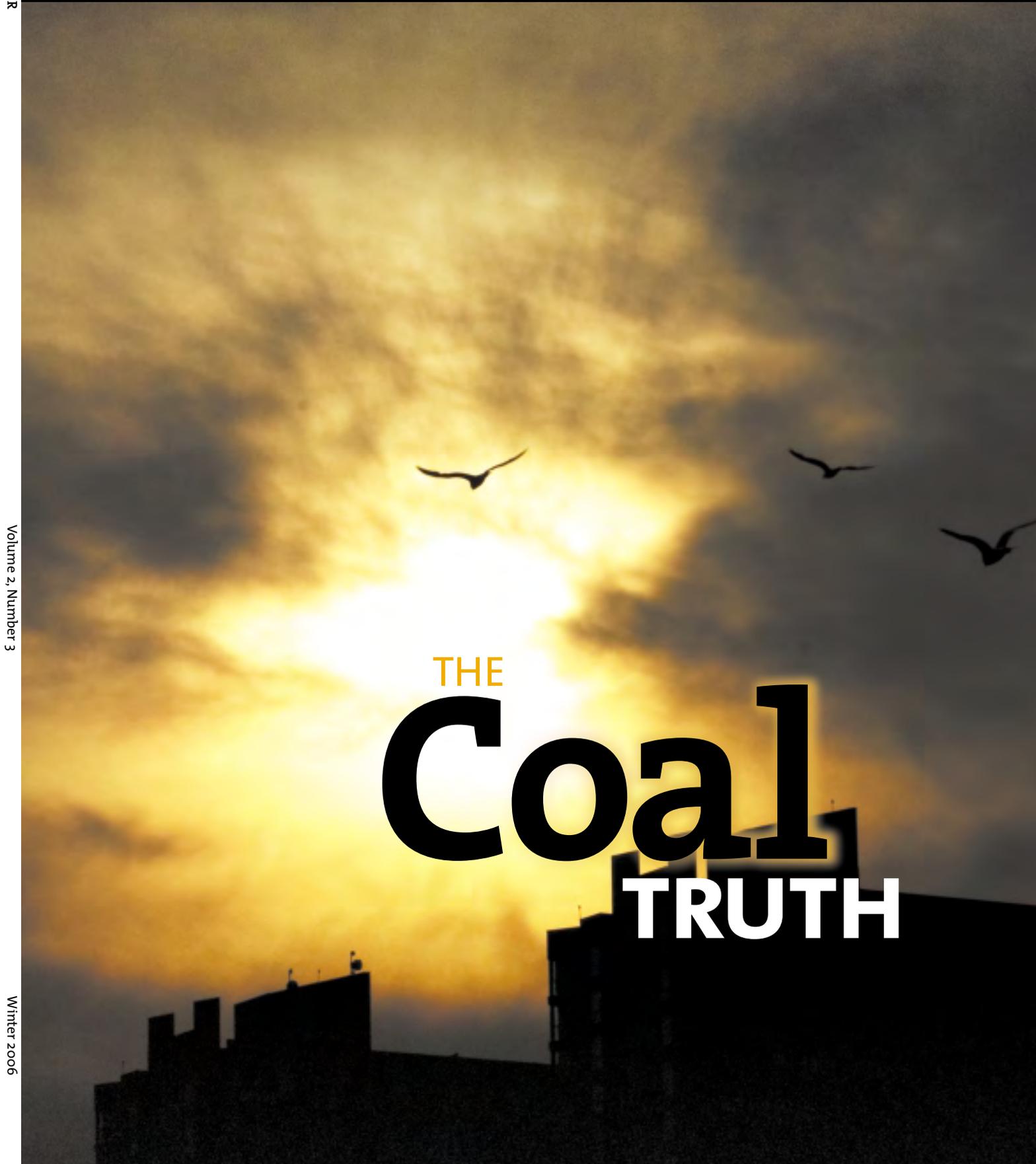


<< SENATOR JOHN KERRY >>

WATERKEEPER

Winter 2006



THE
Coal
TRUTH



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KING COAL PILLAGES Beautiful Land

In May 2002 I flew over the coalfields of Kentucky and West Virginia. From the air, I came face to face with one of the enormous costs we pay for our nation's dependence on coal. **Leveled mountains, devastated communities, wrecked economies and ruined lives—this is the coal truth.**

Half of our electricity comes from coal. In the Appalachian chain, ancient mountains are dismantled through a form of strip mining called mountaintop removal. We're cutting down these historic landscapes—where Daniel Boone and Davy Crockett roamed and the source of America's values and culture—with giant machines called draglines. These behemoths stand 22 stories, cost half a billion dollars, and practically dispense with the need for human labor.

That, indeed, is the point. I recall a conversation that I had with my father when I was 14 years old and he was fighting strip mining in Appalachia. There was no environmental issue about which my father cared more passionately than strip mining. He visited the Appalachia coalfields in 1966 and many times thereafter. He explained to me that the strip miners were not just destroying the environment, they were permanently impoverishing the region; there was no way that Appalachian communities could rebuild an economy from the barren moonscapes the strip industry left behind. "And," he told me, "they are doing it to break the unions." Back then there were 114,000 unionized mine workers in

West Virginia digging coal from tunnels and supporting the families and communities of Appalachia. Today, there are less than 11,000 miners in West Virginia taking the same amount of coal and only a fraction of them are unionized because the strip industry isn't.

Using these giant machines and 3,000 pounds of dynamite that the industry detonates in West Virginia daily—a Hiroshima bomb's worth of explosive power each week—King Coal is dismantling the ancient mountains and pristine streams of Appalachia. Mining companies blow off hundreds of feet from the tops of mountains to reach the thin seams of coal beneath. Colossal machines dump the mountaintops into adjacent valleys, destroying forests and communities and burying free-flowing mountain streams.

"I look at what they're doing and I can see the moonscape that they've created. And it's total devastation, total devastation. Nothing will ever grow back," Judy Bonds, a 52-year old grandmother from Whitesville, WV, told me. Bonds runs Coal River Mountain Watch, a community group that opposes mountaintop removal.

According to U.S. E.P.A., the waste from mountaintop removal mines has permanently interred 1,200 miles of Appalachian streams, polluted the region's groundwater and rivers and rendered 400,000 acres of some of the world's most biologically rich temperate forests into flat, barren wastelands, "devoid of topography and flowing water."

The mining industry debuted strip mining in the 1940s in the Western States to extract coal seams that lay a few feet below the surface, and therefore inaccessible through traditional tunnel mining. To extract the wealth, all you needed was a bulldozer.

In Appalachia, the mining companies adopted the process to get at deep coal seams. It was a laborsaving practice with devastating effects. Nothing was left behind, my father said—not even the hope that Appalachia's people could someday resurrect their economies or communities.

Since my father's trip, the machines and cuts have grown bigger while the work force has shrunk.

"We've watched our communities become ghost towns," says Bonds, whose family has lived in Marfork Hollow for nine generations.

"We only have one grocery store where we used to have four. And you can walk through the little town and see that most of the buildings are boarded up because the businesses failed and the young people have left the area."

It's the same story wherever King Coal sets up shop. From Appalachia to the Western states of Wyoming and Utah, the industry has permanently destroyed some of the most beautiful country on Earth, leaving behind a legacy of misery and poverty.

King Coal sends more greenhouse gases into the air and more mercury and acid rain onto our earth and produces more lung-searing ozone and particulates than any other industry. As the

nation's largest energy provider—more than half of our electricity is coal-fired—big coal is the No. 1 polluter. There is no such thing as "clean coal."

It's also the No. 1 Bush donor. Big coal and the coal-burning utilities donated \$20 million to President Bush and other Republicans in 2000, and have since sweetened the pot with another \$21 million. Their generosity has not gone unnoticed. No industry had more highly placed sympathizers in the Bush camp than King Coal.

