

Monarch Butterfly Deaths Linked to Gene-Altered Corn

In May, *The New York Times* published a startling editorial headlined, "A Warning From the Butterflies." It reported Cornell University findings that pollen from genetically engineered Bt corn, when eaten by monarch butterfly larvae, killed 44% and stunted the rest. Biotechnologists designed Bt corn to continuously produce its own pesticide.

More than 20 million acres of Bt corn were planted in the United States this year and, as the *Times* noted, the Corn Belt happens to be prime habitat for monarchs. Other species at risk may include the declining regal fritillary and the endangered Karner blue butterfly.



J. Contreas Chace/International Stock

Pollen shed by Bt corn at prime feeding time for Monarch butterfly larvae is a serious threat to the colorful species.

Short for *Bacillus thuringiensis*, Bt is a bacterium often applied to crops by both organic and conventional farmers when insect larvae become a problem. Bt paralyzes the caterpillars' digestive tract, causing them to starve to death. This form of Bt breaks down rapidly. When Bt is used properly, insects have little opportunity to develop resistance to it and it causes little harm to other species.

Not so with Bt corn, which releases Bt continuously. This could quickly create resistant insects and destroy the effectiveness of Bt for insect control in organic and conventional farming.

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Fishery Council Recommends "Closed Areas" in Gulf

In July, the Gulf of Mexico Fishery Management Council adopted a proposal to close two fishing areas off the west coast of Florida to protect the imperiled gag grouper. If the National Marine Fisheries Service approves the plan, it will be the first time fishing areas in the Gulf region have been closed to help a depleted fishery recover.

The two sites—one 95 miles west of Tarpon Springs and the other 50 miles south of Panama City—will help ensure the survival of valuable commercial and recreational gag-grouper fisheries. The tasty fish, sold under the more palatable name "black grouper," is an important part of the Gulf's \$40 million annual reef fish harvest. It is the region's third-largest fishery in economic value, after the shrimp and shellfish fisheries.

Florida State University scientists Dr. Felicia Coleman and Dr. Chris Koenig have studied gag grouper in the deep waters off the west coast of Florida for more than a decade. They found that the percentage of males has fallen precipitously, from about



Tom Needham

Fishing boats in Panama City, Florida, 50 miles north of one of the areas closed to protect gag grouper.

20 percent in the late 1970's to one to two percent today, probably because males are easy to catch near spawning sites.

To halt the decline of gag grouper, Coleman recommended that the Gulf Council, of which she was a member, should close a total of 423 square nautical miles to fish-

ing. The Council originally approved this larger closure in March, but the decision provoked an outcry from the fishing community. "Within two months, the Council decided to reverse itself," said EDF economist Dr. Pete Emerson. "Coleman was up for renomination to the Council, but after she had delivered the painful message that the fishery is in trouble, Governor Jeb Bush decided not to include her on his list of nominees."

EDF Supported Scientists' Position

EDF fisheries biologist Pam Baker testified in favor of the closing. "There were only a few environmentalists speaking out in favor of the university scientists' position at the time," she said, "perhaps because the idea was thought to be so unpopular that it had no chance of succeeding. But in fact, it is the only viable option short of shutting down the fishery completely."

EDF's Member Action Network un-

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As the evidence of global warming mounts, so does denial, according to *New York Times* columnist Bob Herbert.

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The massive Chad-Cameroon pipeline would threaten people and their environment.

EDF Pressure Helps to Win Some Protection for New England Cod and Flounder Fisheries

In June, the New England Fishery Management Council and the National Marine



Sara Gray/Tony Stone

New conservation measures should help protect New England cod and yellowtail flounder from scallop dredges.

Fisheries Service opened part of one of the three large closed areas in Georges Bank and southern New England to scallopers. Scallopers had wanted access to all three areas, while conservationists feared that any opening would harm fish habitat and fish stocks.

Fortunately, Area II's opening was accompanied by conservation measures advocated by EDF and other groups, which seem to be working. These include blocking scallopers from dredging in the northern half of Area II, which contains an important cod nursery; a cap on yellowtail flounder bycatch, and a mandated increase in scallop dredge mesh size that allows more flounder to escape. Also, at least 25% of scallop fishing vessels in

Area II must carry observers who verify levels of flounder bycatch.

"As the scallop fishery shifts toward using closed areas as the principal management tool, it will be critical to continue to identify and protect important habitat from scallop dredges," said EDF attorney Douglas Hopkins, who is a voting member of the New England Council. The Area II scallop fishery will close in January unless the cap on yellowtail flounder bycatch is reached earlier. Regulations for next year's fishing season are still being developed.

Flexible Pricing Could Cut Maryland's Traffic Tangles

The Maryland Department of Transportation has begun a study to evaluate how "value pricing" on the state's key highways might cut traffic congestion and air pollution. The study, funded by the Federal Highway Administration, will look at High Occupancy Toll (HOT) lanes (express lanes free for carpools and open to solo drivers who pay a premium), automated high-speed toll collection, tolls that vary based on time of day and congestion, fees for entering highly congested areas, and new express transit services.

EDF Federal transportation director Michael Replogle has advocated the study and will advise the effort as a member of the stakeholder group. "Value pricing could give travelers more options, limit growing traffic congestion, and help attain healthful air quality in the Baltimore-Washington region. Experience from California and elsewhere suggests that these strategies could assure more efficient use of existing roads, reduce the need for new lanes, and assure high-speed rush-hour travel without new outer beltways," he said. The study will consider these options for corridors including I-270, the Capital Beltway, I-95, US-50, MD-210, and the Baltimore harbor and Bay Bridge crossings.

First Long Island Pine Barrens Credit Auction is a Success

Bidding was hot and heavy during the Long Island Pine Barrens Credit Clearinghouse's first auction of transfer development right (TDR) credits in August. The effort was part of a program to protect Long Island's sensitive pine barrens, which sit atop the main recharge zone for Suffolk County's drinking water supply, by steering development into designated areas. The auction sold 14 credits at record prices, giving the sellers at least as much income as if the county or state had acquired their land, but at no cost to taxpayers.

