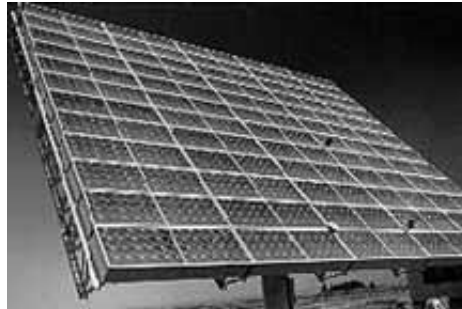


Many Americans Soon Can Choose "Green" Electricity

On January 1, when utility restructuring begins in California and parts of New England, 30 million customers will be able to choose their electricity supplier. Before long, many other Americans may also be able to choose power at a modest premium from environmentally preferable sources such as wind, solar, geothermal, and biomass.

Although few people today have access to "green" power options, strong customer demand will make green power more widely available at increasingly competitive prices. No energy source is completely impact free, but cleaner energy choices would benefit the environment. Most important, green electricity can reduce air pollution. Fossil fuel-burning power plants are a major source of air pollutants and the largest source of greenhouse gas emissions in the United States.

In six pilot projects around the U.S., 20% of electricity customers voluntarily paid more for power generated from renewable



Department of Energy/NREL

Efficient solar panels require little maintenance and provide electricity without emitting air pollution or greenhouse gases.

resources. If 20% of customers in newly competitive markets chose renewable power for half their electricity, it would be the same as closing eight mid-sized coal-fired power plants—a modest but important step.

Getting the Facts to Make Good Choices

Until now, people have had no choice but to buy power from their local electric

monopoly, and few thought about how the power was generated. With a choice of suppliers, however, it becomes crucial that each supplier disclose the source of its electricity and what emissions were produced.

"Suppliers will try to market their products environmentally," said Karl Rábago, EDF Energy program manager. "Unless all suppliers follow the same standard of full disclosure, customers may be confused or even deceived."

EDF's Energy program is working to secure adequate disclosure standards and labeling in California and at the national level.

EDF seeks to create strong markets for green energy by shaping regulatory and legislative policy and advising new power companies.

In New England, EDF is working with newly formed ReGen Technologies to develop its business plan to offer environmentally preferable electricity in New England

Continued on page 5.

British Petroleum to Take Action on Climate Change

Breaking new ground, the head of one of the world's largest oil companies has called climate change a matter for public concern and pledged his company will seek solutions to it. John Browne, CEO of British Petroleum (BP), said industry must play "a positive and responsible part in identifying solutions to an issue which is potentially very serious." EDF, Greenpeace, the World Resources Institute, and other environmental groups had discussed global warming with British Petroleum prior to Browne's announcement.

BP's action plan to curb global warming, outlined by Browne, includes steps where the company will:

- increase investment in solar and other



John Browne (left), CEO of British Petroleum, talks with EDF economist Dr. Daniel J. Dudek.

alternative energy technology;

- set targets for further energy efficiency in all BP operations;
- work with EDF to develop a voluntary emissions trading system for greenhouse gases, modeled on the system already in use in the U.S. for sulfur emissions;
- take part in "joint implementation" projects with developing nations to reduce or offset greenhouse gas emissions under the Rio Earth Summit agreement.

EDF economist Dr. Daniel J. Dudek, who spearheaded talks with BP, praised the action. "This statement by an international energy company the size of BP has the potential to shift how government officials

Continued on page 3.

Inside

3 Cleaner and Greener

EDF's Great Printers Project is making pollution prevention standard practice among printers in the Great Lakes region.

4 Are Top-Selling Chemicals Safe?

We lack basic health data on more than 2,000 widely used chemicals. Are we at risk? No one knows.

6 Service, Preyer

Former tennis star Jane Preyer has joined the environmental team.

7 Old McDonald Had a Fish

Fish farming is the fastest growing segment of U.S. agriculture and an increasing source of protein for the world. Is it safe for the environment?

A Partnership to Save an Imperiled Forest and its Wildlife

Weyerhaeuser Company, North Carolina's largest private landowner, is working with EDF to protect and manage the 11,000-acre Parker Tract, the last remnant of a coastal swamp forest that once covered 100,000 acres. A major goal is to preserve critical land habitat and water quality and restore wildlife populations, including the black bear, grey fox, threatened reptiles and amphibians, and many threatened and declining migratory songbirds.