Lobbyists and executives of coal companies had unparalleled access to Vice President Dick Cheney's task force while it was creating its new energy bill.

In 2004 I obtained the transcript of a briefing by Quin Shea, a top lobbyist for the Edison Electric Institute, the electric industry's major lobbying arm, to a closed-door conference of coal and utility industry big shots in April 2001, a month before Cheney disclosed the administration's energy plan.

Shea had received regular briefings on energy task force business from several White House insiders. The transcript of Shea's comments reveal that the Bush administration's energy task force proposals followed a line-by-line game plan devised by his coal and utility contributors.

At the conference, Shea explained that EEI was "working with the vice president" on behalf of coal. He made clear: "We desperately want to burn more coal. Coal is our friend."

He cautioned, however, that several Clean Air and Clean Water Act requirements—in his words, "coal killers"—would soon impose costly cleanup measures on fossil-fuel companies unless something was done to scuttle or delay them.

Lucky for them, Shea explained, the administration was coming to the industry's rescue. Shea refers to the Republican Party as "our party" and the administration as "we." He warns his cronies against complacency, however, telling them that in the future they should not assume that they'll have a president willing to plunder like "Bush or Attila the Hun."

The pillage of Appalachia by King Coal is the work of public officials who view public service as an opportunity for wholesale plunder. It is just one tragic legacy of this White House.

"I believe that the coal industry has found the best friend they've ever had in the Bush administration," Judy Bonds told me. "Definitely the Bush administration and the coal industry have teamed up to completely wipe Appalachia off the map. This is Appalachia's last stand, Mr. Kennedy, it absolutely is. When the mountains go, so goes our culture and our people. The problem is that I think it'll be the Bush administration that pushes the stake through our heart." **WVK**

There is no such thing as "clean coal."

Mountaintop removal coal mining site in West Virginia.



VIVIAN STOCKMAN AND SOUTH WINGS

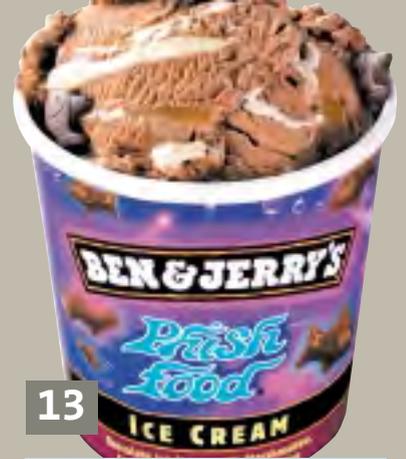
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WATERKEEPER

M A G A Z I N E



828 South Broadway Suite 100 Tarrytown, NY 10591

The official magazine of Waterkeeper Alliance

Mission: Waterkeeper Alliance connects and supports local Waterkeeper programs to provide a voice for waterways and communities worldwide.

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Bandana Malik Assistant Editor
Switch Studio Art Direction
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William Abranowicz Photo Consultant

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On the Cover



Photographer Dylan Neild's interests cover everything from portraiture to landscapes, with a particular focus on Canada and its environment. This shot is from the harbour front in Toronto at dusk. The building is called the power plant – which it was until being converted into an art gallery. Dylan is a staunch supporter of Lake Ontario Waterkeeper and Waterkeeper Alliance. His work is available on his regularly updated photoblog, dylanneild.ca.

LETTERS TO THE EDITOR

Is there anything you'd like to say? Submit your letter to the editor via email editor@waterkeeper.org or by mail to **Waterkeeper Magazine, Suite 100, 828 S. Broadway, Tarrytown, NY 10591**. Please include your full name.

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Your local Waterkeeper is the defender of the river, lake, bay or shoreline in their community, patrolling the waterway and standing up to polluters.

Waterkeeper Alliance is the international guardian of more than 150 local Waterkeepers. The Alliance supports our members with legal, scientific and policy expertise and takes their clean water campaigns to the national and international level.

Waterkeeper Alliance is the most effective protector of clean water because we act locally and organize globally.

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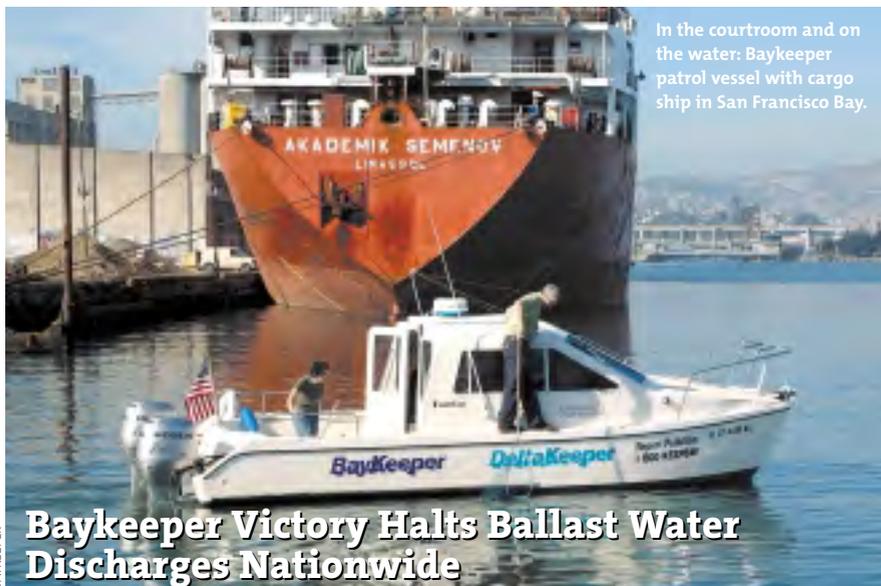


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In the courtroom and on the water: Baykeeper patrol vessel with cargo ship in San Francisco Bay.

Baykeeper Victory Halts Ballast Water Discharges Nationwide

This spring a federal court ordered U.S. EPA to stop allowing ships to dump ballast waters in U.S. ports. The decision came in response to a suit brought by Baykeeper and other environmental groups concerned about invasive species arriving through

unregulated discharges from ships. The ruling requires that ships arriving in all U.S. ports obtain a pollution permit before dumping their ballast – water which ships use for stabilization that can carry live, invasive species from other countries.

“This is a stunning victory for the environment and San Francisco Bay,” said Leo O’Brien, Executive Director of Baykeeper. “The Bay-Delta estuary is a poster child for the harm caused by invasive species carried by ballast water. It is the most invaded estuary in North America and possibly the world. Invaders like the Asian clam and the Chinese mitten crab now dominate the native species and it is getting worse: on average a new species establishes itself in the bay every 14 weeks. Hopefully, the tide is now turning.”

More than 21 billion gallons of ballast water from international ports is discharged into U.S. waters each year. Estimates of the cost of invasive species to the U.S. economy are in the billions of dollars annually.

Along with Baykeeper, plaintiffs in the lawsuit were Northwest Environmental Advocates and The Ocean Conservancy. The Earthjustice Environmental Law Clinic at Stanford University and Pacific Environmental Advocacy Center at Lewis and Clark Law School in Portland, Oregon, represented the three organizations.



Casi Calloway, renowned Mobile Baykeeper, was wed to Mr. Jarrett Grover in Mobile, Alabama on November 5th.

WATERKEEPER NUPTIALS

Waterkeepers David Whiteside, Chandra Brown, Dean Naujoks and Waterkeeper Emeritus, Rick Dove help celebrate the wedding.



