

Maryland Adopts EDF Plan to Control Farm Runoff

The U.S. Department of Agriculture (USDA) has approved Maryland's plan to carry out an unprecedented joint effort to restore 100,000 acres of wetlands, forests, and eroding farmland along streams that flow into the Chesapeake Bay. Maryland farmers will receive \$250 million to turn marginal farmland into buffers of trees and grasses that will provide wildlife habitat and filter pollutants that run off farm fields.

Farm runoff containing fertilizer, pesticides, and sediment adds more pollution to the nation's lakes, streams, and bays than any other source. Many scientists believe such pollutants triggered the normally benign *Pfiesteria* bacteria to release toxins that killed thousands of fish in the Chesapeake Bay last year.

The Maryland program is large enough to place a natural buffer between farmland and every permanent stream in the state that enters Chesapeake Bay. It combines USDA's huge Conservation Reserve Pro-



At the announcement of the Chesapeake Bay protection effort were Vice President Al Gore and EDF attorney Tim Searchinger, who helped design the program.

gram (CRP) with state programs in a manner first suggested by EDF attorney Tim Searchinger.

Congress created the \$2 billion annual CRP program in 1985, in part to reduce soil erosion but also to reduce crop surpluses by

recreating grass cover on one-tenth of the nation's cropland. There was little effort to target the most environmentally sensitive land, however. EDF helped win reauthorization of CRP with a new, strong environmental focus in the 1996 Farm Bill.

Searchinger suggested that, under the new law, USDA should allow states to submit plans to use part of the CRP funding to clean up particular bodies of water or restore rare species. In developing such plans, states can use local scientists to identify the most environmentally valuable farmland and methods of restoration to enroll under CRP. State funds can be used to augment Federal funds to protect the land longer.

In the Maryland program, Federal funds will pay farmers annual "rent" to idle their land for up to 15 years, the traditional limit of CRP support, and will pay for half the cost of planting trees and restoring wet-

Continued on page 5.

EPA Proposes Innovative Plan To Cut Smog in the East

The Environmental Protection Agency (EPA) has called for new state plans to reduce the air pollution that causes unhealthy smog in the Eastern half of the country. Because much of this pollution travels long distances and crosses state lines, the agency has embraced a broad regional approach.

The EPA action requires 22 states in the Midwest, South, and Northeast to reduce emissions of nitrogen oxides and other smog-causing pollutants. Meeting the new standards will lead to cleaner air, especially benefiting children, the elderly, and asthmatics, who are most vulnerable to unhealthy smog.

EPA has also offered to help states use



Automobiles and light trucks are the source of most of the nitrogen oxides and other pollutants that cause urban smog.

innovative policy tools such as the "cap and trade" pollution-reduction programs long advocated by EDF. Such programs set a rigid limit or cap on harmful emissions, but allow flexibility in how and where the reductions are made. Companies that cut emissions more than required can trade with other companies that fall short. This minimizes the cost of the program while guaranteeing that the needed reductions are achieved.

"We are pleased that EPA is encouraging states to use cap-and-trade programs to achieve the needed reductions," said EDF attorney Joseph Goffman. "This approach guarantees reductions at

Continued on page 5.

Inside

3 'Casual' Car Pools Help Commuters and Clean Air

EDF is helping evening commuters from San Francisco to the East Bay locate car pools that are cheap and convenient — and also cut down on pollution.

4 Rainforests Ablaze: How U.S. Consumers Can Help

Timber firms that export to the U.S. are responsible for much of the deforestation in Indonesia and Brazil. Labels on wood could help stop the destruction.

6 A Friend of the Oceans

EDF attorney Doug Hopkins has always loved the high seas he now protects.

7 Time is Right for "No-Take" Reserves

Marine reserves in which fishing is banned are needed now.

Plastics Council Hides Truth On Recycling, EDF Reveals

While spending millions of dollars on public relations touting the benefits of plastics, the plastics industry is working hard to hide its dismal record of recycling its products, a new EDF analysis of the American Plastics Council's own data reveals.

Although the Council withheld its latest survey of plastic recycling rates, EDF was able to obtain a copy. The numbers make clear why the Council declined to make the survey public: less than 10% of plastics packaging is being recycled—one-third the rate of glass, the next lowest category. In

fact, the overall recycling rate for plastics actually declined over the prior year.

