



Leading Transformational Change

Strategic Plan 2010–2014

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

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If Earth does not recover from the environmental ills that threaten water, land and air, it won't be that we lacked the remedies to save our home. It will be that we didn't use them in time.

EXECUTIVE SUMMARY

LEADING TRANSFORMATIONAL CHANGE

Environmental Defense Fund's mission is to preserve the natural systems on which all life depends, systems now being destabilized by human activities. What sets EDF apart is the combination of what we protect and how we protect it.

Our longtime concentration on four key areas—climate, oceans, ecosystems and health—gives us the breadth of experience to confront the most serious environmental challenges facing the planet. To address these problems before their consequences become irreversible, we have set very ambitious goals:

Climate: Avoid catastrophic consequences of climate change by reducing greenhouse gas emissions and applying effective adaptation strategies

Oceans: Protect ocean ecosystems by creating sustainable and healthy fisheries

Ecosystems: Preserve critical land and freshwater ecosystems for the benefit of people and wildlife

Health: Safeguard human health by reducing or eliminating environmental threats, including toxic chemicals and pollution

Such large goals can be reached only by working with others to lead transformational change, the kind of lasting change that influences entire sectors of the economy. EDF's greatest achievements on this scale have come from designing economic incentives to protect the environment, and we will emphasize this strongly. Markets unleash people's creativity, guide entrepreneurs and catalyze innovation.

Coupled with EDF's economic savvy are scientific rigor, legal and policy expertise and a uniquely effective way of working with business. We use a broad range of approaches to get results, including persuasion, lobbying, public education and litigation. Our staff is our strength, and we will continue to build that human capital and foster an atmosphere of innovative thinking.

While the current economic climate adds to the challenge of funding our work, it also makes people and institutions more open to transformational change. Now is the moment that major sectors such as the world energy economy are ripe for reinvention.

Never has there been a greater need to align economic incentives with the protection of the environment. Together with our supporters and allies, we will seize this opportunity to protect and restore the vibrant balance of life on Earth.

Our mission



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

What distinguishes Environmental Defense Fund is the combination of what we protect and how we protect it.

We work to solve the most critical environmental problems facing the planet. This has drawn us to areas that span the biosphere: climate, oceans, ecosystems and health. Since these are intertwined, our solutions take a multidisciplinary approach. We work in concert with other organizations—as well as with business, government and communities—and avoid duplicating work already being done effectively by others.

Over the years EDF has brought a series of innovations to the work of protecting the environment. Our unique approach today is the sum total of those innovations.

In 1967 we were the first modern environmental group to be founded by scientists, and we continue to follow the science, even when it leads in unfamiliar directions. Rigorous science guides us in identifying the most serious problems and evaluating the most effective remedies. As we look to the future, our science-based inquiry will be even more important in foreseeing emerging threats and new solutions.

From the outset we were the first environmental group to pair scientists and attorneys. In the 1970s we were the first to hire full-time Ph.D. economists, which has led to our international prominence in designing market-based solutions. In the 1990s we pioneered both corporate partnerships and some of the first interactive uses of online communications.

EDF’s unique approach, a blend of all these innovations, will not change, but we will be more deliberate in our choice of projects. In the past we have pursued not only large-scale efforts but also smaller demonstration projects that we have not had the capacity to bring to scale. Since our aim is to produce not merely incremental improvement but

What if scientists, economists and lawyers teamed up to solve environmental problems? It’s happening every day at EDF.

truly transformational change, in the future we will embark only on efforts that we are prepared to implement fully, whether on our own or with capable partners, and we will hold ourselves accountable for transformational results.

The power of market incentives

EDF's biggest, most transformational environmental results have been achieved when we've helped design, create, reconfigure and reform markets. The recent turmoil in the financial system has highlighted the importance of getting the rules right and ensuring that markets are well designed and risks are appropriately regulated.

Markets can be a powerful force for good or ill. Since EDF's work began four decades ago, global market expansion has brought greater prosperity to millions and enabled huge advances in technology, some benefiting the environment. But markets also fuel environmental degradation when they fail to account for the true costs of pollution and resource use. As a result, the world's climate and fisheries are far worse off today than when EDF was founded.

Markets can act like a magnet to pull brainpower and capital toward green solutions.

Markets, acting like a magnet, create a pull on people and businesses. So when a market is crafted to protect the environment, it attracts brainpower and capital toward green solutions, aligning private incentives with the public good. That's what happened with the U.S. cap-and-trade system to curb acid rain that EDF helped create in 1990. Many businesses profited by reducing pollution even more than the law required, and *The Economist* hailed it as "the greatest green success story of the past decade." Similarly, a carbon market will combat global warming by pulling inventors and investors to focus on low-carbon energy solutions.

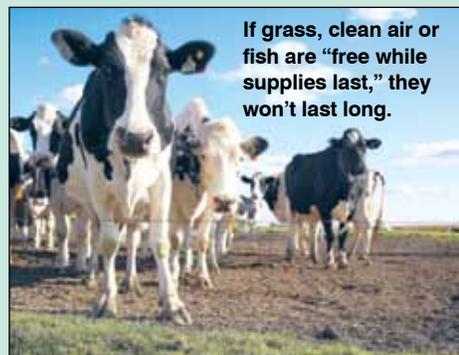
Designing the economic architecture and getting the rules right is what EDF does best. We know how to dive into a problem, engage all the participants and figure out the best ways to make environmental protection pay. We also know the building blocks that enable markets to work, including good data, strong enforcement and the backstop of litigation.

The tragedy of the free-for-all

Some of the most serious environmental problems result from a market flaw called the tragedy of the commons. Picture the Boston Common in early colonial days when everyone in town used it as a pasture. Overgrazing soon ruined it.

Today, overuse of the atmosphere as a dumping ground for air pollution has endangered the climate, while overfishing threatens the oceans and excessive irrigation depletes the water in rivers and streams.

Economic incentives offer a solution. If government sets a cap on air pollution, fishing or irrigation, for example, it gives an economic value to protecting the environment. Environmental Defense Fund has been designing market-based solutions since the 1970s, when we became the first major environmental group to hire full-time Ph.D. economists.



Our goals



If EDF tried to work on every environmental problem, we would solve none. Since our first strategic plan in 1997, we have seen the value of concentrating our work where it is most urgently needed, within the four goals of protecting climate, oceans, ecosystems and health.

Even within these four broad goals, we must be very selective in the work we set out to do. Particularly in the current economy, where we must do more with less, we have approached our strategic planning efforts with the aim of tightening our focus. To do this, we have applied three screens to assess each part of our current work and potential future work:

At least 80% of our work should fall where our three criteria overlap.

1. Is it a **scientifically important environmental challenge**, not being sufficiently addressed by others, with the potential for transformational improvement?
2. Is it the **kind of work EDF is best at**, a situation where designing, reconfiguring or harnessing markets is part of the most effective response?
3. Do we already have, or can we attract, **the resources needed** to solve the problem—in terms of talent, influence and funding?

We want at least 80% of our work to fall in the sweet spot where these three criteria overlap. In some instances we've adjusted our approach to move work into the sweet spot. For example, much of our future work on water-use allocation will center on water markets. Markets aren't appropriate for every problem, so some of our work, such as reducing human exposure to toxic chemicals, will focus on regulatory solutions. But the vast majority of our efforts will use economic incentives to achieve transformational change.

During the strategic planning process, we used the same three criteria to scan a wide range of emerging issues where more of EDF's attention might be needed in the near future. This led us to identify three areas for near-term expansion—energy, nitrogen pollution and geoengineering—which are explored in the section entitled “New directions for our work” (*page 20*).



A growing international reach

As some of our efforts become increasingly international in scope, we will build our capacity to work effectively around the globe, while remaining a U.S.-based organization. Meeting our goals for climate and oceans requires working internationally, and we see a growing need for our environmental market proficiency outside the United States. EDF can be most effective by working in partnership with people and institutions having local expertise in each country where we engage.

We will be judicious in choosing where we work internationally. We will focus on countries facing environmental problems of global significance where our expertise is most needed and on global power centers, such as China, whose policies are central to meeting our goals.

Environmental justice

We will make environmental justice a priority. EDF has access to the powerful and to the opinion leaders. The overwhelming majority of Americans—and people in the developing world—do not. We have a special responsibility to help ensure that their voices are heard in policy deliberations and that environmental benefits flow to those who are least empowered to advocate and most harmed by environmental degradation. We will do this in partnership with the organizations that know these communities best.

Leveraging corporate partnerships

Since 1990, when EDF formed a waste-reduction task force with McDonald's, we have joined forces with market leaders to help the environment while improving the bottom line. In each partnership, our aim is not to improve just one company but to spur change across an entire industry sector and yield substantial environmental benefits.

Since we do not accept funds from our corporate partners, we are free to share our recommendations broadly with others. Through our highly visible partnerships with corporations as diverse as DuPont, FedEx, KKR and Walmart, EDF has become the environmental partner of choice, enhancing our credibility in the corporate world and our ability to deliver environmental results.

