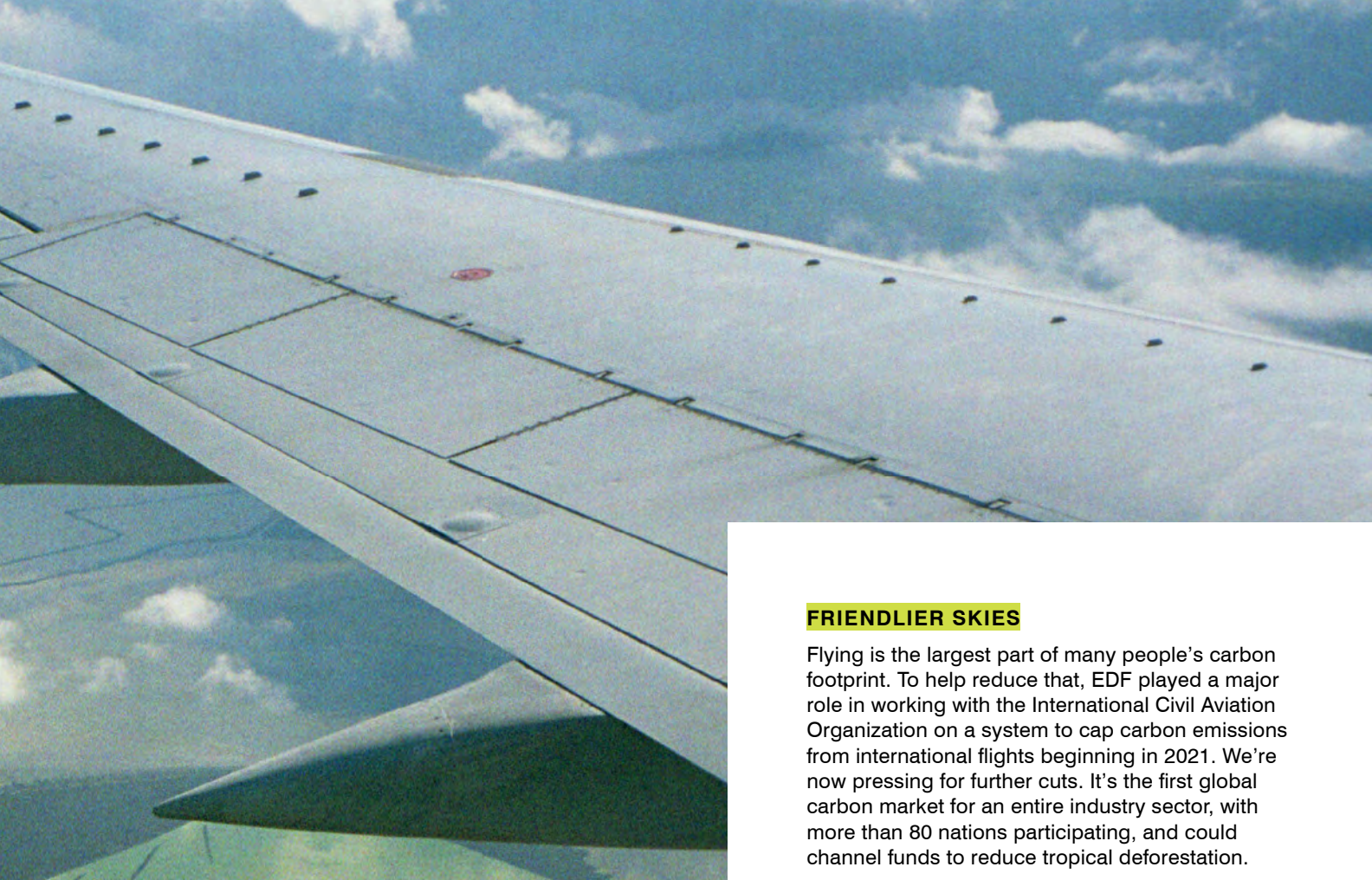
*EDF China VP Zhang Jianyu:
"EDF is helping China develop
infrastructure and policies
needed to shift the economy
toward a low-carbon future."*



Cleaning up ships

If cargo ships were a country, they'd be the sixth-largest emitter of greenhouse gases. The International Maritime Organization agreed in 2018 to cut global shipping emissions in half by 2050, and this year a coalition of shipping companies, organizations and countries pledged to operate zero-emissions ships along deep-sea routes by 2030. The new pledge was heavily influenced by EDF's *Sailing on Solar* report. Since 90% of global trade moves by ship, slashing emissions on the high seas will help put the world's freight on a low-carbon path.