Grey fox

Chip Henderson/Picturesque

The science-based management plan calls for Weyerhaeuser to cut no trees in some portions of the swamp hardwood forest. In other forest areas, trees may be cut *only* if future research demonstrates that doing so benefits certain rare songbirds and other ecological values. In limited areas, Weyerhaeuser will conduct sustainable timber production.

The full report, *A Partnership in Conservation*, is available for \$10 from EDF Publications, c/o the Washington office.

Coalition Thwarts Legislative Attack

Led by EDF, a coalition of environmental, recreational, and sportsmen's groups turned back attacks on the environment by the Colorado legislature. Bills passed by the legislature would have increased pollution from coal-burning power plants, opened miles of wilderness roads to off-road vehicles, and made it harder to enact local land-use rules to reduce sprawl.

Communicating through the news media and using the new Colorado Action Network—a high-tech phone, fax, and e-mail network that lets activists contact their state legislators quickly on urgent issues—

the coalition helped influence Governor Roy Romer to veto the bills. EDF also challenged a bill that would have weakened the state's power to protect clean air in wilderness areas.

Coalition Blocks Oil Pipeline

EDF's Pollution Prevention Alliance worked with Illinois grassroots groups, including Communities Against the Pipeline and McHenry County Defenders, to help stop a proposed crude oil pipeline from western Canada to Chicago. EDF provided expert testimony before the Illinois Commerce Commission on environmental, technical, and regulatory concerns about oil pipelines. The Commission decided there was no need for an additional crude oil pipeline to supply Chicago area refineries and will not grant the pipeline company eminent domain over portions of private land for a pipeline that likely poses a serious threat of pollution.

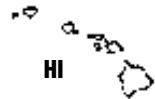


Hawaii Acts to Protect Species

Hawaii became the first state to pass legislation authorizing "safe harbor" agreements to conserve endangered species. Developed by EDF, the safe harbor approach allows property owners to manage their land to benefit endangered species, without fear of incurring additional legal liability.

Hawaii has far more endangered species than any other state—more than 300—but only four of these species have been improving in status. The old Hawaiian law appeared to be stringent but lacked the tools for successful protection on private lands, which comprise five-sixths of the state.

Soon after Hawaii acted, the Kansas legislature also authorized safe harbor agreements.



Hawaiian goose

A. Morris/VIREO

Allies Defeat Bad Utility Bill

EDF teamed with a broad coalition, including Consumers Union and Public Citizen-Texas, to defeat an electric utility bill in the Texas legislature that would have increased pollution and severely limited opportunities for new clean energy companies. The bill would have favored older, usually dirtier, coal-burning plants and allowed the utilities to maintain an effective monopoly with all but the very largest customers.



EDF Project Airs on PBS Sept. 8

The Bellport, NY, community composting program featured in last November's *EDF Letter* will appear on *Planet Neighborhood*, a new public television series that looks at down-to-earth ideas and innovative technologies that people are using at home, at work, and in their communities to protect the environment. EDF general counsel James T.B. Tripp and founding trustee Arthur P. Cooley were instrumental in starting the Bellport composting program. The program will air September 8 on PBS stations in more than 20 major cities around the U.S. (Check local listings.)

Can You Give at the Office?

If you work for the Federal government, you can donate to EDF through your paycheck as part of the Combined Federal Campaign. Environmental Defense Fund is listed under "Earth Share;" EDF's code number is **0906**.

If your workplace has a payroll deduction campaign that doesn't yet include environmental groups, you may still have the option of earmarking your donation to EDF. Just write in "EDF, 257 Park Avenue South, New York, NY 10010." Please ask to have your gift acknowledged so EDF can credit your account. If you'd like to help EDF gain access to the payroll deduction campaign at your workplace, please call or write Rory Beelek at EDF's New York office.

EDF Letter

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Director's Message

A Toast to EDF's George Montgomery

If it weren't for George Montgomery, I'd have been underwater for sure. We were on the rocky edge of an Adirondack stream when I slipped on a wet spot, losing my balance. Instantly George grabbed my arm and pulled me up, safe and sound but for one soggy shoe.