Across all our goals, we will leverage our corporate partnerships to create groundbreaking environmental innovations, and we will promote rapid and widespread adoption of such innovations by other companies as well.

EDF was the #1 environmental group in *Financial Times'* ranking of 850 business partnerships with nonprofits.



Climate

OUR GOAL ▶ Avoid catastrophic consequences of climate change by reducing greenhouse gas emissions and applying effective adaptation strategies

THE CHALLENGE

Global warming is the most profound environmental challenge of our time—and it is accelerating at an alarming rate. There are new warnings that the climate is approaching the stage where extreme disruptions could occur. For example, the Greenland Ice Sheet is melting at a rate faster than predicted and could begin to disintegrate and raise sea levels significantly.

The planet is already nearly halfway to the 2° C danger point of warming that most scientists see as the limit beyond which serious adverse changes become irreversible. There is no time to lose to start reducing emissions of carbon dioxide and other greenhouse gases that cause global warming.

Because most greenhouse gases remain in the atmosphere for many decades, continuing to trap heat, significant additional warming is unavoidable as a result of past pollution, no matter how fast we cut emissions now. The people and ecosystems most vulnerable to the effects of this warming will need ways to adapt.

EDF'S SOLUTION

Achieving the greenhouse gas emissions reductions necessary to avoid catastrophic consequences requires a global strategy. As a critical first step, the United States must cap its emissions. We can use energy more efficiently, promote low-carbon energy sources and expand the use of methods that draw pollution out of the air. Demonstrating that America can make the transition to a prosperous low-carbon economy requires sustained political will, incentives that reward early reductions and price signals that reward efficiency.

The developed world has emitted most of the greenhouse gases added to the atmosphere over the past century and thus has a moral obligation to act, but it is only part of the solution. An international agreement can be achieved only if we create the will and the framework to attract the participation of major emitters in the developing world as well. The United States must play a leadership role in developing a low-carbon implementation plan that will accurately measure, monitor and verify future reductions.

At the same time that we are racing to reduce greenhouse gas emissions, we also must plan for adaptation to the warming that will occur because of past emissions. To meet EDF's oceans, ecosystems and health goals, we must nurture adaptation thinking in our own work and advocate its inclusion in all state, national and international policy discussions.

Implement a U.S. cap-and-trade system



No strategy to address global climate change can succeed without substantial reductions in U.S. greenhouse gas emissions. EDF is committed to developing strong national legislation that will achieve the reductions that the science indicates is necessary. Even after a law is passed to establish a declining cap on emissions, EDF staff must remain heavily involved to see that the law is implemented effectively. Key regulations will need to be written to define and implement the cap-and-trade program, including provisions for

“What we do in the next two or three years will determine our future.”

Rajendra Pachauri
Chair of UN Climate Panel

capturing and sequestering carbon dioxide, and we will remain fully engaged to guarantee the program's integrity. Our new energy practice (*see page 21*) will play a central role in climate regulation and implementation, focusing on issues such as the electric grid, large-scale renewable energy and carbon capture and storage.

RAISING THE BAR: Our domestic climate objectives by 2014

- Federal cap-and-trade legislation is enacted, including provisions for offsets and international credits, and the implementing regulations ensure efficient trading, transparency and strong regulatory oversight
- Annual investments in cleaner energy and energy efficiency in the electric, building and transportation sectors have increased by more than \$20 billion
- 12 states have adopted building and utility regulations that speed deployment of energy efficiency
- U.S. carbon market trades reach \$100 billion per year, including significant rainforest credits

Secure an international agreement



Success on the global stage will require broadening the coverage of today's carbon market to include the United States and other major emitters. By coordinating our domestic and international work, EDF can help ensure that the United States plays a leadership role in an effective international system of action. A new global agreement must correct the flaws in the Kyoto climate framework, including its failure to include mechanisms to welcome emerging economies into a cap-and-trade system. Furthermore, particularly given the global economic crisis, pathways must be found to finance technology transfer by leveraging the carbon market and to fund climate change adaptation in poor, highly vulnerable nations. EDF is actively engaged in developing the following strategies that will allow emerging economies to join the global carbon market and start reducing emissions as early as possible.

Reducing emissions from deforestation

Deforestation of tropical forests now accounts for almost as much global warming pollution each year as the entire U.S. economy. But previous climate treaties did nothing about deforestation. Now our allies in Brazil have proposed a plan that would award credits in the global carbon market to nations that reduce deforestation, and EDF staff are helping to advance that proposal.

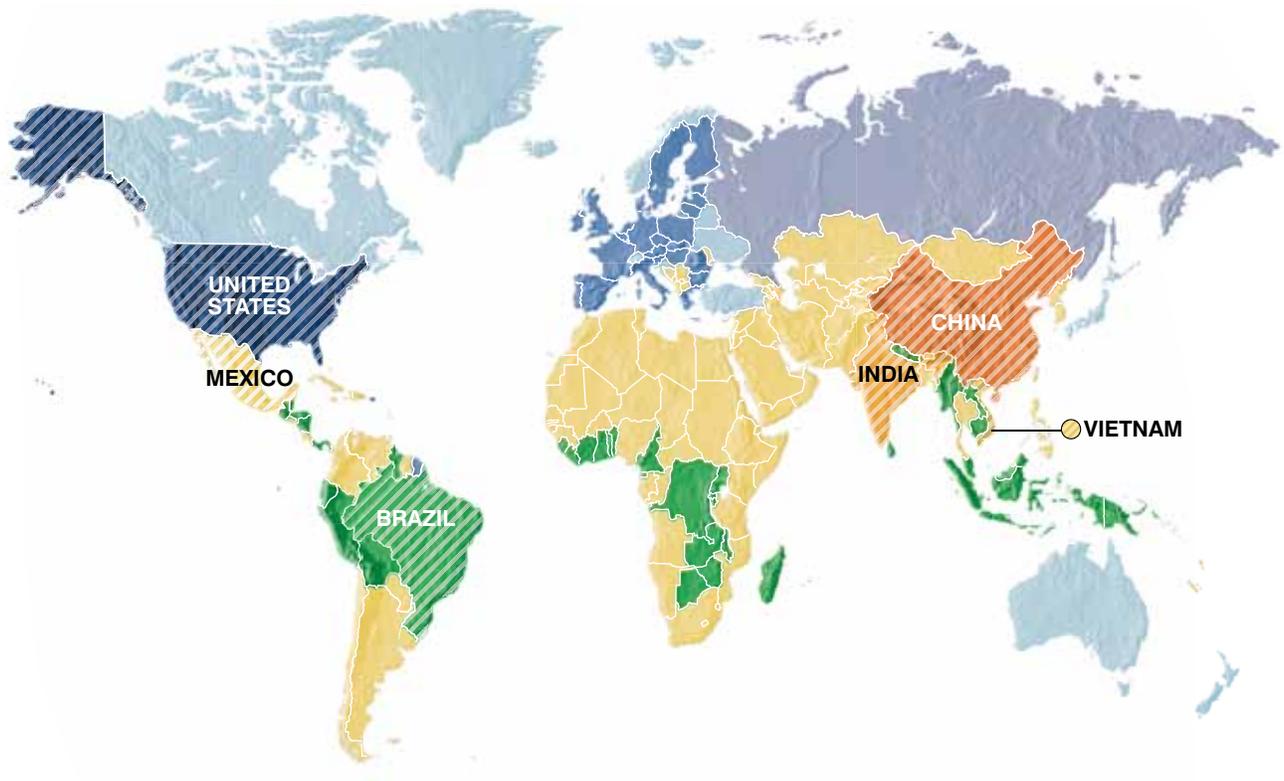
Called REDD (Reducing Emissions from Deforestation and Forest Degradation), this plan provides economic incentives to conserve forests. EDF will help create the financial mechanisms that benefit indigenous peoples who help protect forests and the effective markets that allow the resulting credits to be used in both U.S. and international trading programs.

With effective monitoring, implementation and enforcement, REDD will dramatically reduce tropical deforestation by making forests worth more alive than dead. It gives rainforest countries an opportunity to join the global system for greenhouse gas reductions—and to realize financial benefits—even before they formally adopt economy-wide caps on greenhouse gas emissions.

Bringing developing countries into a global agreement

Our overarching goal is to reduce global warming pollution throughout the world. But we won't simultaneously get all the required commitments from all the nations, so we need to have an international agreement that allows countries to join as they are ready—and that attracts them to do so.

Rainforest
destruction emits
nearly as much
global warming
pollution as
the entire U.S.
economy.