CATAWBA RIVERKEEPER Speaks Truth To Wal-Mart

For the past two years Donna Lisenby, Catawba Riverkeeper, has been investigating Wal-Mart stores north, south, east and west of a proposed Wal-Mart sight in Belmont, North Carolina. Filmmaker Robert Greenwald has documented Donna’s battle with the retail giant in his new critically acclaimed film *Wal-Mart: The High Cost of Low Price*.

In 2004, the Catawba Riverkeeper testified as an expert witness in a permit hearing for the possible construction of a Wal-Mart store in Belmont. Before the hearing, Donna Lisenby traveled to Wal-Mart sites throughout the Carolinas, only to find parking lots full of birth defect and cancer-causing pesticides stored in the open. Many of the bags containing the pesticides were torn and spilling onto the ground, not far from storm drains that empty out into the Catawba River.

In *Wal-Mart: The High Cost of Low Price*, Greenwald interviews Donna, along with church leaders, local residents, family business owners and former employees, about their experience with the mega-corporation. While commenting on the “heart breaking stories” he found from people across the country, Greenwald notes, “Many of them were just too frightened to appear on camera. I hadn’t counted the incredible culture of fear that Wal-Mart has created.”

You can find the film at www.walmartmovie.com



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Want to be heard?

If you feel strongly about the issues raised in WATERKEEPER Magazine, make your voice heard. Visit

www.waterkeeper.org

to take action or to get involved with your local Waterkeeper program.



Stay tuned for the spring issue when Waterkeeper takes an in-depth look at food, farming and our sustainable future.

Florida Halts Army Corps Dredging

The Apalachicola Riverkeeper led a coalition of local, state and national environmental groups in a fight to stop the unnecessary dredging of the Apalachicola River bottom. The Florida Department of Environmental Protection has denied the U.S. Army Corps of Engineers a permit for dredging, citing irreparable harm to the river, its tributaries and the wildlife within the Apalachicola River and its floodplain.

The DEP denied the permit on the basis that the Corps had failed to remove piles of dredged sand from creeks and sloughs as required under its previous permit. The Corps also had not offered new solutions on where dredged sand should go, state officials said.

The Apalachicola Riverkeeper, in cooperation with Damayan Water Project, the Corps Reform Network and American Rivers, funded a report solidifying the scientific case against dredging. Apalachicola Riverkeeper Dan Tonsmeire says, "This historic decision sends a clear message to Congress that Florida will no longer stand for the significant adverse environmental impacts of a project with minimal, if any, economic benefit."



Chris Navitsky accepts award from Brian Houseal.

LAKE GEORGE WATERKEEPER

LAKE GEORGE WATERKEEPER Wins N.Y. Conservationist of the Year

The Adirondack Council is the lead voice preserving Adirondack Park's six million acres of forests, lakes and fresh air. This year, the Council named Lake George Waterkeeper Christopher Navitsky as its 2005 Conservationist of the Year at the Council's annual dinner in Lake Placid, NY.

Adirondack Council's Executive Director Brian L. Houseal notes, "Chris Navitsky has been an important force for environmental protection since he first began his work on Lake George. He has worked alongside Adirondack Council staff members on projects such as the Ft. William Henry Hotel reconstruction and in preventing chemical contamination in Lake George. Through it all, he has been a tireless advocate for the lake's health and for the sound planning and the well-enforced zoning needed to protect it."

Chris Navitsky became the Lake George Waterkeeper three and half years ago, after deciding to apply his engineering expertise to educate people on the importance of water quality and to help defend the resources of Lake George. Navitsky says, "It is the greatest achievement that I've ever received and has inspired me to work harder."

Past recipients of the Conservationist of the Year Award include Gov. George E. Pataki, Gov. Mario M. Cuomo and New York Times Editor John Oakes. Navitsky received an exquisite hand-carved loon for his accomplishment.

Fighting Pollution By Day, Crime By Night



UPPER NEUSE RIVERKEEPER

Dean Naujoks, Upper Neuse Riverkeeper, is honored by Raleigh Police

It was almost midnight when Upper Neuse Riverkeeper Dean Naujoks heard the sound of his Honda Accord being totaled outside of his house in Raleigh, North Carolina earlier last year. His car and two others were left in shatters when two men, fleeing from the police, raced through Dean's neighborhood at 80 mph and then lost control of the SUV they were using for a drug deal.

The two tried to run from the wreckage before police could reach the scene. But Dean, who is as intolerant of car thieves as he is of polluters, was determined to catch them. He chased the men for a block until he dove and pinned down one of the men.

Dennis Poteat of the Raleigh City Police presented Naujoks with an award for his "willingness to step forward to make his community a better place to live." The Mayor of Raleigh, Charles Meeker, Councilman Thomas Crowder and Police Chief Jane Perlov all attended the ceremony. Perlov, who grew up along the Hudson, said that she appreciated the work of all Riverkeepers, seeing parallels between the police who enforce civic laws and Waterkeepers, who enforce environmental laws.

Waterkeeper EATS



Puget Soundkeeper Clean Water Ale

Puget Soundkeeper Clean Water Ale is a light-bodied and beautifully balanced Northwest style pale ale. Using the artesian waters of the Northwest with the finest Northwest organic hops and malt, Puget Soundkeeper and Fish Brewing Co. have produced an ale with a gentle sweetness, matched by a late addition of Cascade and Northwest Brewer hops. Order some Ale from Fish Brewing; a portion of all proceeds go towards Puget Soundkeeper.

Waterkeepers Australia's Adopt-A-Mug Campaign

Through Waterkeepers Australia and local coffee shop Red Capsicum's new Adopt-A-Mug campaign, coffee lovers can indulge in their morning latte without the waste. For a \$1 deposit, customers can drink from a ceramic mug and then can pick up their dollar upon returning the mug. As program coordinator Greg Hunt says, "Good coffee is important and to drink from a proper mug is part of it."



NY/NJ Baykeeper Oyster Stew

With chilly, winter winds and crisp, cold, snowy nights, 'tis the season to enjoy a steamy bowl of NY/ NJ Baykeeper Oyster Stew, a joint project between NY/NJ Baykeeper and Bahr's Landing Restaurant. The stew is made from fresh domestic oysters, rich cream, subtle spices, and laced with cherry wine. Enjoy a bowl at Bahr's Restaurant in Sandy Hook, NJ, order it online, or pick up a can from your nearby Shop Rite, A&P or Gristedes. Ten percent of the proceeds are donated to Baykeeper's Oyster Restoration Program.



Lake Champlain Lakekeeper and Ben and Jerry's

Without a doubt, Phish Food is one of Ben and Jerry's most popular flavors, but did you know with each lick you help protect Lake Champlain's watershed? Established by the band Phish, WaterWheel Foundation donates royalties from the sale of Phish Food towards Conservation Law Foundation's Lake Champlain Lakekeeper program. Over the past five years, WaterWheel has provided about \$500,000 to Lakekeeper through their Lake Champlain Initiative.

Keeper Springs

In 1998 Robert F. Kennedy, Jr., Chris Bartle and John Hoving created a bottled water company that not only sells high-quality, refreshing water but also benefits the environment by donating all of its profits to clean water organizations. Keeper Springs is bottled in Randolph, Vermont from true sustainable springs; you can buy Keeper Springs in supermarkets throughout the New York Metro area and parts of New England.



Russian Riverkeeper Coffee



Within shouting distance of the Russian River, Sunshine Organic Coffee Roasters brews the best coffee in Sonoma County, California. The special Russian Riverkeeper Blend is a dark, full-bodied French Roast. It is shade grown, fair trade and organic, a socially responsible coffee on every front! Stop by Roaster Coffee Shop in Forestville, CA or buy some on their website at www.sunshinecoffee.com. A quarter of the royalties are donated to Russian Riverkeeper.



MDLCV Honors Chesapeake Waterkeepers

Fleischli and Chesapeake Waterkeepers at MDLCV ceremony.