Makers and users of plastic packaging have refused to standardize types of plastic they use and often add brightly colored pigments that interfere with recycling. The failure to address these persistent barriers to increased recycling illustrates a fundamental problem: Companies that make and use plastic packaging—unlike makers and users of glass, aluminum, steel, and paper—have yet to work together to design for recyclability and to recycle materials back into the mainstream of production.

EDF's report, *Something to Hide: The Sorry State of Plastics Recycling*, is available free from EDF Publications, c/o the Washington office, and on EDF's web site at www.edf.org.



Chris Jones/Stock Market

Pigmented bottles.

EDF Scientist Wins Award for U.S.-Mexico Border Work

EDF scientist Dr. Carlos Rincón has received a National Environmental Education Achievement Award for his work combating air pollution on the U.S.-Mexico border. Rincón helped found Paso del Norte, an international task force to address air quality issues faced by the neighboring cities of El Paso, Texas; Sunland, New Mexico; and Ciudad Juarez, in the Mexican state of Chihuahua. Approved by

U.S. and Mexican officials, the region-wide air quality management district is the first to straddle an international border.

Rincón has worked to find ways that El Paso businesses can meet some of their U.S. Clean Air Act obligations by investing in cleanup opportunities in Juarez, where many more cost-effective opportunities are available. Among these are reducing emissions from brick-making kilns and from businesses using paints and solvents. Other border communities facing shared air pollution problems, including San Diego and Tijuana, are now considering the same approach.



Carlos Rincón

Three New Reports from EDF

EDF's *30th Anniversary Report* is now available to members (free on request). The 24-page report includes retrospectives on



EDF's first three decades, describes this year's achievements, and outlines the four main goals that will guide our work in the years to come: climate, health, biodiversity, and oceans. Check the box on the

reply form facing page 4 to request your copy, or call the number below.

Aquaculture—fish farming—is the fastest-growing segment of U.S. agriculture and an increasing source of protein for the world. Unfortunately, aquaculture facilities can be significant sources of pollution. A new EDF report, *Murky Waters: Environmental Effects of Aquaculture in the U.S.*, identifies environmental problems caused by fish farming and recommends ways to establish an aquaculture industry that is environmentally and economically sound. (196 pages, \$15 pre-paid.)

The huge proposed Hidrovía navigation project in South America could destroy the Pantanal, the world's largest remaining wetland, which is home to an estimated 150,000 species of plants, birds, and other animals. An independent panel of experts—invited by EDF and a Brazilian non-profit group to evaluate Hidrovía's environmental, social, and economic impacts—has called plans for the project "fundamentally flawed." The panel's findings, including recommendations for more sustainable alternatives, are reported in *Hidrovía Paraguay-Paraná-Navigation Project: Report of an Independent Review*. (224 pages, \$10 pre-paid.)

Order these reports by mail from EDF Publications, c/o the Washington office, or call 800-684-3322. Recent EDF reports are available online at www.edf.org.

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Director's Message

What the U.S. Can Do to Fight Global Warming

As we go to press, I am off to the climate talks in Kyoto, Japan. We know the key elements of the U.S. position: credit for early reductions in greenhouse gas emissions, firm targets and timetables to achieve reductions, and an international "cap and trade" system to open many pathways to compliance, lowering costs and rewarding excess cuts.

EDF joined with other environmental groups in pressing the Administration to commit to larger and earlier reductions. We also helped persuade President Clinton to offer American companies credit for making early reductions—as early as 1998, long before an international treaty takes effect. Since greenhouse gases



Fred Krupp

remain in the atmosphere for a century, trapping heat the whole time, we must begin reducing them now.

The President's proposal for a worldwide limit or cap on greenhouse gas emissions, with a program of trading, is modeled on the successful U.S. acid rain program. That pro-

The acid rain program has a lesson to offer.

gram, designed by EDF, caps power plants' sulfur emissions at half their former level, but lets plant owners decide how the reductions are made. Plants that cut emissions more than required can trade with other plants that fall short. This has led to overall reductions 30% ahead of schedule at one-tenth the cost that some in industry predicted, even below the cost EDF projected. A similar system for greenhouse gas emissions would give companies a powerful reason to reduce emissions ahead of schedule, critical to protecting the climate.