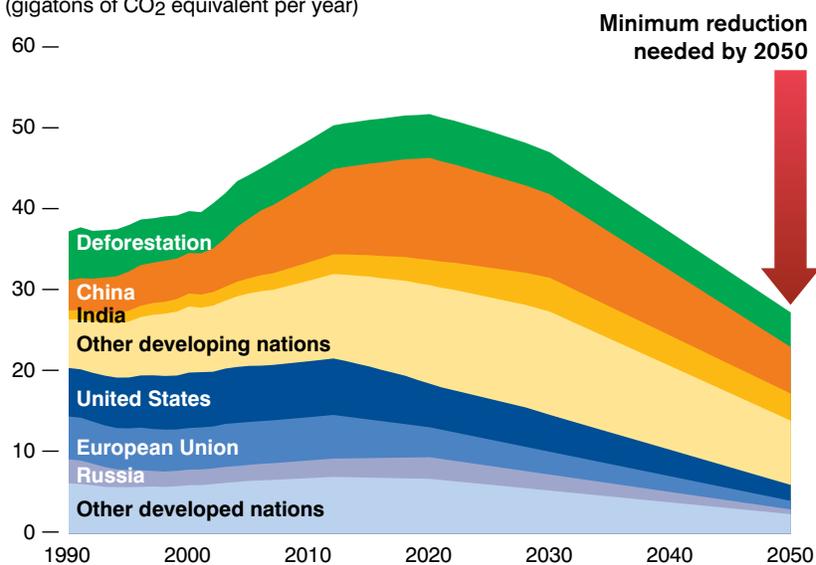


Key actors needed in a global climate agreement

- ▨ Countries where EDF is focusing its climate work
- Rainforest nations
- United States
- China
- European Union
- India
- Other developing nations
- Other developed nations

The solution: collective action

Greenhouse gas emissions
(gigatons of CO₂ equivalent per year)



Scientists tell us that to stabilize the Earth's atmosphere and avert catastrophic climate change, global warming pollution needs to be cut 50% or more by 2050.

This graph shows one scenario, with developed nations reducing emissions immediately and developing nations soon afterward.

The desire for a higher standard of living is part of the human condition.

The prospect of early access to global carbon markets can be an enticement for developing countries to take a cap on their emissions—and could help finance their transition to a low-carbon economy. EDF is working to help create an international policy framework that does not immediately demand that developing countries accept mandatory economy-wide caps, but that builds an enticing path for them to do so.

The desire for a higher standard of living is part of the human condition. For developing countries, the path toward climate stability and the path out of poverty have to be one and the same. We are working across many fronts to introduce flexible policy mechanisms to expand responsible development.

We envision provisions in the global climate agreement that would serve as “docking stations” to allow countries in various stages of development to connect up with the carbon market. EDF will work with all stakeholders to develop policies and controls that assure transparency and tough and reliable enforcement of such provisions.

We intend to work with ten or more significant emerging economies on their participation in and compliance with global agreements. Our effort will focus both on the larger emerging powerhouses and on poorer developing countries whose support could be essential to reaching a global agreement. Whatever these countries’ current stated positions in the international negotiations may be, all of them face the challenge of carving out a low-carbon development path while adapting to the increasing impacts of climate change.

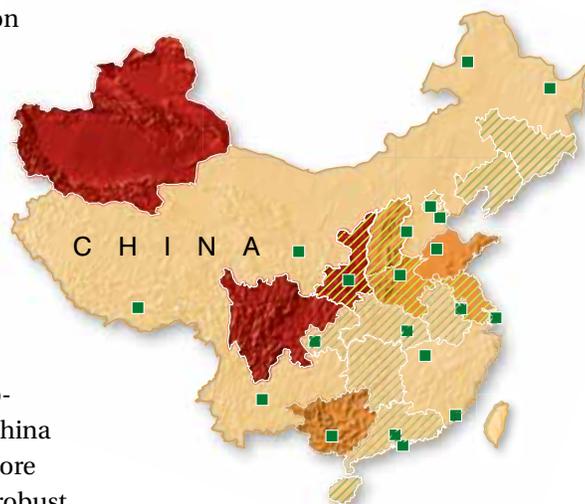
We and our local partners will work to help define those development paths and to develop practical, gradual steps toward elaboration of carbon limits in countries such as India, Mexico and Vietnam. EDF’s role will be to translate the opportunities created by the international agreement into elements tailored especially for the unique situation in each country.

China: a special case

EDF can play a special role in China, where we have worked since 1991. As the world’s largest greenhouse gas emitter, China is a crucial partner in the effort to reduce emissions globally.

EDF will leverage its extraordinary reputation and success in China, such as our design of economic incentives to cut power plant pollution and our efforts with government officials to improve environmental governance. We will work with our colleagues and partners to enable China to take the kinds of actions needed to chart a responsible and serious course toward carbon limits.

Our strategy is to design and facilitate a published and widely recognized path to help China move to a low-carbon economy, and to explore the benefits that could be realized by more robust participation in the emerging international carbon market. These benefits would include a new flow of revenue for the country’s poor rural farmers who change their land management practices in ways that absorb carbon or reduce emissions of greenhouse gases.



Our work in China

- Air pollution control programs
- ◌ Enforcement programs
- Greenhouse gas reduction projects with farmers
- Green commuting partners

Senate ratification of an international agreement

Ratification of international treaties has always been a formidable challenge for the U.S. Senate. If the President submits a climate agreement to the Senate for ratification, we would need to launch a massive strategic effort on the level of the campaign we undertook to pass domestic climate legislation. It would likely require significant field communications, strategic partners and extensive lobbying. Our efforts would also require substantial resources to combat the well-funded forces that oppose a climate agreement.

RAISING THE BAR: Our international climate objectives by 2014

- International carbon reduction framework is adopted and in force, with broad confidence demonstrated in the transparency and integrity of the carbon market
- Annual global greenhouse gas emissions from deforestation are on track to be reduced 20% from 2009 levels by 2020
- Several major emitters among developing countries implement programs needed to meet their carbon targets
- New carbon transactions in China reach 100 million tons (in carbon dioxide equivalent) per year, and noncompliance with the air pollution law is reduced by 80%
- China's government issues a feasibility report on capping carbon from the electricity sector

Help businesses hasten low-carbon innovations



To ensure the successful implementation of a cap-and-trade system, we will continue our work in the private sector to promote the rapid transformation of markets toward a low-carbon future. Voluntary greenhouse gas reductions by corporations can expedite global gains, especially for sectors not likely to be directly or immediately covered by climate legislation. We will partner with iconic companies to accelerate market innovations that reduce greenhouse gas emissions. Our goal is to set new best practices to achieve sector-wide change.

We will work closely with our current partners like Walmart.

To leverage proven results, we facilitate innovations through our online Innovation Exchange network. We will work closely with current partners like Walmart to create low-carbon supply chains and build a market for the next generation of solar power. In addition, we will expand our involvement in sectors like commercial real estate and information technology, which have high potential for innovations in energy efficiency.

RAISING THE BAR: Our climate partnership objectives by 2014

- Emission reduction audits are a regular practice of 75% of the world's 1,000 largest companies
- At more than 10,000 of the factories in China that supply Walmart, energy and water use is reduced by 50% and hazardous and solid waste is reduced by 35%
- Our partner companies reduce their annual greenhouse gas emissions by 60 million tons (in carbon dioxide equivalent) by adopting recommendations developed with EDF



Oceans

OUR GOAL ▶ Protect ocean ecosystems by creating sustainable and healthy fisheries

THE CHALLENGE

The global oceans are emptying of seafood. In 2003, *Nature* magazine reported a 90% decline in the populations of large fishes—the highly sought-after species like tuna and swordfish. In the United States, despite comparatively strong fisheries laws, the best available science indicates that only about 25% of fisheries are managed at sustainable levels.

Overfishing is the biggest driver of declining fisheries, although habitat loss, climate change and other factors contribute to the problem. The UN-sponsored Millennium Ecosystem Assessment, the most thorough evaluation to date of Earth’s ecosystem health, concluded that overfishing is having “the most widespread and the dominant direct impact on food provisioning services, which will affect future generations.” To secure fish as a food source and to protect ocean ecosystems, we must reduce overfishing.

Conventional fisheries management has sought to limit overfishing indirectly, such as by restricting the number of days fishermen can work, rather than by setting strict limits on catch. This has created a cat-and-mouse game between regulators and fishermen and has resulted in increased collateral damage to the ocean ecosystem, such as when non-targeted species (“bycatch”) are caught, killed and discarded.

EDF’S SOLUTION

The solution is to transform fisheries management to a system that sets strict performance standards and lets fishermen determine how best to meet those standards. The mechanism for doing this is called “catch shares.”

In a typical catch-share program, fishermen are allocated shares of the total allowable catch, which is determined by the best available scientific information. They are held strictly accountable to catch only their annual allocation, but they have flexibility in choosing when and where to fish, letting them improve their efficiency. Because a share of any fishery is tied to the size of the fish population, the amount of fish they can catch rises as the fishery recovers, and thus fishermen gain a long-term stake in restoring the health of the oceans.

Our oceans work will focus on establishing catch shares among the United States’ fisheries and elsewhere. We will also explore powerful new approaches that combine catch shares with incentives to protect critical habitats.

Make catch shares the standard in U.S. fisheries



Among environmental advocates, EDF has been the major U.S. proponent of catch shares, playing a key role in several pivotal reform efforts. Over the next five years, we will help put policies in place to make catch shares the standard approach to managing U.S. commercial fisheries. We will work with the regional fishery management councils to help design successful programs that will enforce catch limits, reduce bycatch and improve the economics of fishing, as well as reduce the risks of fishing for a living.