*See edf.org/reductions



A lifeline for tropical forests

Raging fires in the Brazilian Amazon in 2019, largely the result of illegal clearing of land, brought one fact into stark relief: If forests are worth more than the land beneath them, they will be easier to protect.

The vast stores of carbon that tropical forests contain — and keep out of the atmosphere — are expected to increase in tangible value, thanks to policies EDF has helped advance in the global aviation sector, in California and in international finance. Carbon markets can give companies flexibility to offset emissions by investing in forest conservation.

“These new incentives will make forests more valuable alive than dead,” says Dr. Stephan Schwartzman, our senior director for tropical forest policy. Ending forest loss and pursuing restoration and reforestation efforts will benefit indigenous peoples, provide wildlife habitat and reduce overall global greenhouse gas emissions by at least 25%.

FRIENDLIER SKIES

Flying is the largest part of many people’s carbon footprint. To help reduce that, EDF played a major role in working with the International Civil Aviation Organization on a system to cap carbon emissions from international flights beginning in 2021. We’re now pressing for further cuts. It’s the first global carbon market for an entire industry sector, with more than 80 nations participating, and could channel funds to reduce tropical deforestation.

The anticipated price on carbon is already spurring action. United Airlines has teamed up with EDF to accelerate greenhouse gas reductions across its operations and help the company meet its goal of cutting emissions 50% by 2050. “As soon as one airline shows how to lead, it puts pressure on others to follow,” says EDF International Counsel Annie Petsonk, who helped develop the standards.

CALIFORNIA SETS A HIGH BAR

The California Air Resources Board approved a new tropical forest standard, a set of stringent criteria for reducing deforestation effectively. If California opens its carbon market to forest credits, tropical states would need to meet the standard to participate. The criteria, developed with help from EDF, require that deforestation be reduced over an entire state or province and that indigenous peoples be involved in the program’s design.

SPEEDING UP INVESTMENT

An independent nonprofit created by EDF, with initial funding from the government of Norway and others, will facilitate investment in tropical forest protection. The Emergent Forest Finance Accelerator will buy forest credits that meet the highest environmental standards while safeguarding the rights of indigenous peoples. It will sell those credits to interested buyers, ending uncertainties that have worried buyers in the past.

Health

“Today, more than ever, we must protect people, especially the most vulnerable, from environmental pollution. EDF is a critical partner in this effort.”

Georges C. Benjamin, M.D.

Executive Director, American Public Health Association



Why we work on Health

EDF's vision is a healthy world for all. By cutting air pollution and reducing people's exposure to toxic chemicals, we're working to secure a clean, safe environment for every generation.



Dr. Sarah Vogel, VP for Health

Better ways to zero in on air pollution

From London to Houston and beyond, EDF is deploying new technologies to pinpoint pollution hotspots.



*Baroness Bryony Worthington,
Executive Director, EDF Europe*

Millions of Londoners face daily threats from air pollution. The city has exceeded legal limits for safe air every year since 2010. In response, EDF Europe, London Mayor Sadiq Khan and partners launched an ambitious project that uses fixed and mobile sensors — combined with new data analytics — to measure and map air pollution across the British capital. Already, the data is helping Londoners further tackle pollution from city buses.

The United States faces similar challenges, often disproportionately affecting low-income and minority communities. Consider Houston: The area averages a major chemical fire or explosion every six weeks, and only a small fraction result in fines. EDF scientist Dr. Elena Craft and her team are pushing all levels of government to increase inspections, improve monitoring and strengthen penalties.

After fires at a chemical storage facility in 2019 sent a mile-high plume over the city, worried Houston health officials — facing a shortage of resources — asked Craft to help measure air quality. Her team found high levels of benzene, a known carcinogen. EDF pressed the state for legal action, and the Texas Attorney General filed suit against the facility responsible, an unprecedented legal action in the state.



Harris County, which includes Houston, then acted on EDF's recommendations and allocated nearly \$12 million for new personnel and equipment, including advanced air quality monitors. It was the region's most significant investment in environmental protection in 30 years.

"Improving our ability to measure air pollution improves our ability to manage it," says Dr. Loren Hopkins, chief environmental science officer for the Houston Health Department. A year ago, EDF helped install air quality sensors on vehicles in Houston's municipal fleet.

We're also working directly with community groups in Houston. In the predominantly African American neighborhood of Pleasantville, hemmed in by metal recyclers, salvage yards and an interstate, EDF is installing monitoring equipment so that residents can measure their air quality — arming them with the data they need to push for action.