Under the program, owners of private land in the 52,500-acre core of Long Island's Pine Barrens are offered credits in return for keeping their Pine Barrens property undeveloped.

They may transfer or sell the credits to developers, who may use them to build higher-density residential and commercial developments within less-sensitive areas designated for development.

"The Long Island transfer of development rights program serves as a national model for using transferable market mechanisms to protect land, retard sprawl, and redirect growth," said EDF general counsel James T.B. Tripp, who is also the clearinghouse's chair.

To date, \$2.9 million in Pine Barrens credit transactions have taken place. The Clearinghouse continues its efforts to promote the sale of privately held TDR's in the

Long Island towns of Brookhaven, Riverhead, and Southampton.



J. Kirk Condyles

EDF general counsel Jim Tripp in the Long Island Pine Barrens.

EDF Letter

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©1999 Environmental Defense Fund, Inc.
Published bimonthly at NY, NY ISSN 0163-2566

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Director's Message

The Survival Instinct

In Washington, DC, corporate lobbyists claim that climate change is a hoax and the Kyoto Protocol is dead. Never mind that the Kyoto treaty was signed by the U.S. and more than 80 countries last year, or that greenhouse gas emissions must be reduced to prevent disruptive climate change. Many U.S. Senators, who must ratify the treaty for it to take effect, seem to be listening to these lobbyists.



Fred Krupp

Yet many of the world's leading companies aren't. I recently test drove Toyota's new Prius, now mass produced and sold in Japan. It's a hybrid, powered by a battery and a small gasoline engine that recharges the battery, so you never need to plug it in. And when you apply the car's regenerative brakes, the energy goes to the battery instead of being wasted. It drove like a gas guzzler, but gets 66 mpg! The Prius will be offered for sale in the U.S. next summer, and Honda is introducing a similar super-clean, super-efficient car soon.

The oil giant British Petroleum worked with us on a series of steps to limit BP's emissions of greenhouse gases—the pollutants believed to cause global warming. These efforts led to BP's announcement last fall that it would cut its emissions by 10% from 1990 levels by 2010. Then, Royal Dutch/Shell, the world's largest oil company, announced a similar emissions reduction commitment, affirming its support of the Kyoto Protocol.

Just this September, chemical giant DuPont announced an even more sweeping commitment to reduce its greenhouse gas emissions by 65% over the same period. In the past year, IBM, Intel, and United Technologies all announced commitments to curb or reduce their greenhouse gas emissions.

These actions came after the Kyoto Protocol was negotiated and after many of its opponents proclaimed it "dead on arrival." We have a long way to go in the battle against global warming—and against the political opponents of the climate treaty. But more than a few major companies are betting people will vote for a healthy planet, with their dollars and ballots. It's time those lobbyists and elected officials woke up and realized that the survival instinct will prevail.

Fred Krupp

Brazilian Leaders Promise Amazon Progress

EDF anthropologist Dr. Stephan Schwartzman was invited to a recent historic meeting with Brazilian President Fernando Henrique Cardoso, three ministers of state, and environmental leader Jorge Viana, governor of the western Amazon state of Acre. On this first-ever visit to Acre by an elected President, Cardoso met indigenous and environmental leaders at the Cachoeira Extractive Reserve, birthplace of slain rubber-tapper leader Chico Mendes.

Schwartzman, the only foreigner invited to speak at the two-hour roundtable discussion, emphasized the opportunity for Brazil to show global environmental leadership by supporting extractive reserves and other innovative initiatives and by taking steps to help implement the Kyoto Protocol.

Cardoso approved \$75 million in federal funds for Viana's sustainable development initiatives, and environment minister Jose Sarney promised to create new extractive reserves, as advocated by EDF and the National Council of Rubber Tappers. Schwartzman also won



J.B. Forbes/St. Louise Dispatch

EDF anthropologist Dr. Stephan Schwartzman (right) worked with slain Brazilian rubber-tapper leader Chico Mendes to establish the Cachoeira Extractive Reserve in the Amazon.

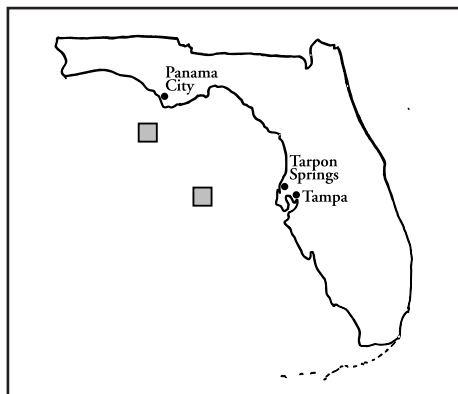
Governor Viana's support for bringing pilot emissions-trading projects to Acre.

EDF Members Helped Win Fishery Protection

Continued from page 1.

leashed a tide of letters in favor of the closing. Baker and other environmentalists met with fishermen, scientists, and Council members, and finally they reached a compromise in July to recommend closing two areas of 110 square nautical miles each.

This is the recommendation that must now be approved by the National Marine Fisheries Service and the Secretary of Commerce. EDF will be working hard to prevent any backsliding during the approval process.



Closing two fishing areas (above) in the Gulf of Florida's west coast would help save the valuable gag grouper fishery.

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New York Times Columnist Asks, 'Hot Enough for You?'

By Bob Herbert

We can do it. We can keep our heads buried in the increasingly hot sand until we're all as crisp as french fries.

Or we can try to raise our collective consciousness and do something about global warming.

The dangerous warming of the planet Earth is already under way. Forget for a moment this summer's extreme heat and the threat of severe drought hovering over large sections of the United States. No conclusions about climate can be drawn from a single midsummer hot spell, not even from a heat wave that killed close to 200 people in the last couple of weeks of July.

But consider that the Earth's average temperature in 1998 was the highest on record. And consider that 1998 was the 20th consecutive year that the Earth's surface was warmer than its recent long-term average, which is the average for 1961



Vic DeLucia/New York Times

In 1992, a strong Nor'easter breached Long Island's Westhampton Beach and damaged 85 houses. With global warming, such powerful storms may become more frequent.

through 1990.