Whatever the outcome in Kyoto, EDF will work to insure that the President implements the promised incentives for voluntary early reductions of greenhouse gases in the U.S. Doing so will generate support from industry for action, stimulate innovations, and provide urgently needed relief for our planet.

Fred Krupp

Fighting Traffic Congestion and Pollution in California and New York

EDF's Transportation staff has worked to help reduce commuter traffic and the resulting air pollution problems for two of the country's most congested crossings: the Bay Bridge between San Francisco and the East Bay, and the I-287—Tappan Zee Bridge corridor over the Hudson River north of New York City.

Approximately 100 car pools are now forming each evening heading from San Francisco east across the Bay Bridge after EDF helped organize "casual" car pools, in which drivers and passengers meet at designated points to arrange rides. More than 8,000 commuters use casual car pools from the East Bay to San Francisco each weekday morning, but ride matching for the evening trip back had been more difficult.

Working with San Francisco Supervisor Gavin Newsom, the San Francisco Department of Parking and Traffic, and RIDES for Bay Area Commuters, EDF set up the program and publicized it on EDF's web site. The incentives for drivers and passengers are time and money: car pools have their own lane to get on the bridge, and riders save money by not driving or paying transit fares.

"We wanted to offer commuters a convenient, inexpensive, and efficient travel option," said EDF economic analyst Daniel Kirshner, who was instrumental in organizing the program. "People need all available options to solve the Bay Area's transportation problems. More people per car means fewer cars, less congestion, and less pollution."

NY State to Try Reducing Traffic

New York Governor George Pataki has canceled plans to build a \$400 million high-occupancy vehicle lane on the I-287 Cross-Westchester Expressway to the Tappan Zee Bridge, one of the New York metropolitan area's most congested highways. Instead, the state is setting up a task force to consider alternative ways to relieve congestion, including developing a program to reduce traffic demand.

"This is one of the first times a governor has proposed to deal with congestion by managing transportation demand instead of expanding highway capacity," said EDF



Peter DaSilva

EDF helped set up designated "casual" car pool pickup points near the San Francisco entrance to the Bay Bridge, where riders and drivers connect for the evening ride home from work.

General Counsel James T.B. Tripp, who has long advocated such an approach.

"It is an action of national significance," added EDF engineer Michael Replogle, "and underscores EDF's position that we cannot build our way out of our transportation problems."

Among the alternatives the state will consider are improving transit service in the corridor, using variable tolls on the Tappan Zee Bridge to encourage off-peak travel and discourage single-occupant vehicles during rush hours, and working with employers to develop incentives for employee car pools.

Cash Incentives for Clean Commutes

Under the new Federal tax law that takes effect January 1, employers that offer their employees free or subsidized parking may offer them an equivalent taxable cash benefit instead. Commuters who car pool, bike, walk, or use transit are potential recipients of this taxable cash in lieu of subsidized parking.

Previously, the law effectively barred employers from offering a choice. The result was to encourage single occupant vehicle travel.

Passage of this law removes a conflict with the 1992 California mandatory "parking cash-out" law requiring businesses that employ 50 or more people and provide leased parking to offer a choice of cash. Enforcement of the California law is expected to result in a sizable reduction in solo driving during peak hours, cutting air pollution and greenhouse gas emissions.

Rainforest Fires in Indonesia and Brazil: The U.S. Link

By Dr. Stephanie Fried and Dr. Stephan Schwartzman, scientists with EDF's International Program.

More of the Earth's surface was ablaze recently than at any previous time in human history. Fires raging in Indonesia blanketed six countries in smoke, damaging human health and causing an international scandal. An even larger smoke cloud covered much of the Brazilian Amazon, where burning was up sharply over 1996 and was possibly the worst on record.

Analysis of satellite data shows that the primary cause of the burning in Indonesia was not, as has been claimed, slashing and burning by the small farmers who have traditionally used fire in a controlled manner to grow their food crops. Rather, research shows that 70% to 90% of the fires were set by large, officially sanctioned companies to clear land for timber, oil-palm, and rubber plantations. The irreplaceable tropical forests of Indonesia, and the land rights of their indigenous inhabitants, are being sacrificed to Indonesia's push to supply heavily subsidized plywood and paper mills.