“EDF was the first to recognize the human dimension to the fishery crisis.”

Rich Young
Commercial fisherman

Once catch shares are instituted within a fishery, there is still important work to be done to ensure that monitoring, reporting and enforcement are in place to ensure that the system works effectively. That way, the economic and ecological recovery of the fisheries that is brought about by catch shares will continue for decades after the programs are introduced.

In addition to getting the policies right for commercial fisheries, we will help find management approaches that work for recreational fisheries, which often represent a significant portion of the total catch.

Monitoring, reporting and enforcement are keys to success.

RAISING THE BAR: Our domestic oceans objectives by 2014

- Catch-share management is in place or under active consideration for half of all federal fishery management plans, and for four highly leveraged state plans
- Federal policies require fisheries managers to consider catch shares and to achieve economic and environmental results comparable to well-designed catch-share programs
- In 2014 all catch-share fisheries in the United States are meeting or exceeding targets for rebuilding fish populations and other performance goals (catch limit compliance, bycatch reduction, habitat protection, economic output)
- Four pilot programs feature effective management in recreational fisheries



The most severe problems with fisheries are outside the United States.

Promote catch shares internationally



Overfishing is a global crisis, and international engagement is essential to solving the problem. In fact, the most severe environmental problems among global fisheries exist outside the United States.

EDF will offer its expertise to help improve fisheries in adjacent waters that are ecologically linked to U.S. fisheries, including waters around Cuba, Mexico and Belize. The area of the Gulf of Mexico, Caribbean and Atlantic forms an ecosystem of incredible productivity that must be viewed as an interconnected whole.

Elsewhere in the world, we will look at opportunities to engage in fisheries where the economic, political and ecological factors are right for catch shares. We see a natural partnership with World Wildlife Fund to work on catch shares internationally. That group agrees that catch shares hold tremendous promise, and its global reach and local knowledge would be a strong complement for our design expertise.

Several countries have become strong proponents of catch shares, including Australia, New Zealand, Iceland and Mexico, and they can be powerful allies in an effort to promote catch shares internationally. As a nongovernmental organization, EDF has the freedom to engage partners, mediate discussions, share case studies and cross-pollinate ideas from around the globe.

RAISING THE BAR: Our international oceans objectives by 2014

- Catch-share management is instituted in selected fisheries in Mexico, Belize and Cuba as a model for replication throughout Latin America and the developing world
- EDF has completed a scoping study to determine the best strategy for engaging in international and multilateral fishery compacts and commissions, and is engaged in preliminary work prioritized through that process
- EDF is established as a thought leader internationally and positioned to engage beyond its current reach

Protect and restore ocean habitats



The quality and abundance of key ocean habitats such as spawning, nursery and feeding grounds are crucial in the recovery of troubled fisheries. Exciting new approaches are being developed to protect and improve such habitats, which will complement catch-share programs and maximize the overall benefit to fisheries.

Over the next five years, EDF will work to convince fishermen and fishery managers that habitat conservation makes financial sense and will increase the ecological health, productivity and profitability of fisheries. Coral habitats are of special interest because of their importance as key fish habitats, their susceptibility to climate change and their role as centers of global biodiversity. Protecting key habitats will help ensure and enhance the success of catch shares worldwide.

RAISING THE BAR: Our ocean habitat objectives by 2014

- At least 23,000 square miles of key ocean habitat gains full protection, including at least two fishery habitats protected through new management models designed to increase economic productivity
- The global volume of the coral trade (for coral harvested in the wild) is cut in half, with performance standards and economic incentives that encourage product substitution



Ecosystems

OUR GOAL ▶ Preserve critical land and freshwater ecosystems for the benefit of people and wildlife

THE CHALLENGE

Over the past century, misguided land and water management policies, combined with population growth and counterproductive subsidies, have resulted in large-scale damage to some of our most important ecosystems. Today, hundreds of species are in danger of extinction and cities and towns are at risk from extremes of floods and drought. The changes brought by global warming will only exacerbate these problems.

Water supplies are under particular threat around the world. With climate change disrupting snowpack, glaciers and precipitation patterns, water may become as contentious as oil, characterized by growing scarcity, distribution challenges and potential for causing conflict. Here in America, 46 states are predicted to face serious water shortages during drought conditions.

EDF'S SOLUTION

To ensure our environmental and economic security in the 21st century, we need to protect land and freshwater ecosystems at a scale never before attempted. This can be done only by changing the underlying economic incentives so they reward restoration, efficiency and pollution reduction, not overuse. To accomplish this goal, we must work hand in hand with the private landowners whose livelihoods are inextricably tied to healthy ecosystems.

In partnership with other national and regional organizations, EDF will make habitat conservation pay for landowners, build water-use efficiency incentives into state and federal laws, and promote innovative, market-based financing mechanisms to help

From food and medicine to clean drinking water, nature provides services we can't live without.

Don't take nature's services for granted

What price pollination? If humans had to take over the work now done by bees, bats and birds to pollinate plants, could we afford to eat?

Pollination is just one of the vitally important services we receive from healthy ecosystems. Their value in dollar terms could dwarf the global economy.

Coastal wetlands shield us from hurricanes, soil filters drinking water and nurtures crops, and natural vegetation prevents erosion—all without sending a bill.

Privately owned working lands—our farms, ranches and forests—have long provided many of nature's services. Yet each year we lose two million acres of these lands to sprawl and development, in part because their services have been taken for granted. We must protect healthy ecosystems for future generations, or the bill will come due.



Biosphere 2 in Arizona tried to duplicate nature's services under glass. It was harder than it looks.

restore ecosystems. Our programs will support human wellbeing, enhance ecosystem health and promote economic growth.

Conserve land and protect endangered wildlife



In the 1990s, EDF pioneered a new way of protecting wildlife: enter into voluntary agreements with landowners to improve habitat on working lands, where most endangered species are found. We showed how wildlife could benefit without the need to retire these farms, ranches and forest lands from use, meaning that far more land would be available to help species. These Safe Harbor agreements now encompass more than four million acres.

The Safe Harbor wildlife programs cover more than four million acres.

Certain habitats support particularly high concentrations of endangered species, so we are focusing our ongoing work on five iconic landscapes: Northeastern and Southeastern forests; Texas ranchlands; Western grasslands; wildlife corridors in the Rocky Mountains, and California's Central Valley. In each of these landscapes, we will identify indicator species that serve as leading barometers of ecosystem health. By restoring habitat for these species, we also will aid in the recovery of hundreds of associated animals and plants—indeed, of entire ecosystems.

We will continue to work closely with partners including the California Rice Growers, The Nature Conservancy, other land conservation trusts, a Montana ranchers' association and state and federal agricultural agencies. We will expand EDF's incentive programs to encourage more landowners to invest land and capital in wildlife conservation, and we will help ensure that available government funding is used effectively. Our work can serve as a model for landowner-agency cooperation in other imperiled habitats.

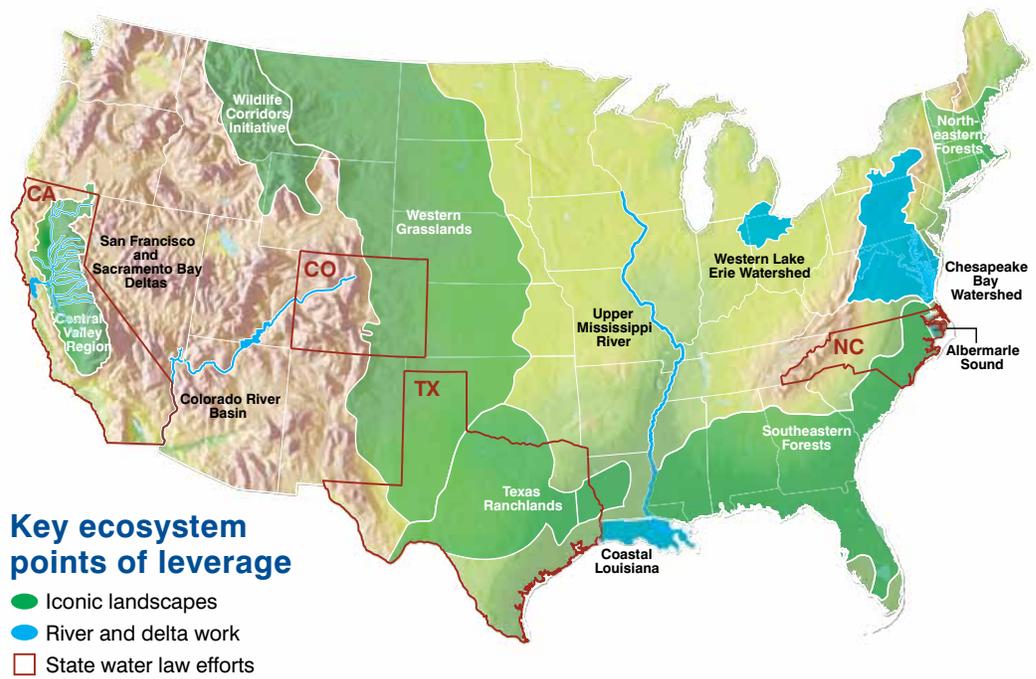
Interactions between climate and ecosystems

Our work to protect ecosystems will have co-benefits for Earth's climate, because farmers, ranchers and forest owners are critical in the fight against global warming. Using the incentives provided by carbon markets, we will enlist owners to capture and store carbon on their lands and to develop sustainable, low-carbon biomass energy, focusing on projects that also restore and protect important habitat for wildlife.