The Maryland League of Conservation Voters honored the state's 10 Waterkeepers at its annual event on Tuesday, November 29. The John V. Kabler Memorial Award, one of the highest honors in the Maryland environmental community, recognizes outstanding leadership and commitment.

The Maryland Waterkeepers are Anacostia Riverkeeper, Assateague Coastkeeper, Chester Riverkeeper, Patapsco Riverkeeper, Lower Susquehanna Riverkeeper, Patuxent Riverkeeper, Potomac Riverkeeper, Severn Riverkeeper, South Riverkeeper and the West/Rhode Riverkeeper. Steve Fleischli, Executive Director of Waterkeeper Alliance, was on hand to accept the award on behalf of the Chesapeake Waterkeepers.

In addition, Maryland gubernatorial candidates Douglas Duncan and Martin O'Malley addressed critical environmental issues facing the state before 250 conservationists at the award event. Maryland Governor Robert Ehrlich was invited to attend but declined.



EPA Reverses Approval of Faulty Florida Pollution Law

After being sued in federal court by St. Johns Riverkeeper and the Clean Water Network of Florida, U.S. EPA has reversed its approval of a state rule that would legalize excessive amounts of pollution in the river.

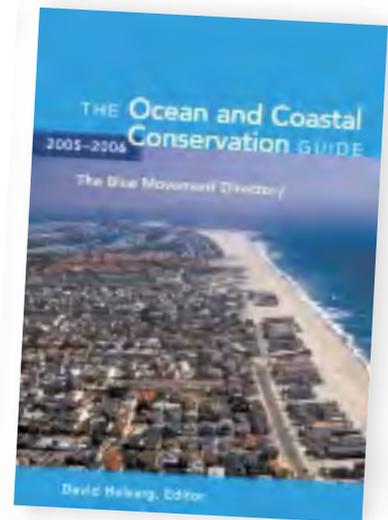
In July, the Mid-Atlantic Environmental Law Center filed a motion for summary judgment in a lawsuit against EPA on behalf of the plaintiffs. The suit alleged EPA had approved a plan for Florida's St. Johns River that would not resolve pollution problems that have plagued the river for years. EPA sought permission from the court to allow them to reconsider their earlier approval of the state's plan.

EPA determined that their initial approval of the pollution reduction plan developed by the Florida Department of Environmental Protection was a mistake and that Florida's plan for correcting low dissolved oxygen levels and reducing nutrient loads in the St. Johns would not adequately protect the health of the river.

In recent months, the St. Johns River has suffered from unprecedented amounts of toxic algae and low dissolved oxygen that has caused fish kills, resulting in a health alert that warned against human contact with the river.

"We made a promise two years ago to fight for meaningful nutrient reduction in the St. Johns River, and thanks to this ruling, we have been able to fulfill our commitment to the community and our river," says Neil Armingeon, St. Johns Riverkeeper.

New Blue Movement Guide



The Ocean and Coastal Conservation Guide is a new comprehensive reference guide to the growing "Blue Movement" – thousands of groups, including many Waterkeepers, combating threats to America's oceans and coasts. The guide details more than 2,000 organizations and institutions with state-by-state listings of groups, relevant government agencies, academic marine and science programs, and marine and coastal parks.

The Ocean and Coastal Conservation Guide is a vital new resource for anyone interested in the growing community of people working to protect and restore our coastal lands and waters. Editor David Helvarg is a journalist turned activist and founder of the Blue Frontier Campaign, a broad-based effort to educate and mobilize people around a common vision of healthy, bountiful seas. You can find the guide at www.bluefront.org.

Quicksilver Down

On Friday, November 25, 2005, Neuse Air Force pilot Ron Smith and a member of his family lifted off on a pleasure flight from the New Bern airfield in the ultralight float-plane that was featured in the fall issue of *Waterkeeper*. Conditions were good and Ron easily piloted Quicksilver to about 1,000 feet.

The first sign of trouble came as Ron observed that the engine was slightly overheating. A simple adjustment to the cooling system would easily fix the problem and the safest way to handle it was to land the aircraft.

Within minutes, Ron landed the plane on the Neuse River. The plane was about 300 yards offshore in water approximately 8 feet deep. Then, according to Ron, "All hell broke loose. As I stepped out on the pontoon to adjust my cooling intake, there was a mild chop on the River. I had the aircraft's nose aligned towards the waves. As I moved towards the back of the plane, a gust of wind, interacting with the waves and my movement all came together to cause the plane's tail to touch the water. As the water gripped the tail, the plane's nose went straight up exposing the underside of the wings to the full force of the wind. That flipped the plane, and pas-



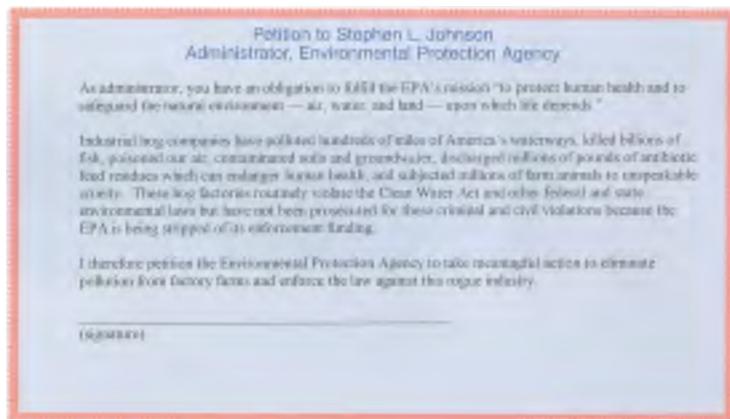
sengers, into the water. Thankfully, our situation was observed by a couple on the shore and a rescue team had us out of the water in about 20 minutes."

The next day, the plane was extracted from the River and moved to the beach of a fellow Neuse River pilot, Phil Bowie. Now, you would think that this situation would have an expensive ending. Not so! On Saturday, a complete inspection of the plane revealed only minor damage. On Sunday, the engine was fired up and ran without problem for two hours. Ron, with a broad smile on his face, said: "I'll have her flying by Friday, you watch."

55,000 Americans Demand Action on Factory Farms

On October 24, 2005, Waterkeeper Alliance delivered 55,000 petitions to U.S. EPA headquarters in Washington, D.C. demanding that the agency protect American communities, waterways and health from industrial livestock facilities. Over the past five years, Waterkeeper Alliance has forged a nationwide campaign to end the enormous adverse water quality impacts associated with Concentrated Animal Feed Operations (CAFOs). Earlier this year Waterkeeper Alliance successfully compelled EPA to improve public participation, ensure CAFO operator transparency and accountability and develop meaningful measures to control pathogen discharges from CAFOs. Still discouraged by the agency's unwillingness to examine proven alternative technologies for

reducing or eliminating dangerous pollutants, the petitions are an expression of outrage over EPA's efforts to accommodate the CAFO industry's worst practices.



\$300K Fine For Great Lakes Spill

Michigan-based Doug Martz, St. Clair Channelkeeper, was instrumental in holding Imperial Oil Limited, one of Canada's largest petroleum conglomerates, accountable for an illegal spill in the St. Clair River. Imperial Oil Limited was fined \$300,000 for discharging toxic solvents into the St. Clair from their refinery in Sarnia, Ontario, in violation of the Canadian Fisheries Act.

Industrial spills into waterways around the Canadian and U.S. border have been escalating since 1997. Between 2002 and 2003 alone, the environmental advocacy group Sierra Legal documented more than 2,000 water pollution violations and 102 legal spills in the province of Ontario.

So, in 2004 when Doug Martz heard from Donna Day, a member of the Walpole Island First Nation, that another major spill had occurred, he acted. Doug immediately sent a letter to Imperial Oil Limited requesting that meaningful action be taken to protect the health of the citizens of Canada, U.S. and the Walpole Island First Nation.