George extended a helping hand repeatedly in his seven years as Chairman of EDF's Board of Trustees. He has kept me



Fred Krupp and George Montgomery

and EDF focused on "results, results, results," saying that what counts is the environmental outcome. He has consistently supported EDF's solution-oriented environmentalism and backed our courage to challenge conventional wisdom. He has led an often-opinionated Board to strongly felt consensus. Time and again, he has introduced EDF to new allies. His interests span the spectrum of EDF programs and initiatives. How does he stay current on so much?

For many years a managing director of Hambrecht & Quist in New York, George has always been ahead of the technology curve. A decade ago, before any of us had heard of voice mail, he called to say what a difference it could make for EDF's far-flung staff. Of course he was right. We installed the system and soon it was taking messages around the clock, some in languages our receptionist couldn't have transcribed.

Since joining the Board in 1981, George has helped EDF grow from a budget of \$2.6 million to more than \$23 million today and helped bring about many of our most lasting achievements. Now that he has returned to his native San Francisco, he is as active a Trustee as ever, introducing EDF to more new constituencies and working to involve more young people in EDF.

Thank you, George!

Fred Krupp

Project Makes Printing Cleaner and Greener

Pollution prevention is becoming standard business practice for printers in the Great Lakes region as a result of the Great Printers Project, a four-year partnership initiated by EDF's Pollution Prevention Alliance. Working with the Council of Great Lakes Governors and the Printing Industries of America, the Alliance created a self-sustaining effort in several states and a nationally respected model.

"The approach," explained EDF economic analyst Carol Andress, "has been to challenge printers, as well as their suppliers, purchasers, and regulators, to work toward preventing pollution *before* it occurs. And these challenges are being met."

Four Great Lakes states have created programs to register Great Printers, who pledge to take steps such as using alternative materials that pollute less. Already 275 printers have signed up: 65 in Illinois, 70 in Michigan, 23 in Minnesota, and 117 in Wisconsin.

Regulators in Wisconsin have streamlined and consolidated their environmental reporting requirements, first for printers and now for all businesses. The new system saves costs and time by replacing many separate forms, and emphasizes pollution prevention by suggesting safer materials and procedures. Other states are pursuing similar improvements, and proposed Federal legislation would extend these reforms to all states and industries.

Cleaner printing offers important environmental and economic savings. For example, a Minnesota printing company with 75 employees reduced its ink waste substantially—saving over \$30,000 a year—and has nearly eliminated the use of volatile organic compounds, which contribute to smog.

EDF's work on the project is now being turned over to groups in the Great Lakes area and elsewhere who are continuing the tasks of changing the printing industry and the regulations that affect it.



Mark Sullivan

Bruce Fetterolf of McNaughton and Gunn, a Michigan Great Printer, carefully oversees the press run.

How to Buy Great Printing

When customers ask for better printing, printers are quick to respond. If you buy printing of any kind—stationery, newsletters, brochures, reports—you can play a critical role.

If you live in the Great Lakes region, look for a Great Printer or ask your printer to become one. Everyone can follow these six simple guidelines to better printing:

SIX STEPS TO CLEANER, GREENER PRINTING

- Ask your printers what they're doing to reduce the environmental impacts of the chemicals and inks they use.
- Choose uncoated, totally chlorine free paper with high post-consumer recycled content.
- Minimize paper use by specifying lighter-weight paper and using both sides.
- Avoid neon and metallic inks.
- Use water-based, non-chlorinated glues.
- Don't print more than you need.

Ask for EDF's guide to greener printing and paper by writing EDF Publications, c/o the Washington office, or calling 1-800-684-3322.

BP's Pledge to Act Comes at a Critical Time

Continued from page 1.

and other companies address global warming," Dudek said. "BP's recognition of the link between climate change and its causes, and their willingness to work with an environmental group to seek solutions, should be a big help."

EDF attorney Joseph Goffman added, "BP's commitment to address the climate change problem comes at a crucial time, as

governments prepare to meet in December in Kyoto, Japan, to try to reach agreement on limiting greenhouse gas emissions. The U.S. has led other nations by proposing a practical, cost-effective plan, based on the use of emissions trading, to meet the challenge. But the Administration has failed to specify reduction targets and now should build on the movement in the oil industry by committing to specific reductions."

You Can't Tell the Chemical Risks Without a Scorecard

By Dr. William Pease, an EDF scientist who specializes in toxicology, and EDF attorney David Roe, the principal authors of a new EDF study, Toxic Ignorance.