EDF has urged the U.S. to provide technical assistance and training to help the Indonesian Ministry of Environment and non-government groups monitor violations of environmental law, particularly in Sumatra, Kalimantan, and Irian Jaya, the regions hit hardest by the fires and haze. In discouraging burning, Indonesia must differentiate between traditional judicious use of fire by small farmers and large-scale land clearing by plantation and logging companies. In view of the urgency and magnitude of problems facing Indonesia's forests, the U.S. must strengthen environmental monitoring of currently planned projects aimed at protecting Indonesia's forests.

Amazon Burning Rises 28%

In the Amazon as well, large ranchers were primarily responsible for the burning. EDF analysis of satellite data shows that burning increased 28% from 1996 to 1997. Research in Brazil strongly suggests that for every acre seen burning in satellite images, another acre burns undetected under the forest canopy. Climate researchers calculate that the increased burning is impairing the ability of up to half the entire Amazon rainforest to remain green through the tropical dry season. This might cause the forest to become flammable under only slightly drier

conditions, raising the specter of potentially massive conflagrations in a vicious circle of burning and drying. The end of the Amazon forest may be much closer than anyone has ventured to guess.

One reason for the rampant Amazon burning is that, since 1989, Brazil's environmental agency has had no legal authority to enforce environmental law, including the restrictions on forest clearing. A bill in the Brazilian congress that would restore this authority passed the Senate in early 1997, but has been blocked by special interests in the lower house. The World Bank, the U.S., and other nations must examine the new data and reevaluate their support for Brazilian government programs.

Logging a Path to Your Furniture Store

Unsound forestry practices in both the Amazon and Indonesia spur tropical deforestation and burning. The international timber trade is the chain that links U.S. consumers—mostly unwittingly—to unsustainable forestry practices and the destruction of tropical forests. The U.S. is the number one importer of mahogany, the product most responsible for new deforestation in the Amazon. In addition, about half the imported plywood in the U.S. is the fruit of Indonesia's rainforest destruction. Unfortunately, wood sold in the U.S. is not properly labeled, so consumers generally have no way of knowing if their purchases of furniture or lumber are fueling the rainforest fires.

It is critical that the U.S. give citizens and businesses the information they need to make informed choices. With adequate information, consumers can avoid the wood produced by destroying rainforests and instead help create markets for sustainably produced timber. The labeling of timber and wood products by country of origin and species would provide this information—the essential first step toward harnessing market forces for the sustainability of the forests.

Consumer and citizen efforts against global deforestation in the U.S. and Europe have already led to important steps, includ-



Fires set to clear land for large-scale ranching and logging operations, not burning by small farmers, were the main cause of the uncontrolled fires in both Indonesian and Brazilian rainforests.

ing a mahogany moratorium in Brazil, a World Bank policy prohibiting loans for logging in primary tropical forests, and several institutional and governmental projects aimed at developing methods of sustainable

The U.S. is the #1 importer of mahogany, the product most responsible for Amazon deforestation.

forestry. Unfortunately, the lack of labeling of wood and wood products hampers the boycott and efforts to promote sustainable forestry.

Informed consumers could become the rainforests' best friend. The single most cost-effective step the U.S. can take today for the preservation of the world's forests is to label all timber and wood products by country of origin and species. This simple information would allow consumers in the world's largest timber market to use their power to choose.

More detailed information on timber labeling is available in an EDF report, *Global Deforestation, Timber, and the Struggle for Sustainability: Making the Label Stick*, by Stephan Schwartzman and Molly Kingston. To order, send \$10 to EDF Publications, c/o the Washington office (address on page 2), or call 800-684-3322.

U.S. and State Programs Join to Protect Rivers

Continued from page 1.

lands. State funds will buy permanent easements on a quarter of the lands to assure long-term protection, and will also pay most of the remaining planting and restoration costs. The Chesapeake Bay Foundation has offered to contribute \$5 million to the program.

"This program achieves a degree of environmental restoration that neither Maryland nor the Federal government alone could achieve," said Searchinger. "It is the first large-scale, fully funded effort to restore a bay's wetlands and forest buffers. If imitated across the country, it has the potential, literally, to restore America's environment."

The USDA is reviewing similar proposals from Illinois and Minnesota, also developed with Searchinger's assistance. The two programs together would restore wetlands, forests, and prairies on roughly 400,000 acres of chronically



Grassy or forested "buffer zones" can be created to separate croplands from rivers and streams. The buffer zones help prevent farm chemicals from polluting the water.