The Investigation and Enforcement Branch of Canada's Ministry of the Environment concluded that 85,700 kilograms (almost 100 tons) of ketones (a toxic family of industrial chemicals that includes acetone) had been discharged into the St. Clair River. Imperial Oil Limited was found guilty of violating the Canadian Fisheries Act. Under Canada's law the spilling of any substance found toxic to fish is considered illegal, whether or not the spill results in fish kills.

Lake Ontario Waterkeeper Mark Matteson notes, "This case testifies to the strength of the Waterkeeper movement, because it demonstrates how American Waterkeepers can work with Canadian Waterkeepers and use Canadian laws to protect their waterways. We're not bound to a set of boundaries like our government agencies."

Mt. Storm, WV,
July 1998

NAFTA Secretariat recommends investigation of U.S. mercury emissions

Complaint links power plant emissions with widespread mercury contamination

MARK TURNER

For only the second time in its 11-year history, the NAFTA Commission for Environmental Cooperation announced on December 13 that it intends to launch an investigation into the U.S. government's failure to enforce its environmental laws. Following a complaint submitted by a coalition of Canadian and American environmental groups late last year, the C.E.C. Secretariat formally recommended that an investigation be launched into allegations that the U.S. government is failing to uphold provisions of the Clean Water Act concerning emissions of mercury from coal-fired power plants, and thus is in violation of both United States and international law.

Canada's Sierra Legal Defence Fund and Waterkeeper Alliance filed the complaint with the C.E.C., demanding an investigation into the dramatic increase in mercury contamination of thousands of lakes and rivers across the U.S. in the past decade, including shared waterbodies like the Great Lakes. The groups allege that the U.S. Environmental Protection Agency's failure to enforce provisions of the Clean Water Act has led to degradation of these water bodies and caused widespread fish consumption restrictions.

"Under President Bush, EPA has become simply a taxpayer funded industry lobbyist group, working hard everyday to strip environmental protections from the American people," said Scott Edwards, Legal Director of Waterkeeper Alliance. "The C.E.C. Secretariat's decision is a welcome step towards ensuring that the U.S. government acts to protect the health of our waterways and at-risk mothers and children in the U.S. and Canada."

After mercury is released into the air by coal-fired power plants, it finds its way into lakes, rivers and coastal waters where it is converted to methylmercury, its most toxic form. Mercury has been linked to neurological damage in children and may contribute to heart disease and autoimmune deficiencies in adults. Pregnant women and their fetuses are particularly vulnerable. A recent EPA analysis estimated that one in six women of childbearing age has mercury levels in her blood — high enough to put over half a million babies at risk.

"U.S. coal-fired power plants are the largest source of mercury emissions in North America, spewing 48 tons each year," said Dr. Elaine MacDonald with Sierra Legal in Toronto. "And the C.E.C.'s investigation will highlight the connection between mercury emissions

from power plants and the thousands of mercury contaminated water bodies."

Recently, the EPA enacted a regulation that places minimal restrictions on power plant mercury emissions at the expense of public health and in violation of the Clean Air Act. Several environmental groups, including Waterkeeper Alliance, are currently challenging EPA's illegal actions in a U.S. federal court. In the past decade, the number of U.S. states issuing warnings against eating fish because of mercury poisoning jumped from 27 to 45. One third of all U.S. lakes and hundreds of thousands of river miles are affected by these advisories today.

The C.E.C. was formed under a side agreement to NAFTA and acts as a watchdog to ensure that each of the member countries enforces its environmental laws. The C.E.C. Council, composed of the Environment Ministers of Canada, U.S. and Mexico, must now decide if it will accept the Secretariat's recommendation for an investigation.

The coalition of petitioners includes: Friends of the Earth Canada, Friends of the Earth-U.S., Earthroots, Centre for Environmentally Sustainable Development, Great Lakes United, Pollution Probe, Waterkeeper Alliance and Sierra Club (U.S. and Canada). **WK**

Action

for Public Health and Environmental Equality

By U.S. Senator John Kerry

It's hard to imagine that anyone in Washington would exploit Hurricane Katrina's devastation in the Gulf Coast as an excuse to dismantle environmental protections for all our people. But that's exactly what some ideologues are trying to do, and it will take public involvement at its best to overcome politics at its worst.

The Bush Administration's own experts agree. In a closed session with Senators, EPA Administrator Stephen Johnson made clear that environmental laws are not hindering hurricane cleanup efforts. Despite his recommendation, Republican leaders have proposed wholesale waivers of environmental laws across most of the nation for as long as 18 months. Afterward, EPA officials conveniently changed their position. As has become a pattern, science and expertise were sacrificed for ideology and special interest.

Burning debris and pumping water out of New Orleans required that some regulations be lifted. That was reasonable. Ignoring environmental protections altogether is not. If anything, Katrina demands a national response especially sensitive to everyone's right to clean air and clean water.

Katrina caused an unprecedented environmental and public health crisis in the Gulf Coast region. Not only did nine major oil spills occur, but 60 underground

storage tanks, five Superfund sites, and numerous hazardous waste facilities were hit. Over 1,000 drinking-water systems were disabled, and lead and E. coli levels in the floodwaters have far passed the EPA's safe levels.

The victims of Katrina must not be victimized twice, first by a hurricane then by Washington's assault on clean air and clean water. It's wrong to talk one week about the poverty of the Gulf Coast then the next week rollback basic safeguards that protect children in our most needy communities from permanent health risks.

I'm working with Senator Dick Durbin (D-Ill.) and Representatives Hilda Solis (D-Calif.) and Alcee Hastings (D-Fla.) to pass the Public Health and Environmental Equality Act in Congress. This legislation would put Congress on the record in support of public health and environmental laws during this time when residents of the Gulf Coast need them most. This legislation will insist that disasters will not be used to weaken, waive, or rollback public health, environmental and environmental justice protections. It will acknowledge that state, local, and regional authorities retain their authority for compliance and permitting of industrial and other facilities and their role in enforcing cleanup; and ensure that testing, monitoring, cleanup and recovery in the Gulf Coast region is completed in a manner designed to protect public health and the environment and ensure habitability of the region. Most of all, it will make clear that federal rebuilding of communities and the economy of the Gulf Coast region becomes a model of the integrated, diverse and sustainable society that all Americans desire and deserve.

Low-income and minority communities – those who have been hardest hit by Katrina's wrath – are also those most negatively affected by pollution and poor environmental standards. Protecting clean air and clean water is the right thing to do for these devastated communities, and the right thing to do for the Gulf Coast. **WVK**



The Senator on the Hudson River speaking with friends about water quality.



SHARON FARMER

Americans will long remember 2005
for **Hurricanes Katrina and Rita.**

Along with the **tragic loss of human life**
and the **heavy blow** to the social fabric
of the affected communities, these **hurricanes** caused
serious long-term **environmental damage.**

Pollution from the Gulf Coast's petroleum refineries, manufacturing industries and commercial and residential buildings poured into floodwaters, polluting streets and homes with sewage and toxics. As floodwaters recede, a host of public health challenges loom.

The level of destruction reflects decades of human intervention in natural systems – environmental engineering decisions about the flow of the Mississippi River, wetlands preservation and management, and development. Some of these decisions were made before the knowledge of modern environmental science was available, others reflect the favoring of development interests at the expense of sound science and public health.

One curious and infuriating reaction to the hurricanes has been a rush in Washington, DC to rollback environmental and public health protections. Our environmental laws were designed with exemptions for emergency situations. The proposed rollbacks are irresponsible attempts to use tragedy to undermine the protections that Americans fought to gain. We must remain vigilant as we rebuild. We must defend the laws that protect our communities, our homes and our health.