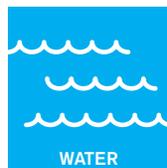
We also will help build ecosystems' resistance to global warming. A healthy, robust ecosystem is better able to weather the changes in climate that will result from past air pollution. Such changes already are affecting wildlife. For example, the appropriate habitat for some species will move northward as climate warms, but national parks and wildlife refuges stay put—so wildlife will push out beyond the boundaries of existing sanctuaries. Private landowners who lay out a welcome mat for species on the move can play an essential role in a national strategy to help wildlife adapt to a changing climate.

RAISING THE BAR: Our land and wildlife objectives by 2014

- Identify threatened or endangered species whose recovery will indicate broader ecosystem recovery in five iconic landscapes (see map, page 16)
- Double the number of privately owned acres enrolled in habitat restoration and species recovery programs in these iconic landscapes
- Slow and reverse the decline of indicator species in these landscapes



Protect water supply and freshwater ecosystems



Simply put, water is life. When water is plentiful, people and communities can prosper and ecosystems thrive. But water resources have become scarcer as population and demand for water have soared. Shortages can turn into crises. At one point, Atlanta had only a three-month reserve of water, while smaller communities in the Southeast had to truck in water to survive. Global warming will intensify future droughts.

America has enough water for everyone, if we manage it rationally.

The good news is that America has enough water for everyone, if we manage it rationally. The problem is waste. Outdated water laws written when demand was a fraction of today's provide a perverse incentive to "use it or lose it," rewarding waste and penalizing conservation. Agriculture, which accounts for 80% of the nation's water use, wastes water through inefficient irrigation, runoff and the cultivation of water-thirsty plants in arid zones. Meanwhile, cities' aging water-supply infrastructure leaks millions of gallons a day.

Yet the solution is simple: value water for its worth. EDF's vision of water policy for the 21st century has three key components:

- **Determine** the amount of water that must remain in rivers to keep them healthy, and what remains can be withdrawn up to this cap
- **Facilitate** trading and transfers among water users, so the market will ensure water is used for the highest purpose
- **Replace** subsidies and policies that promote waste with incentives that promote conservation and efficiency

A farmer will not choose to raise water-intensive alfalfa, barely eking out a profit, if he can sell his water to a city for more money. A city will fix its leaky infrastructure if it has to pay for lost water. The sooner we provide a market for water, the sooner everyone will use it wisely.

EDF serves as an honest broker to bridge the interests of water's many users.

We must safeguard the quality of water as well. Polluted runoff from agriculture threatens drinking water, ecosystems and coastal areas. EDF will advocate incentives for farmers to reduce runoff of nitrogen, phosphorous and other pollutants.

Years after Hurricane Katrina, coastal Louisiana remains open to catastrophic flooding. Decades of mismanagement of the Mississippi River system have contributed to the loss of 30% of the state's wetlands, robbing the coast of natural hurricane buffers that EDF aims to help restore.

Proving grounds: Texas, California, Colorado and North Carolina

Because water is managed by a complex patchwork of state and federal laws and policies, fixing today's problems will require an honest broker who can bridge the interests of water's many users. EDF recently played just that role in Texas, where water law was antiquated and tempers ran high. We found allies in landowners, cities, farmers, fishermen and businesses, all of whom joined us in crafting a fair and sound solution that leaves adequate water in the rivers and lays the foundation for effective water markets that we will help implement.

EDF will build on this successful experience in three additional states that can serve as proving grounds for the market approach to water allocation: California, where drought has fueled an intense water war; Colorado, where new tax incentives could help keep water in rivers, and North Carolina, where a new strategy for Eastern water policy is in development. Through this work we will create regional models and overarching national policy.

RAISING THE BAR: Our water objectives by 2014

- Enact strong laws and policies in at least four key states (CA, CO, TX and NC) to guarantee water supply reliability for people and ecosystems
- Reduce nitrogen runoff 15% and significantly reduce phosphorus pollution entering key rivers and deltas (see map, page 16) using policies that reward farmers who reduce runoff
- For the Colorado River Basin, put in place a management plan that allocates water efficiently and protects ecosystem values
- Cap freshwater withdrawals from the Sacramento Bay Delta to help revive species
- Conserve 2,000 square miles of habitat in North Carolina's Albemarle-Pamlico estuary
- Restore two million acres of wetlands and cypress forests to protect coastal Louisiana

Transform corporate water practices



Working with existing and new partners, EDF will help spur the transformation of corporate water practices. We will create sustainability indices to monitor usage and help companies conserve and reuse water. We will seek to accelerate the commercialization of agricultural innovations that minimize water use and nitrogen runoff. And we will help our current partners, such as Walmart and KKR, conserve and reuse water and create new best practices to apply across their supply chains and investment portfolios. We will use our Innovations Exchange network to disseminate these best practices throughout the business world.

RAISING THE BAR: Our ecosystems partnership objectives by 2014

- Reduce our corporate partners' water use by ten billion gallons over five years, representing a reduction of more than 10%
- Introduce innovations to improve effluent water quality and water-use efficiency at companies representing 15% of U.S. market share in retailing and 5% in agriculture



Health

OUR GOAL ▶ Safeguard human health by reducing or eliminating environmental threats, including toxic chemicals and pollution

THE CHALLENGE

Human health and the environment are inextricably intertwined. Products we use every day contain chemicals whose health and environmental effects are not well understood. And air pollution—including particulates, ozone smog and air toxics—continues to have a negative impact on human health, ranging from heart and lung disease to neurological impairment and cancer.

EDF'S SOLUTION

EDF staff have the credibility and long experience on toxic chemicals and air pollution to work effectively with both government regulators and industry experts. We collaborate with regulatory agencies when possible and bring litigation when necessary, and we work with our corporate partners to accelerate the pace of innovation.

Reform U.S. toxic chemicals policy



A change in chemicals policy in Europe is forcing greater testing of chemicals, and the Environmental Protection Agency lately has made reform of chemicals policy a high priority. This gives us new opportunities to use our experience and technical expertise to drive the chemicals market toward safer alternatives.

Chemicals' health effects must be adequately understood.

EDF will work with other environmental groups, labor and health organizations and businesses to build support for new legislation to strengthen the existing Toxic Substances Control Act. Chemicals' health effects must be adequately understood before products containing them are brought to market, and safety information must be disclosed fully to the public. Federal testing and assessment requirements should mirror key aspects of Europe's REACH program.

EDF has been a guiding force behind California's Green Chemistry Initiative, an effort to create incentives for manufacturers to substitute safer ingredients in all products, which could drive the market for safer products nationally.

RAISING THE BAR: Our toxic chemicals objectives by 2014

- We build and help lead a coalition of health, environmental, labor, business, consumer and environmental justice groups to achieve fundamental reform of U.S. chemicals policies
- New legislation is enacted that significantly improves the Toxic Substances Control Act and ensures that only fully tested and safe chemicals are allowed to enter and remain on the market

Accelerate innovation through corporate partnerships



Companies throughout the retail supply chain are aware of the intense public scrutiny surrounding how their products may affect health. To speed the introduction of safer alternatives to toxic chemicals, we will use our partnerships to leverage the retail supply chain and the flow of capital investment.

In our corporate partnership with Walmart, we aim to influence consumer products manufacturers to replace toxic ingredients with safer alternatives, promoting production changes that embrace green chemistry principles. And in our partnership with the private equity firm KKR, we will seek to direct capital to opportunities for reducing toxic chemical exposure.

By promoting the results of our work with these iconic companies, we seek to create broader change. In addition, we will use our online Innovation Exchange to reach smaller firms that, in aggregate, can make a big impact.

RAISING THE BAR: Our health partnership objectives by 2014

- Consumer product ingredients are clearly displayed on labels, and reduction or substitution of hazardous chemicals will occur in the top third of consumer products
- Leading companies representing 10% of market share in consumer products adopt innovations in green chemistry and product design, based on tools and practices developed collaboratively by EDF and its partners

Cut air pollution from coal plants and ships by 75%



A recent court ruling requires the Environmental Protection Agency to develop an effective new approach to reduce major sources of air pollution. Today 90 million Americans live in areas where soot from coal-fired power plants or large oceangoing vessels exceeds federal limits. We aim to reduce this pollution by 75%, saving an estimated 30,000 lives a year, through a combination of regulatory and legislative action.

Air pollution from ships disproportionately affects the predominantly low-income communities adjacent to major ports. We will advocate the use of new federal regulatory authority that offers an important opportunity to address this part of the air pollution problem.