In baseball, as they say, you can't tell the players without a scorecard. For the chemicals of modern industry, the same is true: you can't tell about their safety without a scientific scorecard that gives you at least some basic stats about each one.



William Pease



David Roe

Yet even today, long after DDT and lead and PCBs and many other after-the-fact discoveries taught us that chemicals put into our environment can have disastrous health effects, there is still not even the crudest scorecard for most of the big-league chemicals being used in American commerce. The public, and those whose job is to assess the risks of chemicals in the environment, still cannot tell whether most of these chemicals are

hazardous to our health or not—much less how serious the risks might be, or whether the chemicals are actually under control.

EDF research shows that results of the simplest screening tests cannot be found, anywhere in the public record, for the health effects of nearly three-quarters of the top-volume chemicals in commercial use in the United States. These chemicals, each being sold in the U.S. in quantities of more than one million pounds a year, include many chemicals that we are likely to breathe or drink, that can build up in our bodies, that are in consumer products, and that we know are being released from industrial facilities into our air and water. Without at least basic screening tests, the public and the experts are equally in the dark.

This lack of information cripples every law that Congress and the states have passed to control toxic chemicals in our environment, and it turns every promise of chemical safety into an exercise in eye-shifting and finger-crossing. A claim of safety has to be based on facts. And the facts are simply not available.

Are we being hurt by these chemicals and their high-volume use? We don't know. In effect, we are participating in a gigantic experiment to find out, with no deadline for ending the experiment. But perpetual guinea pig status is not what Congress promised the public more than 20 years ago. Instead, it established a national policy that the risks of toxic chemicals in our environment would be identified and controlled.

To some experts, the fact that we lack the most basic facts about the toxicity of chemicals around us comes as no surprise. In the early 1980's, the National Academy of Sciences' National Research Council conducted a comprehensive four-year study, entitled *Toxicity Testing*, and found that 78% of the chemicals in highest-volume commercial use had not had even "minimal" toxicity testing. The news today is that there has been so little improvement, 13 years after that study so convincingly documented the problem.

All chemicals in high-volume use in the United States should long since have been subjected to preliminary health-effects screening, with the results publicly available for verification, so that we would have at least the beginning of an idea about what health hazards those chemicals might pose. But with so little progress for so long, it is

We are participating in a gigantic experiment to find out if we are being hurt by these chemicals.

unrealistic to keep hoping that current laws, regulations, or voluntary industry programs will produce the facts.

For the public, the only realistic alternative left is to hold the chemical manufacturers themselves directly responsible for testing their own chemicals, starting with the ones being sold in the highest volume. On July 29, EDF executive director Fred Krupp called on the heads of each of the top 100 chemical manufacturers in the U.S. to commit to finish testing of *all* their high-volume chemicals by the beginning of the year 2000, and to make the results publicly available. He asked for a commitment by the end of September. EDF plans to publicize the names of the companies that agree to test their chemicals by the deadline, and those that don't.



Comstock (photo illustration: Janice Caswell)

Americans are living in a "soup" of industrial chemicals that have not had even minimal testing for possible health hazards.

There is already international consensus on what should be included in preliminary health screening tests for high-volume chemicals. A definition was developed and agreed on in 1990 by the member nations of the Organization for Economic Cooperation and Development, with extensive participation from the U.S. chemical manufacturing industry. Using OECD estimates, the total cost would be between 1/10 and 2/3 of a cent per dollar of the top 100 U.S. companies' annual profit of \$29.4 billion, on \$230.5 billion of annual chemical sales.

The public is completely justified in expecting that major chemicals should have been health-screened *before* being allowed out in commercial circulation. It is equally justified in insisting that chemical manufacturers take direct responsibility for the chemicals they themselves are making and profiting from.

The manufacturers need to do the tests without further delay—and make the results public—whether our laws are forcing them to or not. After so long, the more sports-minded among the public might even be forgiven for standing up and shouting: "Show us the data!" Not until basic health-risk information for each major chemical is printed on the equivalent of a scorecard, and the umpire has looked it over, will the fans even begin to be able to think about settling back in their seats.

Toxic Ignorance is available for \$10 from EDF Publications, c/o the Washington office.