Now is the time to plan for better infrastructure: we must move critical facilities – power, sewer and gas – out of the storm surge areas, insist new facilities are built to withstand real storms, and ensure that old facilities are adequately prepared for the 2006 hurricane season.

Gulf Coast Waterkeepers Weather The Storm

Waterkeeper's Gulf Coast programs – Atchafalaya Basinkeeper, Louisiana Bayoukeeper, Lower Mississippi Riverkeeper, Mobile Baykeeper and Galveston Baykeeper – made it through the storms and are now working to rebuild.

Marylee and Paul Orr of Louisiana Environmental Action Network (home of Lower Mississippi Riverkeeper) continued their work though the chaos as environmental advocates and watchdogs. They conducted chemical sampling of floodwaters in St. Bernard and Orleans Parishes in New Orleans. They found contamination levels for known cancer-causing agents far exceeding federal limits: arsenic at 75 times the permitted levels, and lead at more than 13 times the standard. Marylee and Paul also provided relief to those in need in the affected

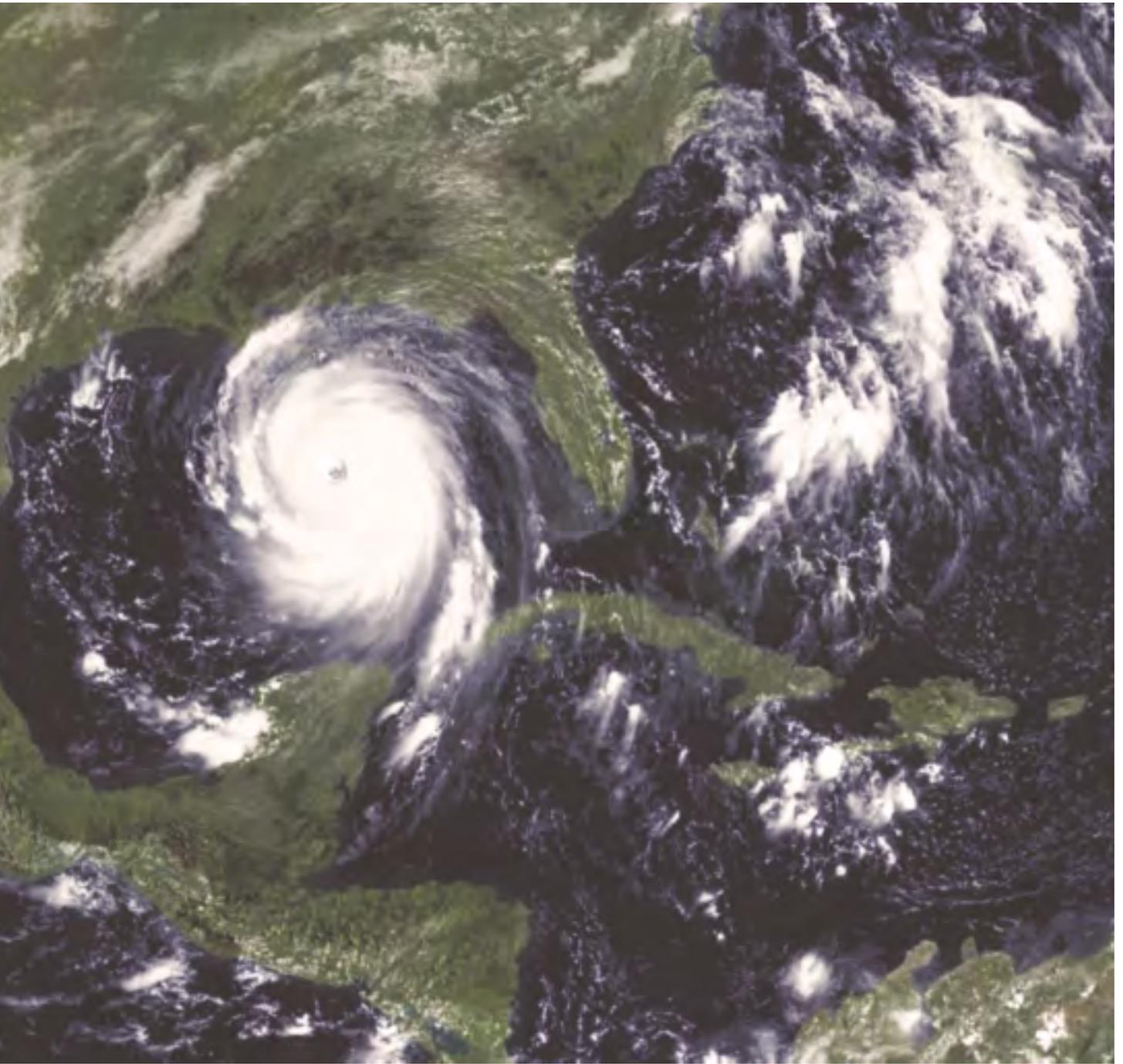


Hurricane Katrina barrels toward the Gulf Shore with 175 mile per hour winds on Sunday, Aug. 28, 2005.

AP PHOTO/NOAA

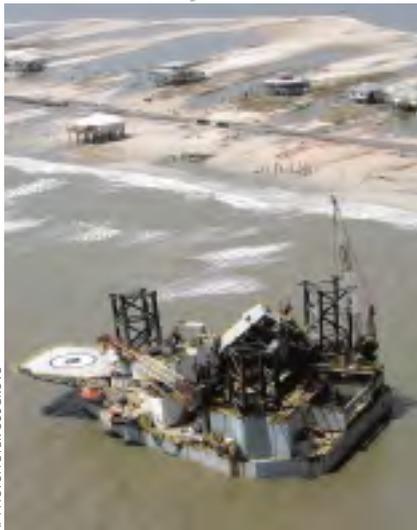
Hurricane Season 2005

Casi Calloway, Janelle Robbins and Lauren Brown contributed to this story.



AP PHOTO/BILL HABER

A New Orleans resident walks through floodwaters coated with a fine layer of oil in the flooded downtown area on Tuesday, Aug. 30, 2005.



Oil Wreck – an oil platform ripped from its mooring in the Gulf of Mexico rests by the shore in Dauphin Island, AL, after Hurricane Katrina passed through the area.

Congress Reacts With Waivers and Offsets

Under the thinly veiled guise of hurricane relief efforts, both Houses of Congress are now considering bills that would allow President Bush and EPA to weaken or waive the Clean Water Act and other environmental laws, adding to the devastation caused by these catastrophic storms. Fortunately, some of the more responsible lawmakers in Congress are seeking to counter these attempts.

Thumbs Down

Here are some of the waivers and offsets proposed in Congress:

- ➔ The Louisiana Katrina Reconstruction Act, introduced by Senators David Vitter (R-LA) and Mary Landrieu (D-LA), allows the President to issue emergency permits waiving environmental protection for projects related to Hurricane Katrina. All the President has to do is determine the action is in “the best interest” of the United States. The proposal permanently waives protections in the Clean Water Act and Federal Insecticide, Fungicide and Rodenticide Act against the spraying of pesticides in water for mosquito control.
- ➔ Environmental Law Waivers, co-sponsored by Senators Inhofe (R-OK) and Vitter (R-LA), is a blank check, granting EPA sweeping authority to waive federal, state or local law or regulations. To invoke the waiver, EPA need only determine that such a waiver is “necessary to respond, in a timely and effective manner, to a situation or damage relating to Hurricane Katrina,” and is “in the public interest.”
- ➔ “Operation Offset,” is the name given by the conservative House Republican Study Committee to a \$543 billion spending-cut plan they propose to offset the cost of “relief and reconstruction effort” of the Gulf Coast. The proposed cuts read like a polluter’s wish list, and an environmental nightmare. Operation Offset calls for:
 - Cuts to Waste Disposal Grants, a program that provides funding for water and wastewater treatment facilities in rural communities.
 - Reductions in EPA’s Water Pollution Control Grants, given to states to prevent water pollution.
 - Elimination of federal wastewater grants that assist states in achieving federally mandated water quality standards for wastewater infrastructure.
 - Phasing out the Department of Agriculture’s Rural Community Advancement Program (RCAP), which helps poor rural communities by providing loans and grants for water projects and economic development.