In China, an EDF competition helped highlight new monitoring technologies. After we shared case studies with the government, it announced plans to include mobile monitoring in a national initiative to improve air quality substantially by 2020.



TECHNOLOGY PARTNER

Mapping the road to healthier air

One of Karin Tuxen-Bettman's earliest memories is of a world map on a wall in her childhood home. Studded with pushpins representing previous and future travels, the map inspired a lifelong passion. "Maps enable us to lay our own stories over a global canvas," she says. "They reflect our connection to the world."

Today, Tuxen-Bettman works at Google Earth Outreach, helping nonprofits use Google mapping tools. A key partner in EDF's mission to map pollution around the world, she led the project to install air quality sensors on Google Street View cars.

"We're making air quality data local and visible so decision-makers can zero in on sources of pollution and take action," says Tuxen-Bettman, who holds a Ph.D. in environmental science.

To date, EDF and Google have mapped natural gas leaks in 13 U.S. cities and analyzed block-by-block air pollution in London, Houston and Oakland, California. A project in Salt Lake City is just beginning. The results can drive pollution-reducing measures at the city, state and federal level.

"Karin is a change-maker," says Millie Chu Baird, associate VP in EDF's Office of the Chief Scientist. "The combination of Street View cars, low-cost sensors and advanced data analysis is fueling clean air action around the globe."



EDF AND NEW YORK TAKE ON TRAFFIC

New York officials announced a historic agreement to limit traffic in congested areas, which will lead to cleaner air and lower carbon emissions. The announcement caps a decade of work by EDF and makes New York the nation's first city with congestion pricing.

Taking the toxic out of personal care



Among the chemicals in widely available soaps, lotions and makeup are well-known carcinogens, endocrine disruptors and allergens. Yet the Food and Drug Administration hasn't updated its oversight of such products in more than 80 years.

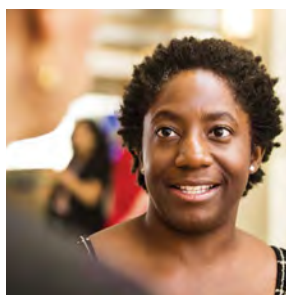
In the absence of robust regulatory standards, EDF has harnessed the purchasing power of the world's biggest retailers to drive manufacturers to replace toxic ingredients with safer alternatives. Thanks to our advocacy — including a hit list of the most prevalent hazardous chemicals — Walmart suppliers removed more than 23 million pounds of priority chemicals from over 100,000 products.

Amazon, CVS, Sephora, Target and Walgreens all followed suit and publicly committed to restricting toxic chemicals in the products on their shelves.

We're also helping manufacturers find safer alternatives. We've lent our scientific expertise to a competition to identify new preservatives for use in key products and to the creation of online databases where verified safer ingredients can be found.

“We’ve got a strong partnership with EDF, and together we’re getting important things done.”

Doug McMillon, *President and CEO, Walmart*



Boma Brown-West, EDF's senior manager for consumer health, leads our work engaging businesses in the push to drive toxic chemicals out of consumer products.

Lindsay McCormick, EDF program manager, tested for lead in water at child care centers.



ACTION ON BABY FOOD

A 2017 EDF report revealed the presence of lead in 20% of baby food samples collected over a decade by the FDA. This year, EDF co-founded the Baby Food Council with Cornell University, prominent baby food manufacturers and others to reduce levels of heavy metals in baby foods and determine their source.

Getting the lead out

EDF has been fighting to protect the public from lead since the 1980s, when we were instrumental in getting lead removed from gasoline. Since then, blood levels of lead for Americans have declined more than 90%. But many remain at risk, especially children in low-income communities. Scientists say that no amount of lead exposure is safe.

When news of the Flint, Michigan, water crisis broke in 2015, at issue were the pipes that connect water mains to individual homes. These service lines were once commonly made of lead, creating a health hazard, and it's a problem not limited to Flint. Across the United States, more than 6 million homes get their water from lead service lines.

The most effective and lasting solution is to replace all those pipes. To speed that process, EDF is helping communities assemble an inventory of lead service lines, tracking which communities and states are taking action and advancing scientific and legal research. Historically, public health officials and water utilities have not communicated well, so EDF is helping convene meetings between them.

We're also supporting cities and states through the Lead Service Line Replacement Collaborative — a partnership of 27 national organizations co-founded by EDF that works to accelerate replacement of lead pipes across the country. We've seen tremendous progress, with more than 180 communities and 16 states working to replace their lead service lines.