RAISING THE BAR: Our clean-air objectives for 2014

- Sulfur and nitrogen pollution from power plants is cut by 70% from 2004 levels and mercury pollution is reduced substantially
- Substantial reductions of diesel emissions from marine sources and port-related transportation are achieved in all continental U.S. ports

Our air pollution reduction goal could save 30,000 lives a year.

New directions for our work



From our chief scientist to our program experts in the field, EDF staff are constantly assessing the areas where emerging science and technology could make environmental progress more promising—or more urgent. Three areas where we are expanding our work as a result are energy, nitrogen and geoengineering. Each of these has implications spanning our four goals of protecting climate, oceans, ecosystems and health.



Energy

OUR GOAL ▶ Remake the market for efficiency and innovation to reduce greatly the environmental impact of energy production, delivery and use

THE CHALLENGE

The U.S. energy system is at a crossroads. Our energy infrastructure is old and inefficient and is a leading source of global warming pollution. A cap on global warming pollution will turn the nation toward low-carbon energy sources and boost the value of energy efficiency. But outmoded regulations and longstanding market barriers to innovation could hamper progress and inflate the cost of meeting the reductions required under the cap. In addition, some of the new low-carbon energy sources could have unintended environmental consequences for oceans, ecosystems and health.

EDF'S SOLUTION

Sound economics, including an understanding of markets, incentives, externalities and other factors, is essential to creating an efficient, low-carbon energy system in the United States. EDF's economic expertise—coupled with our experience on a wide range of environmental issues—is unique. While a number of nonprofit groups advocate energy policy reform through government mandates and subsidies, the challenge of transforming our nation's energy infrastructure is too large to be met through government action alone. In EDF's energy work, we will focus on markets and the role the private sector must play in achieving the energy revolution we need.

In our energy work, we focus on markets and the role of the private sector.

The smart grid: Pathway to innovation

Since Thomas Edison's day, the electric grid has been a one-way path from central generating stations to individual homes and businesses—a giant, inflexible machine for generating and delivering electricity through monopoly providers. But today, technology presents new opportunities and challenges. A house or store with solar panels on the roof or wind turbines nearby can be both a producer and consumer of power, depending on the time of day. Electric cars could significantly increase demand for power, but could also create capacity for storing energy that might otherwise go to waste.

An electric grid that can meet the needs of the 21st century will have to be able to handle multiple sources of power, channel electricity where needed and help monitor and optimize consumption. It must be designed to incorporate renewable energy sources of every size and type, integrate the coming wave of electric vehicles, and use modern information technologies to optimally match demand and supply.

Creating the smart grid of the future will require electric utilities to be open to innovation. EDF's pilot project with government and industry partners in Austin, TX, is the first of several partnerships we will launch to design the future grid. With our partners, we will set specific environmental performance criteria for smart grid deployment and develop regulatory reforms and new electric sector business models to transform traditionally conservative utilities into agents of change. No longer will the electric grid be a one-way path from power plant to consumer.

The smart grid will help manage electricity supply and demand in real time.

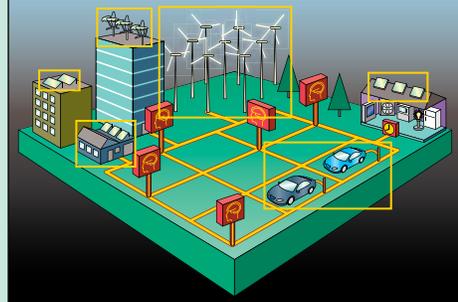
How to tap solar power at night

Solar and wind power can be feast or famine: First you get more than you need, then none. Tomorrow's intelligent electric grid will help even out this roller coaster of supply and demand.

When solar and wind generation peaks, the smart grid could route excess power to the batteries of plug-in hybrid cars, to be stored and tapped as needed. If the supply of electricity falls short, the grid could signal appliances to run later.

EDF and its partners are creating a prototype smart grid in Austin, TX. Our Pecan Street Project there will use two-way communication to relay data about generation and consumption, letting producers and consumers manage supply and demand in real time. It's the wave of the future, boosting efficiency and maximizing utilization of renewable energy.

A smart grid can store excess solar and wind power in the batteries of plug-in hybrid cars.



Reducing energy consumption: Bringing efficiency to scale

Consuming energy more efficiently is the most effective way to minimize the environmental impact of energy production and use. The carbon cap will help, since by setting a price on carbon emissions, it increases the value of efficiency. But the economic literature is replete with studies showing how market barriers and market failures frustrate the effectiveness of price incentives. This hampers the deployment of otherwise cost-effective strategies to use energy more efficiently.

Public investment can stimulate energy efficiency, but it is not enough to bring it to scale. For that we need to engage the private sector and transform the entire market. EDF will work with utilities, businesses, consumers, financial institutions, policy makers and others to develop regulatory reforms and business models that make efficiency profitable—and that make it something consumers want, rather than something government requires them to have.

We will focus on the nation's existing buildings, which account for more than one-third of the total energy consumed. We will pay particular attention to how energy efficiency can profit America's businesses and lead to higher quality of life for low- and middle-income families and communities.

Already we are working with New York City Mayor Michael Bloomberg on a bold initiative to transform the market for energy efficiency in the city's residential and commercial buildings. And our Climate Corps interns—MBA students who spend the summer embedded at companies like Cisco Systems and Stop & Shop—are uncovering millions of dollars of potential savings through energy efficiency. We will demonstrate the efficacy of our strategies locally in New York, Texas, California and the Southeast, and we will find ways to take successful strategies to scale nationally through expanded partnerships and through federal policy.

Ensuring that big generation is green generation

Our energy future will require major new investments in large-scale, low-carbon energy generation technologies. Large-scale solar, wind and other renewable energy projects, and the transmission lines necessary to bring the power to market, are not without negative environmental consequences and tradeoffs. Coal with carbon capture and storage, natural gas and nuclear will all be necessary sources of energy for the foreseeable future.

EDF will lead the fight to guarantee the integrity of carbon capture and storage through appropriate regulations, and we will help craft planning policies to facilitate the responsible siting of needed new transmission lines. Those are just two examples of situations where we will play a role in shaping policies and regulations to minimize the impact of large-scale, low-carbon technologies on the environment.



Agriculture accounts for the bulk of reactive nitrogen pollution.

Nitrogen pollution

OUR GOAL ▶ Cut reactive nitrogen pollution in half to help safeguard climate, oceans, ecosystems and health

THE CHALLENGE

Just as global warming results from human disruption of the Earth's carbon cycle, many problems stem from our disrupting the nitrogen cycle, particularly through heavy use of synthetic fertilizers. There is five times as much reactive nitrogen in the U.S. environment today as in pre-industrial times, with agriculture accounting for two-thirds of the increase and fossil fuels most of the rest. (Reactive nitrogen is the nitrogen in chemicals that affects living things.)

The sharp increase in reactive nitrogen is too much of a good thing. In the right amounts, nitrogen is essential to life. But at greatly elevated levels, it becomes a pollutant. As a result there are now large regions of the country where groundwater is unsafe to drink, coastal waters are unsafe for swimming, fish populations are declining and ecosystems are more susceptible to harm. Reactive nitrogen also worsens global warming.

EDF'S SOLUTION

Currently we aim to achieve a 25% reduction in reactive nitrogen pollution through our work with farmers. But with a significantly stepped-up effort, it may be possible to cut reactive nitrogen by 50%. This will require a broad effort to increase the efficiency of nitrogen use in agriculture, improve sewage treatment and reduce pollution from fossil fuels.

Agriculture is the largest issue, and nitrogen fertilizers drive the Green Revolution that helps feed the world. Because it's hard to judge how much fertilizer is needed, however, farmers apply far more than their crops can use. The excess pollutes the environment by running into rivers and streams or entering the atmosphere as air pollution.

EDF's early pilot programs with farmers show great potential to scale up. For example, farmers can set their crops back from rivers and streams, leaving a waterside buffer strip of trees or grass that filters out nitrogen. In addition, precision application methods let farmers measure how much fertilizer their plants actually need and tailor use accordingly, reducing costs and pollution.

From these pilot programs, we understand that we will only be able to get the agricultural community to change how it uses nitrogen if we can demonstrate that it will benefit both the environment and the farm community. Our markets and incentives approach is well suited to such a challenge, and no other major environmental group is systematically addressing the national nitrogen problem.

Our three-pronged approach

We envision a three-pronged approach to provide the framework to achieve a 50% reduction in reactive nitrogen pollution. Because the world's food supply must be maintained and increased, these pollution reductions must be achieved while we also increase food production per acre. That will require a reliable and economically viable agricultural system.

New research could lead to a greatly reduced need for nitrogen fertilizer.

We have established a set of first principles to guide this work. Since reactive nitrogen moves from soil to atmosphere and water, reductions will be most effective at the point where the pollution first enters the environment. We want to avoid swapping pollution from one place to another. Here are the three prongs of our approach:

1. Align markets and incentives for lower nitrogen use. EDF will evaluate what would be the most effective incentives for farmers to achieve higher nutrient use efficiency. Policies to be investigated would include a cap-and-trade approach, a straight tax, nitrogen reduction credits or some variation or combination of these alternatives. First and foremost, science will need to dictate what level of nitrogen use is acceptable in agricultural practices. We will explore these options through a series of place-based investigations and collaborations tied to our ongoing work with the agricultural community.