Thumbs Up

And two valiant attempts to prevent these rollbacks, waivers and offsets and prepare the nation for the hurricanes of the future:

- ➔ Gulf Coast Infrastructure Redevelopment and Recovery Act of 2005, introduced by Senators Jeffords (I-VT), Boxer (D-CA) and others, sets up a federal task force to coordinate Katrina response efforts among agencies. It establishes National Preparedness Grants and would work to fix the needless and catastrophic problems that emerged in our nation’s emergency response plans. The bill also establishes a National Levee Safety Program and requires EPA to develop a comprehensive sampling plan for hazardous substances that threaten human health or the environment.
- ➔ Public Health and Environmental Equity Act, introduced by Senators John Kerry (D-MA) and Richard Durbin (D-IL) and U.S. Representatives Hilda Solis (D-CA) and Alcee Hastings (D-FL), legally establishes the need to maintain public health, environment and environmental justice laws and regulations throughout the rebuilding after Katrina.

areas. With the support of Oxfam, they have distributed thousands of “Re-entry Protection Kits” containing protective clothing and eyewear, gloves, biohazard bags and particulate respirators, as well as bleach, buckets and detergents to assist families returning to their homes.

Louisiana Bayoukeeper Tracy Kuhns was spared major flooding, but was caught in the chaos of the storm and the state and federal response. She couldn’t find her son for nearly a week. (He had stayed in New Orleans to help elderly folks in his apartment complex escape to higher ground.) Tracy’s nine-months-pregnant daughter evacuated to Florida, but had to return because her insurance wouldn’t cover an out-of-state delivery, regardless of the emergency.

Tracy returned to her home several weeks after the storm to discover that the sewer system had backed up, water had soaked into the wood floors and her walls were covered in mold. Marylee Orr supplied Tracy and many in her community with mold cleanup kits, as well as food and other necessities. They have now removed kitchen cabinets and moldy sheetrock. “We are in much better shape than many others,” Tracy is quick to point out.

Dean Wilson, Atchafalaya Basinkeeper, and Stacy Sauce also worked with Marylee Orr to help get food, water and other assistance to people and animals isolated or displaced by Hurricane Katrina and later, Hurricane Rita. At the same time they fought an amendment by Louisiana Senator David Vitter to allow timber companies to log our coastal forests without a permit. Atchafalaya Basinkeeper sent a package to every Senator in Congress in an effort to educate them about the severe threat that rollbacks pose to wetlands in Louisiana – and the importance of wetlands in protecting shorelines and cities from hurricane damage.

Mobile Baykeeper Casi Calloway lives in the sleepy town of Chickasaw. The town’s power substation and their lagoon sewage treatment facility are located behind a levy designed to keep the town safe and dry. But when the levy failed during Katrina, their sewage treatment works was flooded, knocking the electric pumping station out of operation.

During the storm the status of the sewage treatment facility was not the first thing on Casi’s mind. That is, until it occurred to her that with no electricity at the pump and lift stations, raw sewage was simply collecting in the town’s sewer lines. With time, the system would back up, and her neighborhood, streets and even her house would become the sewage treatment storage area for the city.

Coming Together in a Time of Need

By John Wathen, Hurricane Creekkeeper



AP PHOTO/MARK SALTZ

Spur gas station on N. Claiborne Ave in New Orleans on Sunday, Sept. 11, 2005.

Most of her neighbors were content with instructions from the mayor and state environmental officials that they should simply “conserve their flushes,” (though no one really knew what that meant). These storms show serious flaws in wastewater infrastructure and public health protection throughout the region. “Hurricanes are a fact of life in Mobile,” says Casi. “We lose our wharfs and re-build them every couple of years. We lose power and search desperately for a cool breeze or a bag of ice. But Katrina was different. It has been a very long time since we’ve had so much destruction. Most of us have never seen anything like it.”

Streets of Sewage

Sewer lines and treatment plants are the infrastructure that keep harmful pathogens, such as those that cause typhoid, dysentery, hepatitis A and cholera, out of our water supply. Most wastewater collection systems depend on gravity to move wastewater through pipes to treatment plants, an energy efficient system that tends to put treatment plants and large volumes of raw sewage in the lowest lying areas – the first areas to flood.

EPA and the Louisiana Department of Environmental Quality (DEQ) sampled water and sediments for the presence of harmful pathogens in and around New Orleans after the storm. In 85 percent of all samples, floodwaters exceeded the water quality standards set for Louisiana beachgoers. The highest pathogen level recorded was a whopping 263 times above the state’s legal standards.

By September 7, five people had died from *Vibrio vulnificus*, the bacteria that causes cholera. All of the victims had minor abrasions, the likely route of infection. Additionally, public health officials reported “minor outbreaks” of diarrheal diseases among evacuated children.

Federal environmental officials warn that skin contact with floodwater should be avoided, and that if contact does occur that you should wash with soap and clean

The Gulf Coast from Alabama all the way to Texas was hit hard by Hurricane Katrina. The most physical destruction was on the Mississippi coast in places like Gulfport, Long Beach, Pass Christian and Waveland. I spent my adolescence in this area and call it my second home. After Katrina passed I was frantic to find an old childhood friend, Rush Heald, who lives in the area. After watching the news from CNN, I was in great fear for my old friend’s life. Phone lines were down and there was no way to get messages in or out. CNN played the gloom-and-doom broadcasts over and over until I thought I would go nuts.

Derrick Evans, the new Turkey Creekkeeper in Mississippi, called to tell me that he was coming down from Boston to check on his elderly mother and family and to bring down supplies. We decided to share the driving. We left Birmingham in the middle of the night to hide our cargo from the ruthless thieves and looters that we heard about on CNN. We were hauling 600 gallons of gasoline, pallets of plastic for roofing, water, food, clothes and other supplies needed on the coast.

On our way we passed a convoy of FEMA trucks sitting along the side of the road waiting for orders telling them where to go. Derrick and I got to the coast with our supplies before FEMA, a full four days after the storm! This was the case throughout the entire time I was with Derrick. We always had supplies a day before FEMA. We distributed tons of soap powders and bleach, food and water, chainsaws and generators with fuel and oil.

Everywhere we went we were assaulted by an unimaginable smell. Think of what you have right now in your refrigerator. Unplug it for a week and then multiply that by the thousands of homes totally destroyed and piled up in the debris line that stretched from Mobile, Alabama all the way to Texas. The infrastructure was so badly damaged in many places that there was no way to control sewage. Roadside drainages had fish squirming around trying to live in the filth of floodwaters. You couldn’t escape the smells of rotting fish and animals. Then add the chemicals normally stored in your pantry for cleaning, gas for the lawn mower, propane for your grill, pets and every now and then the unmistakable whiff of something even more horrific.

Arriving at the Turkey Creek Community at daybreak Derrick and I wept as we looked at his neighborhood. It was simply overwhelming. I was worried about getting caught in the violence that the press was reporting. But nothing could have been further from the truth. There was no confusion and chaos, no looters and thieves.

People in Turkey Creek received us with open arms, thanking us over and over for coming to help out. As it turned out, Turkey Creek had received a truckload of food and was okay for the time being. I was floored when they asked if I wanted to take some of the excess to Long Beach where I was heading to find my friend Rush. What a twist, Turkey Creek is the poorest and oldest predominately black community on the Mississippi Gulf Coast. Long Beach, by comparison, is one of the more affluent white communities.