Mike Morris/Unicorn Photos

flooded land along the Illinois and Minnesota Rivers and tributaries. Officials in New York, North Carolina, Oregon, and Washington State have also asked EDF to help them develop such programs.

Energy Choice Comes to California on January 1

When utility restructuring begins in California on January 1, residents and businesses in the state who are currently customers of the major utilities will be able to choose their electricity supplier. Many environmentally conscious customers will want to switch to "green" electricity—the cleaner power produced from renewable sources such as wind, biomass, geothermal, solar and appropriate hydro-power. Californians who want



to choose "greener" electricity, however, must change their supplier, because the major California utilities are prohibited from offering non-standard energy mixes for four years. Changing your supplier is as easy as changing your long distance phone company.

For a list of suppliers who offer green power products in California, call or write EDF's California office (address on page 2) or see EDF's web site, www.edf.org.

Smog Cutting Plan is Similar to Acid Rain Plan

Continued from page 1.

lower cost." Goffman and EDF economist Dr. Daniel J. Dudek first proposed such a cap-and-trade approach for Northeast smog pollution in 1994. It is similar to the acid rain reduction program they helped design for the 1990 Clean Air Act.

"The current success of cap-and-trade programs to cut emissions of sulfur dioxide, a principal cause of acid rain, clearly

demonstrates that market-based policy tools deliver powerful environmental and economic results," added EDF economic analyst Sarah Wade.

Details of that success are reported in a new EDF study, *More Clean Air for the Buck: Lessons from the Acid Rain Emissions Trading Program*. The report is available for \$15 from EDF Publications, c/o the Washington office.

Congress Watch

By Steve Cochran,
EDF Legislative Director



The first session of the 105th Congress saw a number of threats to environmental protection. We won some and lost some. Here are a few highlights:



Steve Cochran

Clean Air: Efforts to stop implementation of the new national air quality standards for smog and soot failed in both houses, although

sponsors vow they will continue their efforts in the next session.

Endangered Species: S.1180, the Endangered Species bill introduced by Sen. Chafee (R-RI), may be brought to the Senate floor in early 1998. As described in the November *EDF Letter*, this bill has both strengths and weaknesses, and EDF is continuing to work to improve the final legislation. House action is uncertain.

Superfund: Several Superfund reauthorization bills were introduced in the House and may be considered in early 1998. The Senate has been unable to develop a bipartisan Superfund bill, but efforts will continue in the next session as well.

Takings: The House passed H.R. 1534, a bill by Rep. Gallegly (R-CA) that would allow property owners to bypass state courts and sue in Federal court when a municipality denies a land-use proposal. The bill would undercut local environmental protection efforts by allowing Federal suits even when a proposal would harm nearby homeowners and even if localities would approve other equally valuable uses of the property. EDF and other environmental groups opposed the bill and were able to keep the vote margin low enough to sustain a veto by the President, who has indicated he would veto the bill if it passes in the Senate.

Transportation: Both the House and Senate made progress in preserving key environmental protections in the nation's basic transportation law. Unfortunately, failure to resolve unrelated issues prevented final action in both houses, leaving debate to be resumed in early 1998.

Congress is expected back around January 27. Other topics under debate will include electric utility restructuring, domestic programs to combat climate change, and issues related to clean water and wetlands. It will be a busy year.

Fisheries Expert Doug Hopkins is at Home on the Seas

When Doug Hopkins was seven years old, he fell in love with starfish and hermit crabs and dreamed of becoming an oceanographer. During summers at his grandmother's house near Woods Hole, Massachusetts, Doug spent rainy days inside the Woods Hole Aquarium, fascinated by the animals and plants he saw. That experience "hooked me on oceans," said Hopkins. The oceans had found a lifelong defender.

Doug's early experiences in Woods Hole and on Buzzard's Bay were only the first of many remarkable encounters with the natural environment. Although he opted to study law instead of oceanography, Doug has become a recognized expert on a wide range of water-resource issues and a highly skilled lawyer and negotiator. The U.S. Secretary of Commerce recently appointed him as the only representative of any environmental group now serving on one of the eight regional fishery management councils. Created by Congress in 1976, the councils have the job of deciding how much fishing can be done without endangering the long-term future of the fish stocks.