2. Improve fertilizer technologies and crop varieties. We will advocate expanded research on fertilizer technology and new crop varieties with higher nitrogen use efficiency. New developments in these areas would facilitate a greatly reduced need for fertilizer. Research also will be needed on improved techniques for retaining nitrogen in agricultural soils and preventing loss to surface water and groundwater.

We will seek a new corporate partner from within the fertilizer industry to develop a business model for marketing fertilizer use efficiency services. These services would help farmers achieve precision application of just the amount of fertilizer that their crops actually need. Precision application equipment is available today but priced out of reach of most farmers.

3. Reduce nitrogen emissions from fossil fuels. Nitrogen emissions from the combustion of fossil fuels are entirely a waste product, and technologies are available to reduce them greatly. Enforcement of existing regulations and pending climate legislation will be needed to achieve the 75% reduction in nitrogen pollution from fossil fuels that we believe is required to meet the overall 50% reduction in reactive nitrogen pollution from all sources.

To achieve our nitrogen goals, EDF also will work to build national and international consensus among scientists about the best strategies for accomplishing the scale of reductions required, as well as increased awareness among policy makers and the public about the urgency of the problem and the need for action.



Geoengineering

OUR GOAL ▶ Provide leadership in framing the public discourse on geoengineering and in understanding and managing the risks and opportunities geoengineering might provide

THE CHALLENGE

Geoengineering is a term used to describe deliberate large-scale manipulation of the environment, particularly as a way to counteract global warming. For example, some have proposed using wind-powered ships with giant funnels to turn seawater into droplets, forming large white clouds that would deflect the sun's rays. Others have called for aircraft, artillery or balloons to inject sulfur particles into the upper atmosphere to reflect incoming sunlight, thus reducing global warming, at least in theory.

Conducting such large-scale experiments on the planet could have unforeseen and potentially severe consequences. For example, atmospheric sulfur injection could trigger changes in the global water cycle of evaporation and precipitation, affecting food production, water availability and ecosystem health. More broadly, debates over the promise and perils of geoengineering could distract from essential policies to address the root causes of global warming.

EDF'S SOLUTION

Efforts are moving forward around the world to study and even pursue geoengineering, despite a lack of input and guidance from the environmental and policy communities. EDF must take a proactive role in the emerging scientific and political discourse to ensure that the science does not get ahead of the policy or vice versa. Our goal is to ensure that any potential use of geoengineering to mitigate climate change is deliberate and would occur only by consensus of the international community.

Proposed geoengineering schemes span a broad range but can be grouped generally into two types: solar input reduction and carbon cycle management. Injecting sulfur particles into the upper atmosphere to reflect sunlight is an example of solar input reduction. An example of carbon cycle management is the idea of ocean fertilization, where iron would be added to the sea to spur growth of plankton, which consumes carbon dioxide and could draw it out of the atmosphere with potential for large-scale disruption of ocean ecosystems.

Unproven ideas could bring serious risks

Environmental groups, including EDF, have been hesitant to speak about geoengineering because of a lack of maturity in the underlying science and the risk of distracting our focus from proven methods that reduce carbon dioxide by reducing or sequestering emissions. Geoengineering is an unproven option that could introduce serious risks, including harmful side effects on ecosystems and human society or the possibility of weaponization.

At the same time, some experts, citing the imminence of dangerous climate tipping points and the slow pace of progress on mitigating climate change, have argued that an aggressive research and experimentation program on geoengineering is needed to determine whether there are any viable options among the ideas currently being debated.

Attempts to counteract global warming could have unexpected consequences.

How can we encourage needed research without incurring serious risks?

While it is easy to see the downside risks of using geoengineering to address the threat of climate change, we should not rule out any options a priori.

To provide leadership in framing the public discourse, we must actively engage with the scientific, policy and legal communities in an active and open discussion of the proposed technologies, their risks and their potential to mitigate climate change. This conversation needs to focus simultaneously on (1) how to conduct research on the potential of geoengineering while limiting the risk of downside effects and (2) how to establish the domestic and international guidelines that allow legitimate research while preempting risky activities.

EDF is well positioned to play a central role in linking the scientific, economic, legal, and political aspects of geoengineering. Our work could involve pressing the international community to set guidelines for experimentation. And we could lobby for a formal international agreement modeled on existing treaties.

EDF could also help lead an effort to answer these key questions:

- How can we encourage research without incurring significant risks?
- Who should be held responsible for damages resulting from experiments or deployment?
- What kind of international process and ratification should be necessary for deployment?
- Who holds violators of an international agreement accountable and how?
- What constitutes imminent catastrophic climate change that might warrant deployment of geoengineering technologies?



As we add new areas of focus, we must also subtract.

Work we are discontinuing

In the current economy, we must be more disciplined than ever in choosing the work we do. As we add new areas of focus, we must also subtract. We have wrapped up some work that had reached a natural conclusion, discontinued projects not central to our goals and reached out to other organizations to take over parts of our work.

Aquaculture

Both our Oceans and Corporate Partnerships programs are discontinuing their work on aquaculture, which historically had been a major initiative. We made the decision after a year analyzing what aquaculture impacts we cared about, what other nonprofit organizations are doing in the field and what it would take to be transformational. We will still do Seafood Selector cards, but only as a communications tool.

International financial institutions

In the past EDF staff played a critical role in improving environmental lending standards for the World Bank and other public and private international financial institutions, as well as building capacity in nonprofit groups in developing countries to monitor investment from those institutions. Resources are not available to take this work to scale, however, nor does it fall squarely within the new directions envisioned in this strategic plan.

Living cities

Our urban work will no longer be a separate program, but portions will continue within our major goal areas. Our clean air work, for example, will continue under our health goal, and transportation will be a key part of our climate objectives. We will phase out diesel retrofit work in NY and CA, helping local groups take over this effort where possible.

Nanotechnology

Our Nanotechnology Risk Framework was developed to provide a risk mitigation option for companies in the absence of a regulatory solution. Now the Framework has been incorporated into our Corporate Partnership Program's Innovation Exchange, and our efforts have shifted toward the regulatory process.

Antibiotics

While we will remain open to opportunities to raise awareness among corporate purchasers about antibiotics practices in pork production, we will no longer have a specific effort geared toward antibiotics.

Some local ecosystems

Our new focus on major river systems and deltas has caused us to end river herring restoration and wetland mitigation work in North Carolina and on Long Island (largely being transferred to a local group); Hetch Hetchy restoration in CA, and various regional projects in Texas (being spun off to newly created watershed organizations). Our land and wildlife focus on iconic landscapes will result in ending a number of projects that fall outside our new parameters, including work in Florida, Tennessee and the Southwest.

Our core capabilities: What's needed to deliver on our goals



Today's increasingly networked world has opened new opportunities for EDF to tap the knowledge of far-flung experts, organize powerful new partnerships and use advanced online communications tools to reach out and persuade. To take full advantage, we must perfect new technical skills, listen more attentively and learn to speak the language of those we want to engage.



From inception to full implementation

OUR GOAL ▶ Design our work for broad-scale impact, and forge the partnerships needed to deliver transformational change

The measure of our work has to be what changes in the world. Often we have assumed that the power of our ideas alone would cause them to be implemented fully. Going forward, we will not only foster innovative ideas but hold ourselves accountable for their effective implementation on a large scale. We look to our partners and allies to both contribute new ideas and help put them into practice.

Create an Early Innovations Initiative

Our strategic plan is not set in stone, because new problems and opportunities can arise at any time. We will be open to new ideas no matter where they might originate. Some of EDF's greatest work has been pioneered by entrepreneurs within the organization who envisioned world-changing solutions to problems even before the problems had been fully articulated.

For example, our California staff realized the potential of water marketing and enlisted powerful agricultural and municipal partners in their bold experiments. In China, our chief economist sensed openness to a market-based approach for reducing pollution and began to work with the country's leaders, laying the cultural and policy groundwork for carbon trading. Our oceans team saw the power of catch shares to revive America's fisheries long before Congress warmed to the idea.

To foster this entrepreneurial spirit, our new Early Innovations Initiative will provide seed funding, mentoring and evaluation for early-stage explorations, based on a venture capital model. We will seek to identify breakthrough ideas and help develop them into strategies for transformational change, with milestones built in for accountability. Not every idea will blossom, but the rewards will be worth the risk.

Build strong partnerships

EDF excels at putting aside ideology, theory and stereotypes in favor of practical partnerships that get real results. Many decision makers had never witnessed this sort of environmental partnership until we walked through their doors with unexpected allies such as ranchers, fisherman or corporate leaders. It makes a powerful impression. For example, the U.S. Climate Action Partnership, an alliance of leading corporations and environmental organizations that we helped found, has been very instrumental in advancing climate change legislation.

Our partners bring great ideas to the table. For example, the idea for our Safe Harbor wildlife conservation program for landowners came from listening to potential partners and incorporating their needs. Those partners in turn have spread our ideas further, including through the group Sustainable Conservation.