Moreover, as *The Times's* William K. Stevens wrote last December: "Seven of the 10 warmest years on record have occurred since 1990 and the other three occurred after 1983. Most recently, new monthly high temperature records were set in each of the 18 consecutive months ending in October 1998."

In an interview this week, Dr. Michael Oppenheimer, chief scientist of the Environmental Defense Fund, said, "The world we are going to live in over the next 30 to

40 years will be different climatologically than the world has been in the whole history of civilization."

By different, he means warmer. You can count on earlier springs, longer and hotter summers, more air pollution, more droughts, and more heat-related health problems and deaths. And you can count on the oceans rising.

"The reason for the rise in sea levels is twofold," said Dr. Oppenheimer. "Increasing temperatures cause mountain glaciers to melt. That adds water to the ocean. That's happening already. Almost all glaciers worldwide are melting. We don't know what's happening near the poles, but in the regions between the poles, almost all glaciers are melting.

"Number two, water expands when it's heated, like most fluids. So the combination of those factors will cause sea levels to rise. Partly because Earth has already warmed over the last century about a degree, sea level has already risen somewhere between 4 and 10 inches. That may not sound like a lot, but on a typical East Coast beach, if you raise sea level one foot, 50 to 100 feet of land becomes permanently submerged.

"The projected sea-level rise for the next century is anywhere from one foot to three feet. There's not much doubt about this part of it. Big chunks of Long Island, New England, New Jersey, right down the East Coast, are going to simply erode and disappear underwater."

There are many factors that can contribute to the warming of the globe, but most scientists are convinced that an enhancement of the naturally occurring greenhouse effect—an enhancement caused by human activity—is a big contributor now.

"Certain gases that exist naturally in the atmosphere, like water vapor, carbon dioxide, methane and even nitrous oxide, which you know as laughing gas, keep the Earth warmer than it otherwise would be, because they are transparent to sunlight, but they trap heat that would otherwise escape into space," said Dr. Oppenheimer.

"Because of that greenhouse effect, Earth is about 60 degrees Fahrenheit

warmer than it would otherwise be. Without the natural greenhouse effect, Earth would be a frozen desert."

The problem, of course, is that various human activities in our era of indus-



Tom Truitt

EDF scientist Dr. Michael Oppenheimer with Dr. Janine Bloomfield, lead author of *Hot Nights in the City*, a report on the consequences of global warming and sea level rise in the New York City area. The report is available for \$10 from EDF Publications, c/o the Washington office, or free online at www.edf.org/hotny.

trialization are causing a buildup in the levels of some of the gases, particularly carbon dioxide, which results from the burning of coal, oil and natural gas. As more and more of the gases build up, more and more heat is trapped by the atmosphere.

We could get this problem under control, but that would require political leadership and a fair amount of willpower—two qualities that currently are in spectacularly short supply.

So we'll wait. Not enough people dying yet, and not enough property destroyed. We'll keep our heads in the blazing hot sand until we actually feel the flames of a full-fledged catastrophe.

Celebrate Recycling on Nov. 15!

On Monday, November 15, communities across the country will celebrate the third annual America Recycles Day, highlighting the environmental benefits of recycling and buying products made from recycled materials.

To find out what's happening in your area and how you can participate, call EDF member services at 1-800-684-3322 or go to www.edf.org/more/10502.



Cleaner SUV's and Gas Could Be Just Down the Road

EDF is calling on the U.S. Environmental Protection Agency (EPA) to adopt its proposed rule to cut air pollution from cars, trucks, minivans, and sport utility vehicles (SUV's). A decision is expected by year-end on EPA's proposal, which would tighten the limits on tailpipe emissions and reduce sulfur in gasoline and diesel fuel by 90%.



Mitch Diamond/International Stock

The new standards for cleaner vehicles and fuels, if adopted, will cut pollution substantially and save thousands of lives.

Since passage of the Clean Air Act in 1970, automobiles have become substantially cleaner. But the number of miles driven annually by Americans has more than doubled, while population has increased only 33%. Worsening the situation, more Americans now drive minivans and SUV's, which legally have been allowed to emit two to three times as much pollution as cars.

These trends have slowed progress in reducing air pollution's threat to human

health. EPA has estimated that toxic emissions from cars, trucks, and buses cause up to half of all cases of cancer attributed to toxic chemicals in the outdoor air. Motor vehicles also emit 30% to 50% of the smog-causing, asthma-worsening nitrogen oxide pollution in most of America's metropolitan areas.

"EPA's new standards could have an impact similar to that seen when lead was removed from gasoline," said EDF attorney Vickie Patton. "Reducing sulfur in gasoline is not a silver bullet, but it represents one of the last easily available technological fixes to air pollution."

Like Taking 50 Million Cars Off the Road

If implemented, the new standards could cut pollution as much as if 50 million cars were removed from the road, according to a recent study by state air-quality officials. The EPA ruling would, for the first time, make SUV's, minivans, and pickups subject to the same tailpipe emissions limits as cars. Although EPA has proposed giving these bigger vehicles more time to comply, EDF argues that all vehicles should be required to meet the new clean air standards by 2006. "The longer we take to get these standards in place, the longer we force millions of Americans to breathe unhealthy air," said EDF Federal transportation director Michael Replegle.

In general, U.S. automakers support the

plan for low-sulfur fuel because sulfur reduces the efficiency of emissions-control equipment and can harm catalytic converters. Although some Western states and petroleum industry advocates oppose the proposed guidelines as expensive and unnecessary, most experts say the technology is both available and affordable. California, for example, already requires its refineries to meet the low-sulfur standards.

"This important clean air strategy is cost-effective," explained Replegle. "It will add less than \$100 to the cost of cleaner cars and approximately \$200 to the cost of cleaner trucks and SUV's." Cleaner gasoline is estimated to cost an additional one to two cents a gallon to produce.

"By adopting standards for cleaner vehicles and fuels, we can save thousands of lives," he added. "But in the long run we also need to promote smarter growth patterns and give people additional attractive transportation choices to reduce long-term traffic growth and dependence on cars."