Oceans



“EDF has worked closely with Belize to rebuild its fisheries, and now we are keen to explore how those lessons can be shared with other small island and coastal states around the world.”

Janine Coye Felson

Ambassador; Deputy Chair of the Alliance of Small Island States



Why we work on Oceans

EDF's vision is to create more resilient oceans that stay healthy in the face of climate change and provide more fish in the water, more food on the plate and more prosperous fishing communities.



*Eric Schwaab,
Senior VP for Oceans*

Preparing fisheries for climate change

As waters warm, fish are on the move. This creates conflicts over fishing grounds and can increase overfishing, but EDF is helping countries find sustainable solutions.



The Humboldt Current, off the coast of Ecuador, Peru and Chile, is one of the world's most productive ocean ecosystems. Cold, nutrient-rich waters from the south intersect with warm tropical currents, supporting an extraordinary variety of marine mammals and close to 15% of the global fish catch.

Climate change and overfishing are upsetting the balance, driving some species toward the poles and allowing others, such as Humboldt squid, to proliferate. The changes ripple through the fishing sector, from industrial anchovy fleets to more than 180,000 small-scale artisanal fishermen who rely on a wide range of fish for their livelihoods.

Warming waters are disrupting fisheries from Iceland to Indonesia, sparking conflicts over fishing grounds and creating new pressures to fish at an unsustainable rate. "What's happening in the Humboldt Current region is emblematic," says Erica Cunningham, EDF's South America Oceans director.

As more marine species cross borders, countries need to work together on fisheries management.



In 2018, EDF brought together fishery leaders from Chile, Ecuador and Peru for a meeting in our Washington, D.C., office. In 2019, they agreed on a tri-national scientific vision to create the region's first comprehensive system for shared observation, prediction and warning of climate impacts.

"This is the new frontier," says Merrick Burden, resilient fisheries director at EDF. "The goal is to build a scientific foundation to help fisheries adapt to climate change in the Humboldt Current." Chilean fisherman Jose Chaura is hopeful. "We face a lot of uncertainty," he says, "but having flexibility to catch different species as circumstances change will allow us to fish sustainably and maintain our livelihoods."

Belize is one country where EDF-backed reforms, coupling managed access with expanded marine reserves, are already showing results. Populations of fish have started to rebound and illegal fishing has dropped 60%. Based on this success, Belize is expected to pass a new national fisheries law soon that could be a model for other small-scale fisheries as they face climate change.



RESILIENCE PARTNER

The scientist as diplomat



Mauricio Galvez, head of research at IFOP, Chile's fisheries development institute, once helped create the largest no-take marine protected area in the Americas, the Nazca-Desventuradas Marine Park. Lately, he has found himself in international deliberations, as more fish cross in and out of Chile's national waters because of climate change.

Working with EDF, Galvez and his counterparts in the Humboldt Current region are sharing baseline scientific data on marine resources, while developing an early warning system to predict climate impacts on fisheries. High-resolution modeling provided by NOAA could help these nations plan for the future.

"Our countries have a history of working together on anchovy," says Galvez. "But with climate change, we now need to think at ecosystems scale."

"EDF has been an honest broker in the process," adds Renato Guevara, the scientific director for IMARPE, Peru's national ocean research institute. "They're helping us navigate the science in a rapidly changing environment." The kind of collaboration that EDF is fostering in the region will be needed around the globe.

1 billion

people rely on fish as an essential source of nutrition.

\$270 billion

in global GDP comes from fishing.

Japan tackles fishery reform



Japan, the world's seventh-largest fishing nation, has seen its catch plummet by two-thirds in the past three decades, in large part due to overfishing. The country has a huge stake in improving seafood sustainability: Japanese fish consumption per capita is nearly triple the global average.

To help fisheries recover, Japan's lawmakers have enacted the most significant reform of their fisheries laws in 70 years. EDF provided broad scientific and policy guidance to government officials, scientists and regulators.

The new law incorporates EDF recommendations including greater reliance on science-based

catch limits and a requirement to develop recovery plans for overfished stocks. "These changes could signal a shift in how other countries in the Asia-Pacific region manage their fisheries," says EDF Japan director Kazuhiko Otsuka.

New research by EDF scientists and allies, published in *Marine Policy*, suggests that the reforms could increase fish populations in Japan's waters and generate an additional \$5.5 billion in annual profits for fishermen by 2065. Says Otsuka, "Our research shows that fishermen and fish can both do better if we offer fishermen incentives to conserve and get the management right."

30%

Potential increase in fish in Japan's waters by 2065.