We will build on our current partnerships and enlarge our capacity to forge new ones. As we take on some of the most difficult environmental problems internationally, the need for new alliances will multiply. The varied cultural backgrounds, history and experience that our partners bring to the table will challenge us and strengthen our effectiveness in finding solutions.

Our partners contribute new ideas and help put them into practice.

Each new project at EDF begins with a theory of victory.

From the outset, plan for full implementation

When we consider a new area of work for EDF, we first lay out a theory of victory, a scenario that outlines the steps we need to take and the obstacles we need to overcome to solve the environmental problem. In the past, some of these work plans extended only as far as a successful demonstration project. Now we will lay out what is needed for full implementation and determine whether we intend to enlist partners to roll out an idea or implement it on our own. We will ask ourselves:

How: Can we envision clearly how our activities will add up, over time, to transformational change?

Who: Have we mapped out the work with potential allies at an early stage, listened attentively to their perspectives and arrived at a shared agenda?

When: What are the markers of change and what timetable will we set for ourselves and our partners?

To achieve the greatest likelihood of success, we will bring in our collaborators early, find the ways they work most effectively and allow them the opportunity to modify our initial thinking.

Nurturing people and ideas



OUR GOAL ▶ Cultivate the human capital and the management that enable us to identify, apply and hone the best ideas

People come to EDF to make things happen. They are drawn by our track record of taking on the hard challenges and finding practical answers.

EDF must remain a destination for the best and the brightest. But in an increasingly interconnected world, we will also be poised to spot the most excellent ideas no matter where they may arise. The changing nature of communications lets us tap rich new sources of innovative thinking around the world and create closer working relationships with peers and partners, even at a distance.



Attract a critical mass of diverse talent

We must achieve a greater range of perspectives and expertise by attracting and retaining more diverse talent. From scientists and economists to lawyers, policy experts and communications professionals, we face a growing need. As our international activities expand and as the face of America changes, a diverse staff will deepen our cultural understanding and our ability to win results.



Give staff the freedom to get the job done

We have been fortunate to attract more than our fair share of the world's best talent. Why do such exceptional people choose to come to EDF? One reason is that smart, committed people want the freedom to get the job done. They don't thrive on bureaucracy, paperwork or unnecessary management intervention. We want to be known as a place where staff are given the authority and accountability to produce real results.



Define a variety of clear career paths

We must understand what our staff are looking for in their job experience and then deliver on it. For example, some scientists may want a career path that focuses on science, not management. Other staff might appreciate opportunities to rotate among multiple projects and develop solutions to complex, multisystem problems. We will create a variety of career paths and help managers and employees understand the options fully.



Make staff development part of everyone's job

A strong institution is always nurturing its future leaders, so developing our staff will be a greater part of everyone's job. An employee's direct manager is the most influential driver of retention and performance, so we will provide the training and support for both new and senior managers to mentor and coach successfully.

Enable cross-functional communication and collaboration

As our staff has grown, it has become more important—and more challenging—to promote strong internal communications. We must help all staff stay well-informed on EDF's broader endeavors, not just their own jobs. We will promote the free flow of information and ideas across programs and departments and use technology to facilitate collaboration and access.

Expanding our networks will bring broader expertise from around the world.

Develop networks of external experts

EDF will experiment with a more distributed, open-source communications model on selected topics. We will build the technological tools that support external networking and train staff in the skill of managing through networks. To make these networks effective, we must establish close connections with leading experts outside the organization. This will mean encouraging staff to become more involved in their peer communities and more open to sharing the knowledge gained. The promise of this approach already can be seen in our partnerships on oceans with Stanford and Duke Universities.

Create an alumni network

When staff members leave our organization, they should not leave our network. As they continue to flourish elsewhere, they can become emissaries and advocates for our ideas. We will build and cultivate an alumni network of former employees, consultants and interns to give us access to the broadest possible pool of experts while strengthening our ties to other organizations.

Communications and persuasion

OUR GOAL ▶ Engage and persuade key decision-makers and the public through a broad set of communication channels

Even our most compelling ideas can't help the environment unless we convince others to act on them. EDF has long shown an exceptional ability to reach and persuade top decision-makers in business, government and media. But the landscape is changing. Now anyone with a computer can be a broadcaster, a lobbyist or both, and communication has become a two-way street: The audience expects to participate. It's a conversation, not a lecture.



Perfect an “audience-centric” approach

We must hone the skills needed to thrive in this new marketplace of ideas. We must identify and understand our audiences, speak their language, reach them where they want to be reached and, most important, listen to what they have to say. To do this, we will help our staff master the expanding array of social networking and other social media tools, identifying the methods best suited to each audience. We'll focus on describing our work in human terms, using memorable stories and visuals.



facebook

Craft our messages to build on our strong reputation

When our reputation for sound science and constructive solutions precedes us, others are more likely to give EDF a fair hearing. Each staff member must be mindful of how his or her communications will enhance or undermine that reputation.



twitter

In the world of new social media, it would be impossible for all communications to pass through a central press office. Instead, a far broader group of staff will serve as our ambassadors and spokespeople through their public appearances, web postings and blogs. To prepare them for this role, we will build internal programs to ensure broad-based understanding of and consistency with EDF's core values and overarching messages. Our inherent optimism, our respect for others, our tradition of civil discourse and our focus on transformational change must come through in all we say and do.



myspace™

Expand our donor, activist and Strategic Partner communities

We will strengthen and expand our Strategic Partners program and other efforts that give EDF its special ability to reach decision makers. Many of our donors want to do more than write a check, and many activists would like to do more than send email to Congress. Given these trends, we will continue to experiment with numerous additional forms of engagement.



YouTube



Investment

OUR GOAL ▶ Secure the funding needed to support our goals and efficiently allocate it consistent with our strategy

While building our core capabilities, we will strengthen EDF as an institution to attract the investment and sustain the level of talent required to achieve our objectives. In the five years preceding this Strategic Plan, we were highly successful in attracting financial support for our work. We doubled our program budget and increased the number of major donors. Despite today's uncertain economy, we are confident that EDF's bold vision and clear strategy will continue to inspire our current supporters and attract new ones.

Pursue international fundraising

With the prominence of environmental issues worldwide and with EDF's reputation for constructive solutions, we are well positioned to attract support both in the United States and elsewhere. To support our increasingly global work, we will seek support not only from internationally minded donors in the United States but also from donors in other countries. Beginning with a focus on London and Shanghai, we will approach individuals whose interests align with ours. The locations where we raise funds will sometimes but not always overlap with where we are doing program work.

Make efficient and effective use of financial resources

As stewards of our donors' contributions, we cannot afford to spend a dollar on anything less than its best use. We will be scrupulous and disciplined in using funds entrusted to us, and we will hold ourselves accountable by using rigorous metrics to track the return on investment and report results to donors.

Become a model for a low-carbon organization

We must practice what we preach by using energy efficiently and becoming a model for others to follow. We will reduce EDF's carbon footprint by more than 20%, in line with the legislative goals we are advocating for others, and we will offset our remaining greenhouse gas emissions. In addition, we will continue to reduce our paper consumption and increase our use of sustainable products.

As stewards, we cannot afford to spend a dollar on anything less than its best use.



Markets must incorporate the real value of environmental assets.

CONCLUSION

A CRITICAL MOMENT IN TIME

Environmental Defense Fund is undertaking this next stage of our work at a critical moment in time. Scientists assessing the state of the environment today see a series of deeply troubling developments, including:

- the current and looming impacts of *climate change*—and the evidence that unless we act now, the economic costs of slowing or reversing the impact will increase dramatically
- the preponderance of unsustainable fisheries in the United States and around the globe, threatening biodiversity of the *oceans* and putting at risk a critical source of protein for much of the world's population
- the escalating pressure on *ecosystems*, including encroaching development, water shortages and the impacts of climate change
- the growing *health* consequences of exposure to increasingly complex combinations of chemicals in our everyday lives

Until we align economic incentives with protecting the environment, these problems will persist and worsen. Until markets incorporate the real value of environmental assets, the collective consequences will mount. We need to unleash transformational change—change that will affect entire sectors in fundamental ways.

The global stakes are huge and the time horizon short: In the next five years, we'll either harness markets to protect the environment, or the most serious problems could spiral downward and the opportunity to solve them be lost forever.

Fortunately, however, we are confronting these challenges at a point in history that offers more opportunities for transformational change than ever before. We at EDF are full of hope about what we and our supporters and allies can accomplish together.

Through our commitment to science and economics, we can make real progress toward preserving the natural systems on which all life depends. We can begin to stabilize the Earth's climate in time to avoid catastrophic consequences; we can protect ocean ecosystems by designing sustainable and healthy fisheries management; we can conserve and restore critical wildlife habitat and water systems, and we can preserve and enhance human health by reducing or eliminating environmental threats such as toxic chemicals and pollution.

There is no time to lose. And we at Environmental Defense Fund have never been more hopeful. With the support of our donors and the resolve of our staff, we are confident that we can continue and amplify our work to preserve the vibrant diversity of life on Earth—in this century and those to follow.



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