Outdoor Adventurer

"The water has always been an important part of my life," Doug recalled. "When we weren't in Woods Hole, my family spent summers on Lake Erie, where I spent many hours sailing large and small sailboats." During spring breaks from law school, Doug and some friends ran charter sail trips from Fort Lauderdale, Florida, to the Bahamas. Later, Doug and a friend sailed a small, 1930's-era wooden sailboat from Seattle to Tahiti. Hopkins has also canoed on lakes and rivers throughout northern Maine and Canada, including the Yukon and Northwest Territories.

If water is his first love in nature, mountains are a close second. "Growing up in Buffalo as a flatlander, I had no idea how beautiful high mountains were until I traveled to the Northwest during college." Lured by friends' tales of Alaska, Doug first experienced grand mountains when he took a semester off from his undergraduate studies at Yale to work in a remote Alaskan fish processing facility. "I'll never forget the day my parents dropped me off at the side of an interstate to hitchhike across the country." Doug laughed.

After earning his law degree from the



T. Charles Erickson

"Hooked on oceans" from an early age, EDF attorney Doug Hopkins now works to defend what he loves.

University of Virginia, Hopkins returned to the Northwest to join and eventually become a partner at a Seattle law firm. When fellow partner Brock Adams became a U.S. Senator, Hopkins spent an "extremely fascinating" short stint in Washington as the Senator's legislative assistant on fisheries management and other Commerce Committee issues. After returning to Seattle, Hopkins took a year's sabbatical and worked as an Outward Bound instructor. "Taking groups of kids and young adults on expeditions in the Deschutes River and Mount Jefferson Wilderness areas and the Cascade Mountains was one of the best experiences of my life."

Since marrying actress and singer Kyle Holt in 1992 and having Eliza, their first

Doug and a friend sailed a small, 1930's-era wooden sailboat from Seattle to Tahiti.

child, in 1994, Doug's focus has widened. Being a parent has given him a new reason to work for the environment. With a second child due in March, Doug appreciates his home office in rural eastern Connecticut, which puts him close to the New England ports where he does much of his work.

A Highly Regarded Advocate

Hopkins' appointment to the New England Fishery Management Council was widely supported not only by environmentalists but

also by many members of the commercial and recreational fishing industry. "The fishing industry is made up of a huge variety of opinions and is generally suspicious of national environmental groups," said fellow Council member John Williamson, an independent commercial fisherman from Maine. "It was clear from the beginning that Doug was very sensitive and respectful of everyone's interests. He's an exceptional person who is breaking new ground for the environmental community in a very positive way."

Ellie Dorsey, a scientist with the Conservation Law Foundation in Boston, was equally impressed with Hopkins's abilities: "Doug quickly grasps the science behind the issues and the implications for conservation." During his three-year term on the Council, Hopkins hopes to keep efforts to rebuild New England's depleted haddock, cod, and yellowtail flounder fisheries "on track." He'll also urge development of management plans for monkfish and dogfish and steps to end overfishing of lobster.

Leading EDF's Oceans Program

Hopkins helped to found EDF's new Oceans program. "EDF has assembled an unparalleled team of scientists, economists, attorneys, and other professionals to help solve problems facing the world's oceans," he said. "I am very proud of EDF's commitment and the opportunity I have to be part of it."

Said EDF Trustee Dr. Jane Lubchenco, Professor of marine biology and Distinguished Professor of zoology at Oregon State University, "Doug has led EDF's Oceans program to its new prominence. He understands the seriousness of the numerous threats to oceans and is championing effective solutions."

It may be too late for Doug Hopkins to fulfill his childhood dream of becoming an oceanographer, but there is still hope for at least one Hopkins. For this past Halloween, 2¹/₂-year-old Eliza announced that she wanted to go trick or treating as a fish! Will Hopkins someday drop off his little fish on the side of the interstate to explore the waters of Alaska? With a heavy sigh and a nervous laugh, he replied, "I'm not so sure." Maybe after many more years of working in the fishery management arena, Hopkins will have fine-tuned his negotiating skills enough to equip himself for life with teenagers.

By Cheryl Roberts

Marine Reserves: A Promising Tool to Protect Oceans

By Dr. Rod Fujita, marine ecologist with EDF's Oceans program, and EDF Trustee Dr. Jane Lubchenco, professor of marine biology at Oregon State University.