EDF MEMBER ACTION ALERT

The decision on EPA's clean air proposal is nearing a critical point. We urge EDF members to join the campaign for cleaner air. To voice your support for strong nationwide air pollution control standards for cars and trucks and cleaner low sulfur gasoline, call the White House at 1-202-456-1414 or send an email to the White House at: president@whitehouse.gov.

Pollen from Genetically Engineered Bt Corn: A Threat to Butterflies

Continued from page 1.

Pollinated by the wind, corn produces vast amounts of pollen, which it sheds for eight to ten days between late June and mid-August. This is peak feeding time for monarch larvae, which feast on the milkweed common around midwestern cornfields.



Rebecca Goldberg

Other Bt crops, such as soybeans and cotton, are pollinated by insects and therefore much less likely to affect non-target species.

Bt corn aims to prevent infestations of the European corn borer, a species of moth.

Although the corn borer can do extensive damage, most farmers tended to live with their losses before Bt corn was introduced in 1996. Heavy infestations are unpredictable, making it difficult

to gauge whether it pays to plant the more expensive Bt corn in any given year. Indeed, although the hybrid earned growers an extra \$72 million in 1997, it cost them \$28 million last year when both corn prices and borer populations plummeted.

EDF has been working for several years to establish tough requirements by EPA for planting of Bt crops that will minimize the chances that pests will evolve resistance to Bt insecticides. EDF is now seeking protection for butterflies until more research is done on the extent of Bt corn's threat to monarchs and other species. "We'd like to see growers plant a 40- to 80-foot buffer zone of conventional corn around their Bt crop," said EDF scientist Dr. Rebecca Goldberg. "Most corn pollen settles within two dozen feet of the plant, so this would greatly cut the toxin's spread to butterfly habitat. The proposed buffers would be practical,

since many farmers already plant 80-foot circles of corn around corn fields to create tractor turning areas.

"Thirty years ago, widespread spraying of DDT to control mosquitoes almost wiped out the osprey, bald eagle, and peregrine falcon," Goldberg said. "It would be tragic if we fail to learn the lesson of DDT and devastate butterfly populations by using genetically engineered crops."

EDF MEMBER ACTION ALERT

EDF has petitioned the Environmental Protection Agency and the chemical companies that produce Bt corn to require growers to plant such a buffer next year (the petition is online at www.edf.org/more/10517). So far, EPA's response has been lukewarm. EDF members can help by writing in support of the EDF petition to: The Honorable Carol Browner, Administrator, U.S. EPA, 401 M Street, S.W., Washington, DC 20460.

Greener Clothing—Wearing Your Conscience

From the editors of *E: The Environmental Magazine*

To EDF Letter readers: In recent surveys, you've asked for more coverage of environmentally friendly products, tips for the home, and ideas on what you can do personally for the environment. Since our staff doesn't work directly on every topic, we've turned to the editors of *E*, the leading independent environmental magazine, for this new regular feature, *Green Living*. Opinions in these guest articles are those of the authors and not necessarily those of Environmental Defense Fund staff.

What's an environmentally conscious person to wear? From humanitarian concerns about fur and leather to health concerns about the toxic byproducts of manufacturing synthetic fabrics, selecting a "green" wardrobe can be a daunting task. Cotton might seem like a natural choice, but environmentalists know it's the world's most heavily pesticide-sprayed crop and it's often colored with chemical dyes or treated with formaldehyde to reduce wrinkling.

Fortunately, you don't have to go around naked to feel some kinship with the Earth. Environmental entrepreneurs are pioneering new styles of natural fiber clothing and also rethinking the whole garment cycle, from buying to washing to recycling. If your thoughts have turned to greening your closet as the millennium nears, here are some timely tips.

Think Organic Organic cotton clothes are gaining in popularity, especially among the chemically sensitive, although growing and processing cotton organically is a relatively new field. Organic producers, seeking wider recognition, are in a virtual war with the trade association Cotton Inc., which collects dues from the organic growers but refuses to let them use its widely known label.

The outdoor outfitter Patagonia has used organic cotton exclusively since 1996, partially absorbing the higher costs that are inevitable with low-volume products. According to spokesperson Hal Thompson, "We made the decision early on to lower our margins, because this was an ethical decision we made and it didn't feel fair to

pass the full costs on to the customer." Nike buys many thousands of pounds of organic cotton for its T-shirts, although it uses only 3% organic in a blend with conventional cotton. Other clothing makers, like Ecosport, blend organic cotton with tencel, a fabric made from wood pulp. It pays to carefully inspect the labels on "natural cotton" clothes, since some are made from conventional pesticide-sprayed cotton that has simply skipped some later steps in the chemical processing ladder.

Clean and Green

Though corporate dress codes can make them almost mandatory, it's best to minimize "dry-clean-only" clothes. Traditional dry cleaning is notoriously chemical-intensive, with the chief culprit being perchlorethylene, or "perc," a carcinogen and water contaminant that can cause lung damage and nervous system disorders. Perc is banned in several states and some dry cleaners, especially in California, are working to reduce their use of perc. A new alternative, professional wet cleaning, safely handles dry-clean-only clothing using water and nontoxic biodegradable soaps. For information on a wet cleaner near you, call the National Waste Prevention Coalition at 206-296-4481 or check the web listing at www.tpwn.net/page4.html. For small items, a home-washing product like Woolite sure beats the high environmental cost of dry cleaning in perc.

Give Clothes the Cold Shoulder

Wash and rinse clothes in warm or cold water, not hot. You'll reduce your greenhouse gas emissions up to 500 pounds a year for two loads a week—and you'll save money on hot water, too. If you have a clothesline, save even more by hanging clothes out to dry on a sunny day.

Facing Front Your water-wasting top-loading washing machine is costing you money. When you're ready to replace it, look for a front-loader with good performance ratings from *Con-*

sumer Reports. Front-loaders clean better, use less water and detergent, and are gentler on clothes.

New Clothes From Old Bottles

You'd look great in a jacket or leggings made from recycled soda bottles? Yes, plastic pop bottles are a major source for EcoSpun, the polyester in some Polartec, a popular and versatile synthetic fleece made by Massachusetts' Malden Mills. The bottles are ground up, then respun into a fabric that's only slightly stiffer (and a little more expensive) than virgin Polartec. Jagged Edge Mountain Gear, for instance, sells a very durable recycled Polartec jacket for \$118.