Bringing fisheries into the digital age

“I envision a fully integrated information system, from the vessel clear to the market.”

Brad Pettinger

Oregon fisherman and former head of the Oregon Trawl Commission

A new wave of environmental innovation is bringing fishing into the information age. Through our Smart Boat Initiative, EDF and partners have launched a range of high-tech pilot projects — from the United States to Mexico and Indonesia — to test cameras, machine learning and low-cost sensors to monitor fishing more accurately and improve sustainability.

“Just as smartphones transformed global communications, smart boats can revolutionize fishing worldwide, by giving us a better understanding of the state of ocean ecosystems and our ability to rebuild struggling fisheries,” says Shems Jud, who leads our work in the Pacific region.

On the West Coast, where fishery reforms championed by EDF helped bring Pacific groundfish — including iconic sole and rockfish species — back from collapse, our pilot with trawl fishermen combines electronic monitoring with artificial intelligence to identify species and estimate weight. Our vision: networked boats that share data at sea, enabling fisheries management and business decisions in real time, reducing waste and improving oversight.

We’re also working with fishermen in Monterey Bay, California, where specialized gear could help them avoid catching depleted species while targeting abundant fish stocks, potentially winning them access to previously closed fishing grounds.



Dr. Rod Fujita (underwater), EDF’s director of research and development for oceans, tests new sonar in the Philippines.

Ecosystems

“EDF offers creative solutions across the board in the environmental space and is needed here because of the scale of the problem.”

Wade Crowfoot

California Secretary for Natural Resources





Why we work on Ecosystems

EDF works for a world where natural ecosystems thrive and people flourish, despite changes in the global climate.



*David Festa,
Senior VP for Ecosystems*

A breakthrough on Western water

Adapting to a drier future, Western states opt for water conservation, with help from EDF and partners.



The three states in the Lower Basin of the Colorado River — Arizona, California and Nevada — agreed to share needed reductions in water use.

Few environmental problems are thornier than water in the West. For years, the seven states that use Colorado River water have collectively taken more than the river can provide. As a result, when a punishing 19-year drought hit, Lake Mead — the nation's largest reservoir — fell to its lowest level ever.

The federal Bureau of Reclamation was threatening to impose deep cuts on water use. But squabbling Arizona water users were holding up an agreement. Another Western water war seemed inevitable.

EDF stepped in and helped broker a landmark deal in which Arizona will reduce consumption in dry years. Cities such as Tucson and Phoenix agreed to share water, alleviating the pressure on farmers, and the extra water will also nourish wildlife habitat.



We brought together stakeholders who are more accustomed to litigation than compromise: farmers, cities, tribes, businesses and conservationists. Under the arrangement, Arizona, California and Nevada agreed to share cuts in water use. Congress approved the historic pact in April 2019.

The agreement wouldn't have happened without the Gila River Indian Community. The tribe, a senior water rights holder, agreed to forgo use of a major portion of its Colorado River water — more than the city of Phoenix uses annually — in exchange for compensation.

EDF helped develop the Arizona compromise and will monitor environmental compliance. Key factors in the success were collaboration on a regional



The drop in water level to a record low in Lake Mead, the largest reservoir in the U.S., has left a prominent bathtub ring.



RESILIENCE PARTNER

A powerful ally on water conservation

More than 2,000 years ago, the ancestors of Stephen Roe Lewis settled along the fertile banks of Arizona's Gila River. In a remarkable feat of engineering, they carved 500 miles of canals out of the Sonoran Desert and cultivated a broad variety of crops, learning to survive the dry years.

In 2019, three Southwestern states afflicted by drought turned for help to Lewis and the 12,000-member Gila River Indian Community he heads. The tribe's decision to relinquish some of its water rights for a two-year period helped cement a historic conservation agreement among the three states.

From the start, Lewis steered negotiations toward stewardship. "Drought is a consequence of climate change. We must face the fact that our future will be drier," he says. "We do not take for granted any drop of water. We've lived through it being taken from us." EDF worked closely with the community to craft the deal. We're now talking with tribal leaders about restoring other river flows.

"In its willingness to conserve water, the Gila River tribe is an example to all," says Kevin Moran, who heads EDF's Colorado River program. "We hope people across the Southwest will start talking about water the way this tribe has for millennia."

scale, water trading and locally crafted solutions. It's a durable way of solving water disputes when rivers are overallocated. "EDF was vital in bringing all the important players together in one room," says Cynthia Campbell, Phoenix's water resources adviser.