The ocean is one of the Earth's great "commons." Coral reefs, kelp forests, and other ecosystems of the sea not only support dolphins, sea turtles, albatrosses, and other marvelous creatures. They also provide essential "goods and services," such as fish, minerals, waste conversion, and even the moderation of our climate.

Creating sustainable fisheries and reducing overfishing, which scientists have identified as the most serious threat to marine biodiversity, are key priorities in protecting the world's oceans. Some fisheries have been managed sustainably, but many others have not. About 70% of the world's major fisheries are either fully exploited, depleted, or recovering from depletion. In the U.S., overfishing and habitat degradation have left many fish populations unable to produce maximal yields. Thousands of jobs and millions in revenue are lost as a result.

In relatively well-managed fisheries there is often a poor understanding of fishing's effects on marine biodiversity and ecosystem health. Fish are vital components of marine ecosystems. Overfishing can have profound unintended effects, ranging from algal blooms that can destroy coral reefs to the starvation of seabird chicks that depend on fish for survival.

To halt and prevent overfishing, we need

continued advances in the scientific understanding of fishery management and improved conservation goals—and we must hold resource managers accountable to these goals. We must also replace the strong existing incentives to overexploit with equally strong incentives to conserve.

Managing fisheries will always be an uncertain art, despite such exciting advances as the ability to predict El Niño events, the discovery of long-term cycles in ocean circulation and productivity, and better understanding of how marine ecosystems function. Because of the complexity of these ecosystems, the high level of natural variation of the ocean, and limited funds for research, uncertainty will remain.

"No-Take" Marine Reserves

EDF is advancing a promising hedge against uncertainty: the idea of "no-take" marine reserves, in which fishing is banned—a kind of underwater wildlife refuge. No-take reserves reduce economic pressures to overfish, protect marine ecosystems, and, ultimately, increase fishery yields. Stock assessments and projections of fishing effort are



EDF urged creation of a "no-take" marine reserve in the Florida Keys National Marine Sanctuary to help protect this valuable ecosystem.

often wrong, but no-take reserves will protect fish populations and habitats. Models and catch limits protect "paper" fish; marine reserves protect real fish.

The critical need is for networks of no-take marine reserves, analogous to wildlife corridors on land. No-take marine reserves can yield dramatic benefits, including increased fish abundance, often by several-fold and sometimes within just a few years. No-take reserves also tend to contain more large fish, because in areas that are open to fishing, fishermen often target the largest fish first. Having a diversity of ages and sizes, including plenty of older, larger fish, appears to be critically important for many fish species. Big fish produce many more eggs than small fish; for example, it takes about 200 small adult snappers (typical of a heavily fished population) to produce as many eggs as one large snapper. Well-designed marine reserves should enhance fisheries in adjacent waters by exporting both baby fish and older fish.

Effective no-take marine reserves are also needed on the high seas and in the territorial waters of other countries. Although there are more than 4,500 protected marine areas, they cover far less than 1% of the ocean's surface, and most are relatively ineffective because of lax enforcement and weak public support. Few are closed to fishing; in fact, to win fishing industry support, many so-called marine sanctuaries were set up under implicit or explicit agreements to impose few limits on fishing.

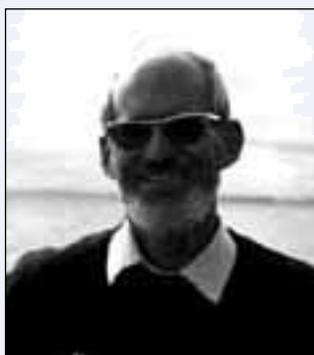
EDF is working with fishermen, other environmental organizations, scientists, SCUBA divers, and community leaders of all types to build support for creating networks of no-take marine reserves. This scientific concept is ready for prime time.

Opportunity for Action Now

The authors of this article are leaders in the effort to establish no-take marine reserves.

As President of the American Association for the Advancement of Science at the 1997 AAAS meetings, Lubchenco called for setting aside 20% of the world's ocean areas as permanent biological preserves.

Fujita has advocated marine reserves in the U.S. since 1990 and helped establish a no-take reserve in the Florida Keys National Marine Sanctuary. He is working with a broad coalition in California to develop and pass legislation that would mandate the creation of a network of marine reserves.