Seth Affoumado/Wellman Inc.

This toddler's snowsuit is made of EcoSpun, manufactured from 100% recycled plastic bottles.

A New Lease on Life

Here's a rule of thumb: Every time you can avoid buying new stuff, you're helping the environment. Quality clothing is surprisingly durable—just ask your tailor or cobbler! Maternity outfits and quickly outgrown children's clothes can suit a friend or sibling. Vintage clothing stores and thrift shops have bargains for the young and old, and more and more bridal shops offer wedding and formal gowns for rent. And when clothing is past its useful life for you, be sure to donate it to a charity such as Goodwill. Sadly, four million tons of clothing and other textiles end up in U.S. landfills each year. According to David Goldbeck, author of *Choose to Reuse*, even jeans with fist-sized holes in the knees are useful to clothing resellers, which use them for industrial wiping.

Hanging Around

Don't throw away those old clothes hangers—recycle them. Enlightened businesses such as Prestige Cleaners in Scottsdale, Arizona, save money by handing out "hanger caddies" to customers, paying \$1 for each caddy returned full. Prestige says it saves \$16,000 a year through the program.

With some creative choices, you won't have to sacrifice quality or style to wear your conscience on your sleeve.

By Jim Motavalli



EDF Members can use the reply form facing page 5 to subscribe to E: The Environmental Magazine, published six times a year.

Regular E features include Your Health, Eco-Home, Money Matters, Consumer News, and Tools for Green Living.

African Pipeline Would Threaten People and Rainforests

Citing serious environmental and human rights concerns, EDF last month joined African rights groups to call for a two-year moratorium on World Bank funding for the proposed Chad-Cameroon Oil Pipeline. The massive \$35 billion project, planned by a consortium of oil companies including Exxon, Shell, and the French company ELF, would establish 300 oil wells in southern Chad and build a 650-mile pipeline running, in part, through the ecologically fragile rainforests of Cameroon to an offshore oil terminal.

EDF's position on the pipeline is detailed in a new report, *The Chad-Cameroon Oil and Pipeline Project: Putting People and the Environment at Risk*, coauthored by EDF economist Korinna Horta and Delphine Djiraibe of the Chad Human Rights Association. "The project as currently designed has little chance of delivering the claimed bene-

fits for sustainable development, and it carries major risks of irreparable environmental and social disruption," said Horta.

Home to the Bakola pygmies, as well as elephants, leopards, and a wide variety of primates, the Cameroon rainforest is one of the least disturbed tropical rainforests in the world. In addition to threatening this habitat, the project, which includes construction of the offshore oil terminal, poses serious risks of groundwater contamination and oil spills. "Africa cannot afford the environmental devastation of such a project. We need help to construct, not to destroy," Archbishop Desmond Tutu has said.

Tutu's remarks were directed at the World Bank, which is expected to decide



The offshore oil terminal would be built at Kiribi (above), an area of unspoiled beaches and a thriving fishery.

Korinna Horta

later this month whether to make a \$240 million investment in the project. Experts say the Bank's involvement is critical to limit political risk and attract foreign investment to the pipeline.

Many fear that any oil revenues are likely to go into the pockets of corrupt government officials in Chad and Cameroon. Cameroon was rated the most corrupt country in the world last year by Transparency International, a respected watchdog organization, and Chad is still reeling from years of civil war.

The report concludes that the pipeline project does not address the interests of indigenous peoples, offers only meager economic benefits to the local community, lacks an oil-spill response plan, and ultimately fails to comply with World Bank environmental assessment policies.

Top U.S. Companies Switch to Greener Paper

A recent report describes changes five major U.S. companies have made in the ways they buy and use paper, benefiting both the environment and their businesses. Leading By Example: How Businesses are Expanding the Market for Environmentally Preferable Paper, was prepared by the Alliance for Environmental Innovation, a joint project of EDF and the Pew Charitable Trusts.

The five companies—Bank of America, Ben & Jerry's Homemade, McDonald's, Time Inc, and United Parcel Service (UPS)—worked with experts in the paper industry, other companies, the Alliance, and other environmental organizations to better understand their paper purchasing and supply options. The major initiatives they have undertaken include:

Using Less Paper

McDonald's eliminated 26,500 tons of packaging material from 1991 to 1998; such source reduction initiatives saved the company \$12.2 million in 1997 and 1998.

UPS introduced the first two-way reusable overnight shipping envelope in 1998, halving the amount of packaging per shipment for every envelope that is reused.

Bank of America has used electronic communications and print-on-demand technology to replace 60% of its printed forms, manuals, and other publications.

Cleaner Paper Manufacturing

Ben & Jerry's introduced an unbleached ice-cream container that replaces a white container made from paper bleached with chlo-

rine compounds. The clay-coated outside printing surface looks the same as the old one; the inside is brown rather than white. Ben & Jerry's customers have accepted this new package that eliminates the substantial pollution associated with pulp bleaching.

Time Inc. has shifted its purchasing to paper suppliers that are committed to the "minimum impact" pulp and paper mill. As one example, Time is importing between 15,000 and 25,000 tons of paper per year from a new, totally chlorine free (TCF) pulp and paper mill located in Sweden.

UPS has agreed to eliminate the use of bleached paper in all its overnight shipping packages.

Recycling and Buying Recycled

McDonald's uses recycled-content papers in almost half its food packaging.

UPS has increased the post-consumer recycled content in all its overnight shipping packaging; its express box went from 46% to 78% post-consumer content.

Bank of America's use of paper with recycled content has risen from virtually none in 1990 to 75% of the bank's paper use in 1997, with post-consumer recycled content averaging 20%.

"These companies are market and environmental leaders," said EDF economic analyst John Ruston. "The steps they have made send clear signals to paper suppliers that the environment is an important factor in their paper purchasing decisions. We hope their efforts will be a model for other companies."

A Different Kind of Gift

Charitable Gift Annuities to the Environmental Defense Fund keep on giving. They perpetuate your commitment so that we can keep the world healthy for living creatures of all kinds. They offer many advantages to you, too. With a gift of \$10,000 or more, you earn life income and receive a charitable income-tax deduction.