Similar creative solutions are helping conserve underground sources of water. In California's rural areas, including the San Joaquin Valley, the nation's fruit and nut capital, a crippling drought and excess pumping of groundwater dried up more than 2,000 wells. EDF is providing guidance to hard-hit counties as they develop plans to comply with the state's Sustainable Groundwater Management Act. We're also working with the Rosedale-Rio Bravo Water Storage District to create the first online, open-source groundwater trading platform in the Central Valley.

Conservation farming builds a resilient future



On a farm in Romney, Indiana, a monarch butterfly alights on a flower, taking a short pause on its epic 3,000-mile migration. Restoring monarch habitat is one of many conservation measures Brent Bible has taken on his 5,000-acre corn and soybean farm, where native grasses and wildlife-rich wetlands flourish amid fields of cover crops and unplowed land.

As the climate changes and global food demand grows, farmers like Bible increasingly share EDF's vision of farming in balance with the natural world — harnessing technology to support diverse species, improve soil health, reduce nitrogen pollution from fertilizer and improve the land's ability to withstand floods and droughts.

In pursuit of these goals, EDF has forged new partnerships with Tyson Foods, the biggest U.S. meat producer, and the National Corn Growers Association, which represents more than 300,000 farmers. So far, these and other partnerships have delivered improved fertilizer management and soil health on more than 5 million acres.

"EDF was the first environmental group to reach out to farmers and listen to our perspectives," says Nebraska farmer Brandon Hunnicutt.

HOPE ARRIVES ON FRAGILE WINGS

Monarch populations have plummeted 90% in the past 20 years, due to loss of habitat. EDF, the National Corn Growers Association, Smithfield Foods and other partners are working to restore 1.5 million acres of habitat by 2028.



"Conservation and productivity really are interconnected," says EDF partner Brent Bible. "Protecting ecosystems keeps soils healthy. That's sustainable farming."



New hope in a land of loss

97%

**of Louisianans say elected
officials should prioritize
the state's land loss crisis.**

As coastal areas around the world face rising seas and stronger storms fueled by global warming, Louisiana is already confronting the consequences. The state's exquisite marshes and wetlands — already weakened by the extensive construction of levees for flood control and canals for energy exploration — are disappearing at the rate of a football field every 100 minutes. Without action, 10,000 homes could be lost.

EDF is working with a coalition of nonprofits on a \$50 billion state plan to rebuild coastal wetlands and help communities prepare for the future. So far, the plan has seen the construction of 60 miles of barrier islands and nearly 300 miles of levee improvements, helping to protect more than 40,000 acres of land. Sediment diversions, which help sustain and build land over time, are currently being designed.

At the same time, we've worked with local partners to give a voice to people whose homes and jobs are under threat. Over the course of 71 community meetings, nearly 3,000 Louisiana residents drew up proposals to confront the risks they face. The proposals, ranging from floodproofing to an expansion of mental health services, were adopted in full by the state. Announcing the investment of more than \$41 million, Gov. John Bel Edwards said, "This project offers a model for climate-vulnerable communities everywhere."

Applying these lessons, EDF is helping other coastal states from New York to Texas prepare for the future.



Financial overview

EDF continued to grow during fiscal 2019, as total operating expenses reached a record \$201 million, a 5% increase over fiscal 2018.

Support and revenue of \$203 million in fiscal 2019 showed significant fundraising strength. Contributions and membership increased 8%, providing more than two-thirds of total support and revenue.

Year-to-year swings in total support and revenue, and changes in net assets, reflect the timing of large gifts designated for use over multiple years. (Nonprofit accounting principles require us to record income in the year funds are raised, not in the years designated for use.)

Stewardship of multiyear gifts is an organizational priority that enables longer-term program development, equipping EDF to address large, ongoing challenges such as climate change. To ensure financial stability and provide increased funding for high-impact programs, we monitor fundraising and adjust spending to maintain a balanced annual budget.

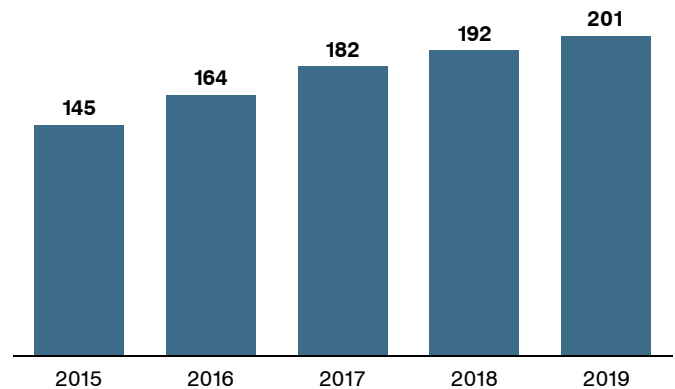
Fiscal 2019 is EDF's first year of reporting under the new Accounting Standards Update 2016-14, which governs the allocation of certain expenses to program activities and supporting services. The expenses that are allocated include depreciation, interest, office and occupancy, which are allocated on a square-footage basis, as well as salaries and benefits, which are allocated on the basis of estimates of time and effort. As with most significant accounting rule changes, we were also required to restate the prior year's activities using this new methodology.