Major Staff Positions Filled in California and DC

Stephen W. Cochran, EDF's new Legislative Director in the Washington office, has had broad experience at the Federal, state, and local level. Cochran comes to EDF from a position as senior policy analyst in EPA's Office of Air and Radiation. He worked in the House as Legislative Director to Rep.



Stephen Cochran

Charles E. Roemer, III from 1984-87, was field director of Roemer's successful campaign for governor of Louisiana, and then served as the governor's chief of staff. Before going to EPA, he was the first director of the Lake Pontchartrain Basin Foundation, an environmental advocacy group in New Orleans.



Robert García

Attorney Robert García has joined EDF's California staff to work on transportation and water issues. García, who comes to EDF from the NAACP Legal Defense and Education Fund, helped win the recent victory against racially discriminatory bus and rail systems in Los

Angeles, in which the Metropolitan Transportation Authority agreed to pay the largest financial settlement in civil rights history (*EDF Letter*, April 1997). A graduate of Stanford Law School, where he is an adjunct professor, García recently wrote a multimedia law school casebook, *Riots and Rebellion: Civil Rights, Police Reform and the Rodney King Beating*, published on CD-ROM and on the World Wide Web at www.ldfla.org/riots.html.



Sarah Wade

Sarah M. Wade has joined EDF's Global and Regional Atmosphere program staff in Washington, bringing years of experience in utility policy and the use of economic incentives for pollution control. Wade most recently consulted on policy issues arising from deregulation of the energy industry. Previously, she worked on emissions trading with the Clean Air Action Corporation, a private firm, and for both the Massachusetts and Connecticut Departments of Environmental Protection. Wade, who holds masters degrees from Yale in Environmental Studies and in Public and Private Management, interned for EDF while in graduate school.

Citizens' "Right to Know" is Strengthened

The U.S. Environmental Protection Agency (EPA) has expanded its Community Right to Know program, which requires many industries to issue public reports on their releases and off-site transfers of more than 600 toxic chemicals. On the advice of EDF and other environmental groups, and over industry opposition, the Administration included all the industries EPA proposed: metal mining, coal mining, electric utilities, hazardous waste treatment and disposal, solvent recovery, chemical wholesalers, and bulk petroleum terminals.



Harry Connolly

Lois Epstein at a bulk petroleum terminal in Virginia.

EDF argued that these industries pose significant pollution hazards and that small facilities that do not use or release large quantities of pollutants are already exempt.

"The expansion of this Right to Know program will empower and help protect people all over America," said EDF engineer Lois Epstein, who, along with EDF attorneys Karen Florini and Kevin Mills, was instrumental in the victory. "EPA did an excellent job of identifying the types of previously non-reporting facilities where toxic pollution can pose unacceptable threats to communities."

CA Workplace Protections Upheld

In another important victory for environmental health, the U.S. Occupational Safety and Health Administration (OSHA) has affirmed states' right to establish stronger health protections than the Federal government. OSHA approved California's workplace standards, which incorporate the state's Proposition 65 and include a provision for direct citizen enforcement.

"Employers have waged a holy war against enforcement of workplace standards by workers themselves," said EDF attorney David Roe. "This is the first time it has received Federal blessing. This is a major breakthrough for workers' rights."

The stronger California standards have been working well since their initial adoption five years ago, but major industrial employers campaigned hard for Federal disapproval.

Helping to Create Strong "Green Power" Markets

Continued from page 1.

and beyond. EDF and ReGen aim to set a high standard for green power by bringing new renewable resources into use.

In Texas, EDF crafted new standards for utility-sponsored green pricing, which the Texas Public Utilities Commission has endorsed. In California, EDF staff are involved in implementing the new utility restructuring law.

In the Pacific Northwest, EDF is working with the Environmental Resources Trust, a nonprofit organization created with EDF's help, to stimulate markets for green power.

"The coming changes in the electric industry should empower customers to make informed decisions and, if they choose, to make real environmental improvements," said Rábago. "Disclosure, adequate labeling, and high standards for green power marketers are prerequisites to making the market work."

What Your Electric Bill COULD Tell You

Where your electricity comes from

Coal	55%
Oil	2%
Natural Gas	10%
Nuclear	23%
Hydropower	10%
Renewable	0%

Emissions Information (pounds per 1000 kWh)

Carbon Dioxide	1600 lbs.
Oxides of Nitrogen	2.9 lbs.
Sulfur Dioxide	3.7 lbs.
Particulates	0.35 lbs.
Heavy Metals	0.03 lbs.