Bill Ballantine

EDF recently organized a series of marine reserve workshops in major coastal areas of the U.S. Dr. Bill Ballantine, who pioneered the establishment of marine reserves in New Zealand, led the workshops, which were hosted by local environmental groups, dive organizations, business associations, and others in

New England, Newfoundland, Florida, California, and Oregon.

Ballantine, who is professor of marine ecology at the Leigh Marine Laboratory, University of Auckland, New Zealand, won the prestigious Goldman Award for his work on marine reserves.

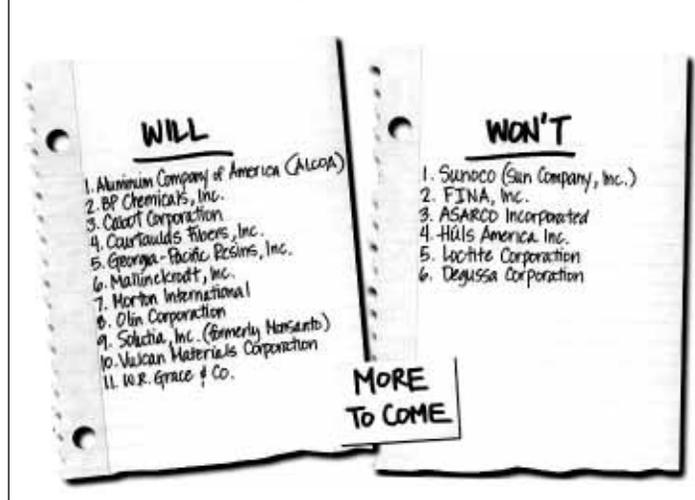
Major Chemical Companies Respond to EDF Challenge

Each year manufacturers sell billions of pounds of chemicals for which the public lacks basic data on health effects. Last July, EDF Executive Director Fred Krupp wrote to the CEO's of the country's 100 largest chemical manufacturers, asking them to commit to finish preliminary health screening of their top-selling chemicals by the year 2000, with public disclosure of the results. In response, some 80 companies have given EDF their views and plans.

Krupp's letter followed the release of EDF's *Toxic Ignorance* report, which documented the absence of such health screening results in the public record for more than two-thirds of the 3,000 most-used industrial chemicals in the U.S. Based on the companies' responses, EDF took out this ad in selected regional editions of *USA Today*.

"Every one of the 80 responses we got took this issue very seriously," said EDF attorney David Roe, "and a large majority agreed that the test data currently available to the public are not adequate. What to do about it is the question that a number of companies are still

Santa isn't the only one making two lists.



Eleven companies have already agreed to finish preliminary health screening of their top-selling industrial chemicals by the year 2000, while six companies have expressly declined. EDF hopes to announce more progress in future ads.

mulling over."

The first response of the Chemical Manufacturers Association (CMA), immediately after *Toxic Ignorance* came out, was to commission its own study of the same chemicals. The CMA study confirmed that a majority of such chemicals lack necessary screening data in the public record (although it put the figure at 53% rather than EDF's 71%). CMA then began talks with EDF and the U.S. EPA.

"EDF is having very active discussions with individual companies," Roe said, "and we hope to be able to announce more progress in our next round of ads. The spotlight on this issue will get progressively brighter. We are also encouraged by the preliminary interest from the manufacturers' trade association, although it's not yet clear whether they will take any role in testing chemicals on behalf of their members."

Powerful Wildlife Documentary To Air on NBC Saturday, January 24

EDF highly recommends *Don't Say Goodbye*, a National Geographic special airing Saturday, January 24, at 8 p.m. Eastern and Pacific Time on NBC. The program follows two wildlife photographers, Susan Middleton and David Liittschwager, as they travel to photograph some of America's rarest and most imperiled species, in an effort to bring their plight into sharper focus.



An endangered red wolf.

Just as powerful as their stunning photographs are the stories of the people they encountered who are dedicated to saving species from extinction. These fascinating individuals range from a former East Los Angeles gang member who now works to save a rare butterfly to biologist Dr. Thomas Eisner, who goes "chemical prospecting" in Florida for medicines derived from nature.



Susan Middleton and David Liittschwager prepare to photograph a Presidio manzanita in San Francisco.

Roy Eisenhardt

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