To learn about the difference your gift can make, please contact Anne Doyle, Director of Planned Giving, EDF, Dept. 59, 257 Park Avenue So., New York, NY 10010.

Call 1-877-OSPREYS (1-877-677-7397) or e-mail doyle@edf.org



EDF Helps Win a Visible Victory at the Grand Canyon

Just 15 miles from Grand Canyon National Park, the coal-burning Navajo Generating Station in Page, Arizona, used to emit more sulfur dioxide than the entire Los Angeles basin. Smog dimmed the vistas millions came from around the world to see.

Now, with the installation of the last of the scrubbers in the plant's three 770-foot smokestacks, visitors to the Grand Canyon will enjoy a more breathtaking view. It is the culmination of an effort EDF helped



The Navajo power plant.

lead for 17 years.

It began in 1977, when Congress amended the Clean Air Act, requiring the Environmental Protection Agency (EPA) to clean up haze at national parks. Five years later, when little progress had been made, then-EDF attorney Robert E. Yuhnke sued EPA to force the agency to take action.

Subsequently, attorney Christine Shaver, then with the National Park Service and later with EDF-spurred the Service to put a chemical tracer in Navajo's smokestacks. The experiment fingered the plant as a significant source of the haze impairing visibility at the Grand Canyon.

EPA then brought together represen-



Richard Hackett/International Stock

The fabled long-distance vistas of the Grand Canyon may again become reality.

tatives from the power plant, EDF, and the Grand Canyon Trust. Together they hammered out a plan to remove 90% of the sulfur dioxide from the Navajo's plant emissions at a lower cost than an earlier EPA proposal.

Still, the price tag was in the millions. When a major power customer sued, EDF attorney Vickie Patton, who was then with EPA, successfully defended the cleanup plan.

Last month, the completion of the scrubber project was marked with a ceremony at the Navajo plant. "This is a huge victory for the protection of scenic vistas in our national parks and wilderness areas," said Patton. "The good results for the Grand Canyon should speed protection for other treasured areas."

Costa Rica: Nature's Treasure-House

February 18-28, 2000



Join EDF Members on this 11-day natural history safari to Costa Rica, a country of great geographical and biological diversity, led by EDF founding trustee Charles F. Wurster.

Visit prime wildlife habitat, including the **La Selva Biological Research Station** in the Caribbean tropical lowland rainforest; **Braulio Carillo**, a montane rainforest park where an aerial tram puts you in the forest canopy; and **Santa Rosa**, a rare tropical dry forest and Costa Rica's first national park on the Pacific Coast. See dazzling hummingbirds, tanagers, toucans (left), monkeys, and more at **Monteverde Cloudforest**, cloaked in mists.

Trip Fee: \$2,595 per person, double occupancy (plus air fare). For a detailed itinerary or information, please contact:

Betchart Expeditions, Inc. • 17050 Montebello Road • Cupertino, CA 95014 • 800-252-4910

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Colorado Electric Customers Can Make the Switch to Clean Wind Power on New Web Site

EDF has long supported clean power generation and cleaner electric alternatives for consumers. In Colorado, such access is now easier than ever. The Land and Water Fund's Community-Based Campaign for Windpower has launched a web site that allows the state's electricity users to make the switch to wind power online (see www.edf.org/more/10519). EDF members are encouraged to log on and explore wind-generated electricity for themselves.

The site includes an interactive "environmental



Colorado's Ponnequin wind farm makes "greener" electricity.

benefits calculator" that shows how clean power can benefit the planet. For example, switching to 100 kilowatt hours of wind-generated electricity each month is comparable to planting a half acre of trees, or not driving your car 2,400 miles. According to the Land and Water Fund, nearly 14,000 Colorado residents have already signed up for wind power.

"EDF has worked for years to help create a market for green electricity around the country," said EDF energy analyst Daniel

Kirshner. "The Law and Water Fund just made it much easier for Coloradans not only to learn about clean energy, but also to actually get it in their own homes."

Thanks in part to EDF's efforts, clean energy sources are also available to consumers in California, New Jersey, Pennsylvania, and Texas, including renewable sources such as wind, solar, geothermal, biomass, and improved hydroelectric generation.

New Texas Plant Will Add Power But Not Pollution

The Lower Colorado River Authority (LCRA) and Calpine Corporation, an independent power producer, are joining forces to improve air quality in Central Texas while meeting fast-growing regional energy demands.

LCRA and Calpine had planned to build a new 500-megawatt, gas-fueled power plant near Bastrop, Texas. After meeting with EDF energy specialists, the companies agreed to cut nitrogen oxide emissions from the new plant nearly in half, from 9 parts per million (ppm) to 5 ppm, and also agreed to fully offset these emissions with reductions from an adjacent older power plant. As a result, Central Texas will see a major increase in energy production with no net increase in emissions.

"LCRA and Calpine have set a new standard for responsible electric power generation," said Jim Marston, director of EDF's Texas office. "By building a highly efficient new plant and agreeing to offset all of its smog-forming emissions, they are providing the power our growing state needs without increasing the region's smog levels. Other developers of electric plants in Texas should follow their lead."



Jim Marston

Hog-Farm Pollution Regulations Move Ahead in Colorado

This spring, the Colorado Air Quality and Water Quality Control Commissions issued final regulations for large swine feedlot operations. The regulations will make public important information on the number and size of feedlots and their impacts on air and water quality.

Colorado hog farms will begin water quality monitoring both around their waste storage facilities and in fields where the waste is sprayed as a fertilizer. By this time next year, EDF will be able to determine from the monitoring results whether these operations are contaminating groundwater.

Hog farmers are experimenting with a wide range of technologies to control odor and emissions from their waste lagoons. "We believe that provisions in the law that promote use of the best technologies will show that there are feasible and effective methods for controlling both air pollution and odor," said Jim Martin, EDF attorney in the

Rocky Mountain office.

EDF is also helping defend the state's hog-farm regulations against a legal challenge filed by one of the biggest hog producers in Colorado. "We wish these producers were investing in compliance instead of legal delay but, overall, we are encouraged by the progress so far in Colorado," said Martin.