Electric bills should report not only the price of electricity but also how the power was generated (based on the supplier's average historical data) and what emissions resulted. The data above are averages for the U.S. as a whole; to find out the figures for your state or region, check ENERGY at EDF's web site, www.edf.org.

Meet Jane Preyer, Head Coach of North Carolina EDF

There are a couple of paradoxes about Jane Preyer, the new director of the North Carolina Environmental Defense Fund.

One is that this solo tennis star, ranked 43rd in the world in the mid-1980's, is now a team player, immersed in EDF's collaborative approach to tackling environmental problems. The other is that Preyer—a 1993 graduate of the University of North Carolina's Master of Public Administration program—finds herself at EDF as “a generalist surrounded by experts. And I'm the first non-attorney director the office has had,” she adds, alluding to former directors Steve Levitas and Melinda Taylor.

Preyer brings to EDF a unique blend of experience and education, along with a calm and focused personal manner and a deep concern for the environment. “Most of the MPA students were going into government,” she recalls, “but a small cadre of us really wanted to work in non-profits. The two areas I felt most passionate about were human services and the environment. From childhood days of fishing on North Carolina lakes and rivers with my Dad, I developed a serious sense of stewardship.”

Preyer's father, L. Richardson Preyer, is the jurist and former Congressman who chaired the governor's Year of the Coast commission. With her mother an original board member of the NC Nature Conservancy, and her brother, Rich, the leader of a capital campaign for the Conservancy, it is no surprise that Preyer would take a professional interest in North Carolina's environment.

In 1993, Preyer was hired by North Carolina EDF as an intern for the Paper Task Force, an EDF partnership with four corporations and Duke University to stimulate

“Jane is an absolutely terrific person, dedicated to her work and to a better North Carolina.”

demand for environmentally preferable paper. “I was exposed to EDF's team approach, having scientists, economists, and attorneys work together to solve problems. We toured paper mills, examined forest management practices, and gathered lots of technical information, publishing a comprehensive report in 1995.

“Going from intern to director of the



T. Charles Erickson

After many years playing at the highest levels of competitive tennis, Jane Preyer still enjoys a friendly game when time permits.

office has been quite a path!” she says. She credits her confidence in her new position to the quality of the staff and to past director Melinda Taylor, who is now in EDF's Texas office. “Melinda encouraged a collegial approach.”

Life on the Tennis Tour

The path leading Jane Preyer to NCEDF first led her all over the world and into the highest levels of competitive tennis. She was a two-time North Carolina women's singles and doubles champion and began touring professionally after graduating from the University of North Carolina in 1976.

“The first couple of years on the tour were pretty brutal,” she recalls. “But once ranked in the top 50 to 75, you had more control over your schedule and knew you could get into the major tournaments. For me, the biggest thrill was playing Wimbledon. I played four years there and loved it.”

She also had the strong support of her family, and understandably so—all the Preyers were netters. Her biggest win may have been over Australian Evonne Goolagong, a victory heralded with pride by

her hometown paper, the *Greensboro Daily News*: “Ding Dong! Ding Dong! Jane beat Goolagong!”

Later, an elbow injury and surgery made it clear that she would not recover enough to compete at that level. A timely opening at Duke University put her in charge of the women's tennis program. Coach Preyer's teams won four Atlantic Coast Conference titles and became number five in the nation.

Old friend Thomas Massengale of Chapel Hill, who as founding director of the NC Nature Conservancy has known Preyer and her family for more than two decades, says, “Jane is an absolutely terrific person, dedicated to her work and to a better North Carolina. She's very bright, very well organized, and has a wonderful, disarming, engaging style. Her style helps her to produce substantial results—especially in situations where there are strong opinions and not a lot of agreement.”

Substantial results, indeed. Preyer is particularly proud of a joint project NCEDF and Weyerhaeuser Company have just completed, a management plan that protects the last remnant of the East Dismal Swamp in North Carolina's coastal plain, saving important habitat for rare songbirds. (See article on page 2.)

Another prime interest of hers is water quality. For example, to protect water supplies—and neighbors—from eastern Carolina's burgeoning hog industry, NCEDF and eight other NC groups assembled a “hogs team” that is pushing for a moratorium on permits for large hog facilities or expansion of existing facilities. “We must move toward a different technology to handle hog waste,” she says, “one that works in our landscape and economy.”