Program activities accounted for 82% of total operating expenses in fiscal 2019. The generous resources provided by our supporters enable us to deliver strong results for the environment and human health. We thank you and welcome the critical role you play as our partners in this mission.

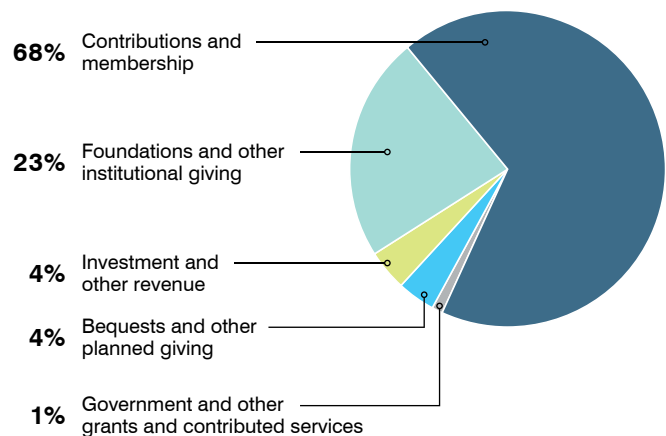
William P. O'Brien
Chief Financial Officer

TOTAL OPERATING EXPENSES

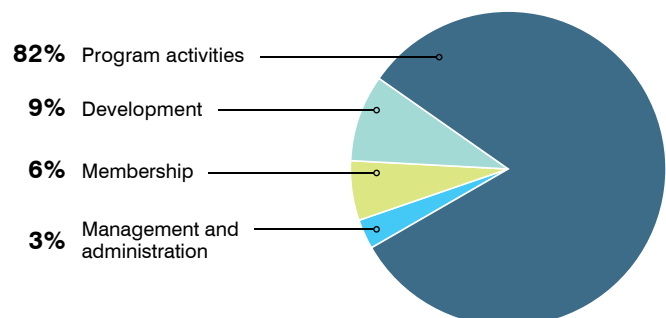
In millions of dollars



SOURCES OF SUPPORT AND REVENUE



EXPENSES



Statement of activities

Year ended September 30	WITHOUT DONOR RESTRICTIONS	WITH DONOR RESTRICTIONS	TOTAL 2019	TOTAL 2018
OPERATING SUPPORT AND REVENUE				
Support:				
Contributions and membership	\$ 64,134,824	\$ 74,696,325	\$ 138,831,149	\$ 128,221,244
Foundations and other institutional giving	1,324,394	44,876,297	46,200,691	81,527,087
Bequests and other planned giving	7,165,139	448,309	7,613,448	4,965,000
Government and other grants and contributed services	48,427	2,377,628	2,426,055	1,244,266
Total support	72,672,784	122,398,559	195,071,343	215,957,597
Revenue:				
Investment income allocated for operations	6,461,736	633,156	7,094,892	5,892,719
Fees, royalties and other income	588,957	–	588,957	1,574,000
Total revenue	7,050,693	633,156	7,683,849	7,466,719
Net assets released from restrictions	125,507,993	(125,507,993)	–	–
Total support and revenue	205,231,470	(2,476,278)	202,755,192	223,424,316
EXPENSES				
Program activities:				
Climate and energy	88,757,969	–	88,757,969	87,630,589
Oceans	20,447,858	–	20,447,858	23,647,408
Ecosystems	21,523,536	–	21,523,536	21,710,760
Health	6,350,235	–	6,350,235	4,554,336
Education	27,363,455	–	27,363,455	22,973,704
Total program activities	164,443,053	–	164,443,053	160,516,797
Supporting services:				
Management and administration	6,571,718	–	6,571,718	4,928,552
Fundraising:				
Membership	11,457,409	–	11,457,409	10,494,364
Development	18,871,676	–	18,871,676	15,960,252
Total supporting services	36,900,803	–	36,900,803	31,383,168
Total operating expenses	201,343,856	–	201,343,856	191,899,965
Change in net assets from operations	3,887,614	(2,476,278)	1,411,336	31,524,351
Other expenses, net of contributions and other income	(663,074)	(58,987)	(722,061)	(406,426)
Investment results, net of allocation to operations	(4,492,544)	(221,226)	(4,713,770)	(4,276,302)
Change in net assets from discontinued operations				(9,075)
Change in net assets	(1,268,004)	(2,756,491)	(4,024,495)	26,832,548
Net assets, beginning of year	60,294,156	158,498,328	218,792,484	191,959,937
Net assets, end of year	\$ 59,026,152	\$ 155,741,837	214,767,989	\$ 218,792,485