New regulations will give Coloradans important information about hog farms in their state.

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Editor: Norma H. Watson
Assoc. Editor: Tim Connor
©1999 Environmental Defense Fund, Inc.
Published bimonthly at NY, NY ISSN 0163-2566

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EDF Study Ranks Midwestern Oil Refineries “Mid-Grade”

EDF researchers have studied pollution data from 144 oil refineries nationwide and ranked the facilities. The Midwest’s 16 rankable refineries generally performed “mid-grade” in preventing pollution. Two Midwestern refineries, Wood River Refining Co.

(formerly Shell), in Wood River, IL (near St. Louis), and Ultramar Diamond Shamrock Corp. (formerly Total Petroleum), in Alma, MI, ranked in the bottom 20% of facilities nationwide.

The rankings were based on each refinery’s releases and transfers of toxic chemicals, including benzene, as well as volatile organic compounds (VOC’s) and sulfur dioxide, all adjusted for refinery capacity. The detailed rankings are available online at EDF’s Community Guides page (www.edf.org/communityguides), where visitors can also learn about refinery operations and pollution prevention options.

Public awareness of and involvement in reducing the harmful effects of refineries is growing, thanks in part to the Community Guides and other initiatives. For example, in April the Koch Petroleum Group agreed to work with the Minnesota Center for Environmental Advocacy to develop comprehensive environmental performance indicators for its Rosemount, MN, refinery, and to set up a web site providing public information about the performance measures. EDF engineer Lois Epstein is advising the Center in this effort.



Leverett Bradley/FPG

In a nationwide ranking, Midwestern oil refineries scored “mid-grade” for pollution prevention.

Cleveland Community Groups Map Their Neighborhoods

Two Cleveland community groups charted an exciting course this fall, completing the first-ever Neighborhood Audit Profile (NAP). The NAP program, a joint effort by EDF’s Pollution Prevention Alliance and its local partner, the Earth Day Coalition, brings inner-city communities and environmental groups together to assess neighborhood assets, problems, and opportunities.

This past summer, members of the Lee-Seville Miles Citizens Council and the Lee Harvard Community Association attended two workshops where they learned to use information tools developed by EDF and the Earth Day Coalition. These tools included EDF’s Scorecard website, the Environmental Livability Index, and the

Sustainable Cleveland Environmental Health Action Guide (for links see www.edf.org/more/10518). Participants created a neighborhood map pinpointing mass transit access, land use patterns, economic activities, and areas with pollution and health concerns.

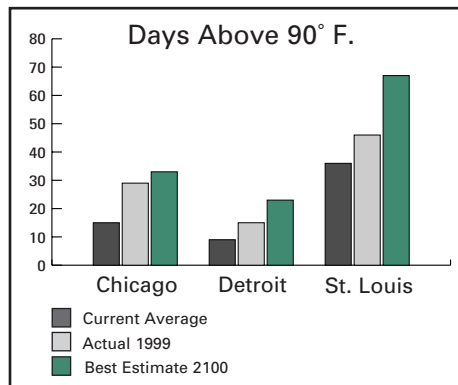
“The NAP profile will help community residents learn how to access environmental information and how to identify and understand the myriad environmental health attributes of their own neighborhoods,” said Benjamin Smith, EDF’s Pollution Prevention Alliance outreach coordinator. EDF and its partners hope this project will inspire other communities to conduct environmental audits in their own neighborhoods.

Was the Summer of 1999 Hot Enough for You?

If you thought this past summer was hot, brace yourself. Fossil-fuel burning by vehicles, power plants, and factories, coupled with deforestation and other human activities, may make this year’s record temperatures par for the course.

The Intergovernmental Panel on Climate Change, a group of more than 2,000 scientists, projects an average global warming of between 1.8 and 6.3 degrees Fahrenheit by the year 2100; the “best estimate” is 3.6 degrees Fahrenheit. To put this in perspective, a warming of this magnitude has not occurred in the last 10,000 years. Perhaps nowhere will the effect of higher temperatures be greater than in our cities (see chart), where large populations are vulnerable to heat stress and ozone smog. Increased drought in watershed areas will also affect urban water supplies.

“This year’s devastating heat waves and heat-related deaths may provide a picture of a typical summer of the future unless emissions



Three Midwest cities can expect hot days ahead.

of greenhouse gases are significantly reduced,” said EDF scientist Dr. Janine Bloomfield. “Our analysis shows that, without such reductions, many cities across the country can be expected to experience a substantial increase in very warm days by the year 2100. Children, the elderly, and those already weakened by illness are especially vulnerable to heat-related illness and even death during prolonged periods of hot weather.”

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 ©1999 Environmental Defense Fund, Inc.
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Environmental Groups Challenge Steel Mill on Chowan River

EDF, the North Carolina Coastal Federation, and the Pamlico-Tar River Foundation sued the North Carolina Department of Environment and Natural



Douglas N. Rader

The Nucor steel mill would be built on the Chowan River, less than 20 miles upstream from this tranquil spot.

Resources in June for failing to conduct a full Environmental Impact Statement for a planned Nucor Corporation steel mill on the banks of the Chowan River, home to important herring and striped bass fisheries and other wildlife. The lawsuit also challenges the department's decision

to allow construction to begin before the cursory environmental review was even completed.

The state's Marine Fisheries Commission and other state and Federal resource agencies have joined the environmental groups in questioning the department's finding that the mill would have no significant environmental impact. In fact, an advisory group comprised of fishermen and scientists has strongly encouraged the Marine Fisheries Commission to join EDF's lawsuit. The lawsuit claims that without a proper analysis of environmental impacts, the Nucor mill could threaten water and air quality in and around the Chowan River. The river already suffers from pollution from paper mills, fertilizer plants, and other sources.

"The finding that this heavy industry will be environmentally benign is not only speculative, but also defies common sense," said EDF attorney Dan Whittle. "Despite urgent requests from a wide range of experts, however, the Department of Environment and Natural Resources so far shows no signs of yielding."