Now that Preyer is, in effect, head coach of NCEDF, the competitive spirit may have yielded somewhat to the collaborative, but her energy and interests seem to have brought her to the right place at the right time.

Perhaps there is a third paradox for Preyer at EDF—she is still surrounded by tennis players, including a cadre of tennis enthusiasts and doubles partners throughout EDF. So keep an eye on EDF's new leader in the Old North State, and expect a lively volley from player, coach, and conservationist Jane Preyer—a proven champion.

By Bland Simpson

Old MacDonald Had a Fish

By EDF ecologist Dr. Rebecca J. Goldberg, who is studying the promise and environmental impacts of the growing aquaculture industry.

Most Americans would be surprised to discover that their last seafood meal may have been raised on a farm, not caught at sea. Declines in wild fish populations and growing demand for seafood have made aquaculture the source of an increasing portion of seafood in the U.S. and the world. Although precise figures are not available, virtually all the catfish and trout, roughly half the shrimp, and approximately one-third of the salmon consumed in this country are raised by fish farmers. Other aquatic species, including hybrid striped bass, crawfish, and clams, are also being raised in tanks, ponds, and coastal bays.

Fish and shellfish are now farmed in every state and U.S. territory, and aquaculture is the fastest growing segment of U.S. agriculture. Production has increased 24% by weight and 60% in market value over the last decade. Aquaculture's rapid growth in the U.S. mirrors its phenomenal growth worldwide. About 25% of all fish consumed by humans worldwide is now farmed.

The growth of fish farming has often come at a price. EDF has focused on a number of controversial issues involving aquaculture in the U.S. For example:

- In Washington State, roughly 250,000 Atlantic salmon have escaped from fish farms since 1991, many of them later turning up in local rivers, where they may spread disease and compete with dwindling runs of wild native Pacific salmon. A Washington pollution board recently ruled that escaped Atlantic salmon are a "living pollutant" that can be regulated in the same manner as waste from other industries.

- In Texas, environmental degradation from shrimp farms has spurred lawsuits by grassroots groups. In the mid-1980's, Texas officials promoted coastal shrimp farming as a form of economic development and exempted shrimp farms from state requirements for wastewater discharge permits. Discharges of untreated shrimp sewage and epidemics of foreign shrimp viruses on farms may be harming local estuaries. EDF is working with a coalition of coastal residents, recreational fishermen, and others to get major changes in Texas shrimp farm operations and regulations.

Aquaculture is often promoted as a way to relieve pressure on overexploited wild fisheries, but it can actually result in a *net loss* of fish and protein. Many farmed fish, such as salmon, trout, and shrimp, are wholly or partly carnivorous. Feeding them can require catching more fish from the ocean than are ultimately produced on the farms. About three to five pounds of wild fish, for example, are required to produce one pound of farmed salmon.

Better Fish Farms

Aquaculture need not harm the environment, however, and some forms of fish farming are inherently less polluting than others. For example, farming of filter-feeders such as clams, oysters, and other mollusks actually cleans the water. For other farmed species, there are various technologies and practices available to reduce or even eliminate environmental problems caused by aquaculture.

EDF recommends several policies needed for an aquaculture industry that is both environmentally and economically sound. These include:

- Water quality standards for fish farm effluents must be established and enforced by the states and EPA.
- Better standards and regulations are needed to prevent the introduction and spread of fish diseases from farms to wild fish populations.
- Fish farmers should adopt non-lethal predator control programs, rather than shooting predatory birds. Fish farmers legally killed 51,500 birds between 1989 and 1993, including about 10,000 great blue herons.
- Government and private research and promotion programs should favor closed, recirculating aquaculture systems, which clean and reuse their water and prevent the escape of farmed fish.

What's a Person to Eat?

Fish farms, like commercial fisheries, vary in their environmental impact. Consumers generally cannot tell where their seafood came from unless the market provides this information. Still, a few simple rules can help guide consumers:

1. Carnivorous farmed fish such as *salmon*, *trout*, and *shrimp* are fed a diet high in fishmeal and oil. Consumers can relieve pressure on wild fisheries by eating predominantly herbivorous fish, such as *catfish* and *tilapia*, that require little or no fishmeal in their diet.