This statement of activities represents the consolidated activities of Environmental Defense Fund, Incorporated, EDF Action, EDF Europe, MethaneSAT LLC and Satmgmt LLC. Copies of the complete audited financial statements are available upon request or at edf.org/audit.

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SUPPORTER PROFILE

New energy for Puerto Rico

Fundación Colibrí



Executive Director María "Baby" Jaunarena and President Monica de la Torre

"EDF was so respectful of the community and understanding of their needs."

Monica de la Torre

For months after Hurricane Maria devastated Puerto Rico, Monica de la Torre and her husband Herb Allen, an EDF trustee, shuttled between New York City and San Juan, carrying critical supplies to stranded residents. "It was so overwhelming — the needs were so intense," says de la Torre, who grew up in Puerto Rico.

After their final trip in November 2017, she and her family wanted to invest in a project that would have a long-term positive impact in Puerto Rico. Through their foundation, they decided to focus on energy resilience, since much of the island was in the dark for months after the storm. "The blackout affected 100% of the population and caused thousands of deaths," de la Torre says.

They approached EDF to launch a project that would focus on building microgrids, to ensure that people have access to power in the wake of future storms. Says de la Torre: "People are looking for tangible solutions and appreciate having an organization like EDF play a leadership role."

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SUPPORTER PROFILE

Innovation and space

Rachel Crane



“Climate change is a time bomb. That’s why my family is giving.”

Rachel Crane was at a TED Talk when she first learned about MethaneSAT, the satellite mission being developed by EDF and its partners to detect methane pollution from oil and gas facilities around the world. “I knew right then,” she says, “that I wanted to get involved in a significant way.”

Crane is a CNN innovation and space reporter. She is also a member of the Marks family, of the Howard and Nancy Marks Charitable Fund. She wanted the family to support the satellite project.

So, she went to work, using her expertise in technology, science and space to evaluate MethaneSAT. She then presented the project to the family.

“They trust my judgment — and they knew this would be important to the climate fight.” The family decided to invest.

“We all need something to inspire us,” she says. “Once MethaneSAT is up and running, it could have an immediate impact on climate.”

SUPPORTER PROFILE

Investing in actionable data

Children’s Investment Fund Foundation



“We really value EDF’s world-leading technical expertise.”

Sonia Medina

Around the world, more than 90% of people live in places where the air is considered unhealthy. “It is a global problem that affects every country,” says Sonia Medina, Executive Director of the Children’s Investment Fund Foundation, known as CIFF.

“Even in one of the richest cities in the world,” she says, “2 million Londoners live in areas with illegally high levels of air pollution, including 400,000 children.” That is why CIFF is supporting EDF’s efforts to deploy cutting-edge sensors and technology to measure and map air pollution.

EDF is using the data to catalyze solutions and policies that cut pollution. This year, EDF Europe and partners launched Breathe London, which combines mobile and stationary sensors into one of the world’s most comprehensive air monitoring networks.

“By gathering actionable data,” Medina says, “we can provide decision-makers with the information needed to evaluate policies and reduce pollution.”

SUPPORTER PROFILE

Champion for the oceans

Wendy Benchley



“EDF involved fishermen to have a say in the health of the ocean.”

Wendy Benchley is a globally renowned champion for ocean conservation and a longtime EDF adviser, partner and former trustee. “I admire their ability to be strategic and to innovate,” she says. “EDF involved fishermen to have a say in the health of the ocean. That changed the game.”

Benchley supported EDF with her late husband Peter Benchley, author of *Jaws*. “Peter was horrified that some people took from *Jaws* that sharks should be annihilated. We worked with EDF to help change that,” she says.

In the big picture, says Benchley, “EDF saw we would have to get businesses involved if we were going to make environmental progress. That was new — and very bold — in the 1980s.”

“EDF continues to innovate,” she says, “and to take big, sometimes risky decisions. Like setting out to tackle overfishing in countries all around the world — it’s the kind of global thinking we need now.”

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