As Fish Die, North Carolina Reassesses Water Quality

Early this past summer, North Carolina's Environmental Management Commission drafted a new water-quality management plan for the Tar-Pamlico Basin, as more than 10,000 fish died in a bay and creek off the Pamlico River.

EDF scientist Dr. Joseph Rudek played an important role in getting the state to re-examine its plan. His analysis revealed that the state would fall far short of its goals unless it changed its original ten-year-old plan. The state's new draft attempts to control the basin's "nonpoint" pollution sources, such as farm runoff, stormwater drainage, and leaky septic tanks.

The rotting fish bear witness to the need for change. "Whether the fish kills are

from low dissolved oxygen or Pfiesteria toxins," said Rudek, "the solution is the same—reduce the amount of nitrogen and phosphorus pollution getting into the estuary from across the basin."

The new rules, which are being re-evaluated after public comment, will be sent with any revisions to the General Assembly in spring. Following legislative review, they should be enacted in August 2000. In addition to changes in the nutrient management program, EDF supports voluntary wetland restoration on a targeted number of acres. "Wetland restoration would complement these regulatory measures, providing a more comprehensive approach to achieving water quality objectives," Rudek said.

Hog Farm Moratorium Update

In July, just before the moratorium on building large new hog farms was due to expire, the North Carolina legislature extended it two more years, until July 1, 2001. EDF and other environmental groups had pushed for the extension of the moratorium (first imposed in 1997) to protect the state's rivers from pollution caused by new factory-sized hog farms.

The extension was part of the clean-water package passed by the legislature. Unfortunately, the legislation did not address the need to phase out open-air hog-waste lagoons in favor of more effective waste management technologies, a provision EDF has pushed for. Governor Hunt, however, has introduced his own plan to replace primitive lagoons at all large hog farms within ten years. Various alternative hog-waste systems are currently being



Jim Bounds/Raleigh News & Observer

Open air hog lagoons like this one are often breached, spilling hog waste into local streams.

tested in North Carolina and elsewhere.

About 3,800 open-air lagoons containing large amounts of hog waste dot North Carolina, posing serious public health, water pollution, and air pollution concerns. Just how serious is plainly evident in the aftermath of the human and environmental devastation caused by Hurricane Floyd, which flooded more than 300 livestock operations. EDF is urging state and Federal officials to target relief funds toward relocating these and other potentially damaging activities out of environmentally sensitive floodplain areas

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Judge Orders Los Angeles To Improve Bus Service; EDF Helps Defeat Proposed Fare Hike

A Federal district court judge has ordered the Los Angeles County Metropolitan Transportation Authority (MTA) to add 248 buses within 30 days to improve bus service. The ruling came in a suit against the MTA filed by the NAACP Legal Defense Fund and supported by EDF and a statewide coalition of environmental and civil rights groups.

The suit charged that MTA had failed to carry out the terms of a 1996 agreement to add buses on overcrowded lines, lower fares, implement a county-wide bus improvement plan, and work with bus riders in the decision-making process.

EDF Helps Defeat Fare Hike

In a separate development, EDF and the coalition spearheaded the defeat of a pro-



Robert Garcia

Buses must be added to reduce overcrowding on Los Angeles lines that serve minority and low-income people.

posed fare increase, saving transit riders \$1.25 million per month and directly benefiting Los Angeles communities that can least afford to pay for public services. Fully

69% of MTA bus riders have annual household incomes of \$15,000 or less; 40% have annual household incomes of \$7,500 or less.

“People without cars and the working poor with limited access to cars do not have adequate access to jobs, loved ones, doctors, shopping, churches, parks, and other basic needs,” said attorney Robert Garcia of EDF’s Los Angeles project. “We will press MTA to follow through on its promises to invest in buses that produce less air pollution and reduce congestion, while improving the mobility of all the people of Los Angeles.”

New Marine Reserves Act Becomes Law in California

The California Sea Life Conservation Act has been passed by the legislature and signed by Governor Davis. The new law will streamline regulations in marine protected areas along the California coast and establish more coastal restoration reserves, where fishing and other activities would be banned. Such reserves have long been advocated by EDF to restore declining fisheries and protect ocean habitats.

“The act will establish scientific criteria for designating new marine protected areas,” said EDF marine ecologist Dr. Rod Fujita. “It will enable California to create the first coherent network of marine reserves in the world, providing benefits to coastal tourism, fisheries, and marine ecosystems.” Fujita worked with the Center for Marine Conservation, the National Audubon Society, and the Natural Resources Defense Council to educate policy makers on marine reserves and to recommend management measures.

A broad coalition of sport and commercial fishing leaders and environmentalists built bipartisan support for the bill. EDF activists helped pass the bill, responding to several action alerts distributed by EDF’s Internet-based Member Action Network asking them to contact the Assembly and Senate in support of the legislation.

Internet Visionary Bill Pease Is a Man of Many Talents

When analyzing obscure James Joyce texts as a Rhodes Scholar at Oxford University, Bill Pease probably did not envision himself as an online environmental leader, but that is precisely his role as director of EDF Internet projects in Oakland, California. Wishing to sow community awareness outside the ivory tower, Pease spent his early career as an environmental canvasser and grassroots organizer in towns across the United States. He later completed a Ph.D. in toxicology and now teaches chemical risk assessment at the University of California, Berkeley, in addition to his full-time work at EDF.

When he came to EDF in 1995, Pease saw an opportunity to combine his activist and academic skills with EDF’s pioneering Internet advocacy. Since joining the staff,

he has revolutionized community awareness through projects such as EDF’s Scorecard, a free online service for citizens to find out about and act on environmental threats in their own neighborhoods.

“Thousands of people use our online tools every week, faxing or e-mailing legislators and polluters alike,” said Pease. “As a result, we are righting wrongs and creating partnerships to clean up neighborhoods across the country—a far cry from my former way of knocking on a few dozen doors a night, and a farther cry from pure academic pursuits.”

Pease credits his formidable professional energy to regular long-distance swimming with his wife Laura, playing with his four-year-old son Adam, and an unwavering mission to help create a cleaner planet for families everywhere.



T. Charles Erickson

Toxicologist Dr. Bill Pease

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