Harvesting salmon at a fish farm.

New Brunswick Dept. of Fisheries and Aquaculture

2. Farming of *clams*, *mussels*, *oysters*, and *scallops* does little environmental harm. These mollusks require no added feed and actually benefit the environment by cleaning water.

3. *Shrimp farming* tends to be highly polluting, and most shrimp farms are located in developing countries, where their construction often destroys valuable coastal habitat such as mangrove forests. Most *wild-caught shrimp* also come at a high environmental price. The shrimp fishery has the world's highest "bycatch" rate, averaging about five pounds of marine life killed for each pound of shrimp harvested. Notable exceptions are the Northern shrimp fisheries, such as in Maine, which have low bycatch rates.

When deciding what's for dinner, shoppers can also look beyond the fish counter. A diet high in grains, fruits, and vegetables tends to be a more efficient use of resources—and healthier—than a diet high in animal protein.

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- **Life income. (The rates just went up!)**
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- **A charitable deduction.**
- **Our deep appreciation for your generous support of our shared mission.**

For information, please contact
Anne B. Doyle, Dir. of Planned Giving,
EDF, Box 47, 257 Park Avenue South
New York, NY 10010 (212) 505-2100.

EDF Oceans Attorney is Named To Fishery Management Council

EDF attorney D. Douglas Hopkins has been appointed to a three-year term on the New England Fishery Management Council, one of eight regional councils that manage the nation's fisheries along with the National Marine Fisheries Service. Hopkins, manager of EDF's Oceans program, is the only representative of an environmental organization serving on any of the regional councils.



T. Charles Erickson

D. Douglas Hopkins

Hopkins thanked the many national and regional environmental groups that backed his nomination. He also received support from sport fishing groups, including the Recreational Fishing Alliance; commercial fishermen; members of the academic community; and several members of Congress, including Congresswoman Rosa L. DeLauro of New Haven.

"The challenge in joining the Council," said Hopkins, "will be to help create lasting solutions to stop overfishing and rebuild depleted fish populations. We must return New England's valuable and historic fishing grounds to environmental and economic health."

EPA Wins New Soot and Smog Limits

In a major victory for public health and the environment, EPA Administrator Carol Browner has announced more protective standards for airborne particulate matter and smog. EDF thanks the thousands of EDF members around the country who sent messages to Washington urging the new standards.

"Despite an unprecedented assault by industry groups," said EDF executive director Fred Krupp, "the Administration has come out clearly on the side of millions of American children and elderly who suffer from respiratory problems. Carol Browner deserves special praise for standing by America's children during these withering attacks."

The new standards are not yet final. Industry groups are preparing a fierce campaign to get Congress to disapprove them, and legislation to delay them for several years has already been introduced. EDF may be asking for members' help again.

Not only must the standards survive in Congress, but EPA must also develop an effective implementation plan. EDF has proposed workable implementation measures to help meet the standards and ensure that they achieve needed pollution reductions.

Longest Tenured Employee Retires

Violet Paczka, a staff member for 27 of EDF's 30 years, retired in July. For the last 24 years, she was secretary to EDF general counsel James T.B. Tripp, where she became famous as "the fastest living typist." Vi came to work for EDF in 1971, shortly after the group moved into the 100-year-old farmhouse in East Setauket, NY, that



Kem Levinson

Vi Paczka on her last day at EDF.

would be its headquarters until 1977. When EDF then moved to New York City, Vi began a daily 100-mile commute on the Long Island Railroad. Vi holds a lot of EDF history in her memory; she will long remain in ours.

Joanne Woodward Will Herald "America Recycles Day" Nov. 15

Joanne Woodward will star in TV, radio, newspaper, and magazine ads developed for America Recycles Day, to be celebrated Saturday, November 15. Both Ms. Woodward and the advertising agency McCann-Erickson donated their services. In the past year the EDF-Ad Council recycling campaign received a record \$46 million of donated ad time and space to promote recycling and recycled products.



Roberta Desmond, EDF public service director, and Kenneth Dowling, senior vice president of McCann-Erickson NY, developed the new Ad Council campaign.

EDF members can help get the word out by asking broadcasters and publishers in their area to use the "Buy Recycled" ads, available to media outlets from the Ad Council (800-933-PSAS). More than 40 states are participating in America Recycles Day activities on November 15.

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