I saw this kind of generosity and caring play out over and over. Wealthy people living in tents alongside people from Section 8 housing, sleeping on the ground in common areas. Poor people were teaching rich people how to make coffee in a tin can over a fire. Everyone had something to offer their neighbor.

In Long Beach, we were supplied with diesel fuel for our truck. We had hauled 600 gallons of gasoline for others but forgot to carry extra diesel of our own.

At one of the relief centers we met a man who drove his camper and served food to hundreds of people. He was neither from the coast, nor did he know anyone there. He simply wanted to help. That happened all over the coast: ad-hoc relief efforts by total strangers. The other heroes of the day were, and still are, the local mayors, firefighters and police officers who worked tirelessly 24 hours a day, 7 days a week until backup did finally arrive.

I went in search of my friend and brother, Rush. I found him. I stayed for a few weeks running a relief drive, fueled by the kindness of the many who sent donations. Much of that money came from my friends and fellow Waterkeepers. I have never been more proud to represent an organization as caring and compassionate. Thanks to all from the entire Gulf Coast!



HURRICANE CREEKKEEPER

Upended home in Waveland.



HURRICANE CREEKKEEPER

Debris and wreckage line the roads all along the Gulf Coast.



HURRICANE CREEKKEEPER

Author (in truck) distributing supplies.



Volunteers offer food and supplies.



AP PHOTO/MARCIO JOSE SANCHEZ

Workers for the Gulfport water and sewage department, Joe Dobson, left and Roderick Stapleton, attempt to change a valve on a drinking water line, Sept. 6, 2005.

water. Unfortunately, contact with the floodwater and contaminated sediment was unavoidable for rescue and relief workers. And now, as the city is repopulated and residents literally pick up the pieces of their lives, contact with polluted water is inescapable.

Poison Broth

Toxic, persistent and carcinogenic chemicals found in the floodwaters represent a longer-term health threat to the Gulf region. Crippled refineries, inundated fac-



AP PHOTO/CHRISTOPHER MORRIS/VIPI

Water is pumped out of the flood-ravaged St. Bernard Parish.



AP PHOTO/IVYNE SLADKY

A pool of oil lies beneath a ruptured oil storage tank at a refinery in Venice, LA. The Coast Guard estimates more than 7 million gallons of oil were spilled from industrial plants, storage depots and other facilities around southeast Louisiana.

tories and breached oil containers left an environmental disaster. The equivalent of 160,000 barrels of oil leaked from damaged storage sites in and around New Orleans. Authorities have recovered only 50,000 barrels of oil.

While EPA and DEQ conducted water and sediment sampling for more than 100 pollutants in New Orleans, they did not test for all of the “primary contaminants of concern” from the city’s five Superfund sites. Highly dangerous chemicals such as hexavalent chromium, toluene, 2, 4-D (a pesticide) and creosol were detected in floodwater. But EPA maintains that the water is safe –

as long as you don’t accidentally ingest it and you wear protective equipment.

Most of New Orleans has now been dewatered, but the environmental health of Lake Pontchartrain, where much of the floodwaters were pumped, is tenuous at best. Despite EPA’s assurances that the lake is rebounding, it certainly has been critically polluted with a toxic mix of persistent contaminants. Booms and skimmers can remove the physical detritus and petroleum sheen from the surface of the water. But what lies beneath the surface will remain a nightmarish hazard for years to come if EPA does not set forth a proactive strategy to address it.

Hurricane Season 2006

Doing Reconstruction Right

By Marylee Orr and Casi Calloway

In the wake of Hurricanes Katrina and Rita, it is critically important we learn from prior mistakes. We must cleanup and rebuild in a manner that demonstrates care for the environment, for the health and safety of clean-up workers and the long-term safety of the residents of devastated areas.

Waterkeeper Alliance and our Gulf of Mexico Waterkeeper programs are taking steps to prepare for future hurricanes, and prevent future recurrence of the devastation and disarray of the 2005 hurricane season. We cannot stop hurricanes, but we can learn to live with them. Waterkeeper has identified steps that we must take to get ready for the 2006 hurricane season, and beyond.

Preparing

- We must anticipate the magnitude of inevitable storms and build our water supply and wastewater treatment infrastructure to survive these storms and protect human health.
- We must strengthen permitting standards along the coast to require that all facilities – industrial facilities in particular – are built to withstand hurricanes without releasing oil and other toxic chemicals.
- We must minimize the threat and damage by moving tankers and securing toxic chemicals.
- We must establish county/parish emergency management plans that include measures for collecting and disposing contaminated debris and household hazardous waste.
- We must educate citizens to the potential dangers in their communities resulting from spills, leaks and discharges.

Reacting

- We must train public officials and citizens and ensure that they are qualified to respond to environmental disasters.
- We must strengthen measures to protect public health during a crisis by providing timely information on chemical and sewage spills, and evacuate when necessary to protect public health.
- We must monitor air and water quality in cleanup and reconstruction zones to protect reconstruction works and returning inhabitants.

Rebuilding

- Urban areas must be redesigned to make them livable, attractive and vibrant places for citizens of all races and economic levels.
- Reconstruction must strengthen the region's natural defenses against storm surges and hurricanes – wetlands and barrier islands.
- Critical infrastructure must be moved out of floodplains and other low-lying areas.
- We must strengthen stormwater retention plans throughout rebuilt areas.
- We must prevent floodplain development and strengthen building codes and standards to ensure maximum protection from future hurricanes.
- We must implement safeguards so restarts of refineries and other manufacturing industries prevent unnecessary emission surges.
- State and federal agencies must stop issuing permits that destroy wetlands. Additionally, they must eliminate wetlands mitigation allowances in storm surge or flood plain areas.
- Agencies must deny all federal insurance on structures in floodplains.

Planning for a future with bigger hurricanes

- Congress must act to strengthen, not weaken, wetlands protection and other environmental and public health laws.
- It is time for an overhaul of the U.S. Army Corps of Engineers.
- We must reshape national energy policy away from fossil fuels. **WIK**



HURRICANE CREEKKEEPER

Waveland City Hall

Story and Photos by Rick Dove

This summer Rick Dove traveled to Washington to spend some time with the three Waterkeepers who are working to clean and protect Puget Sound.

FIRST OF ALL, PUGET SOUND IS HUGE.

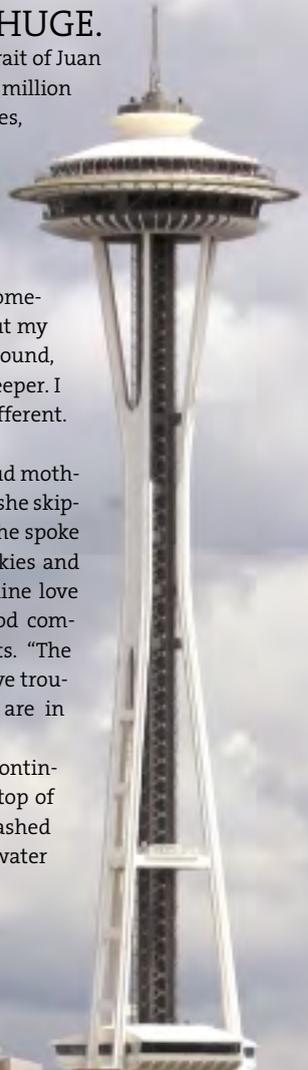
It extends 90 miles from Olympia in the south to the Strait of Juan de Fuca, just below Vancouver Island, in the north. Four million people call it home, as do abundant species of fish, whales, seals and two majestic snowcapped volcanos, Ranier and Baker.

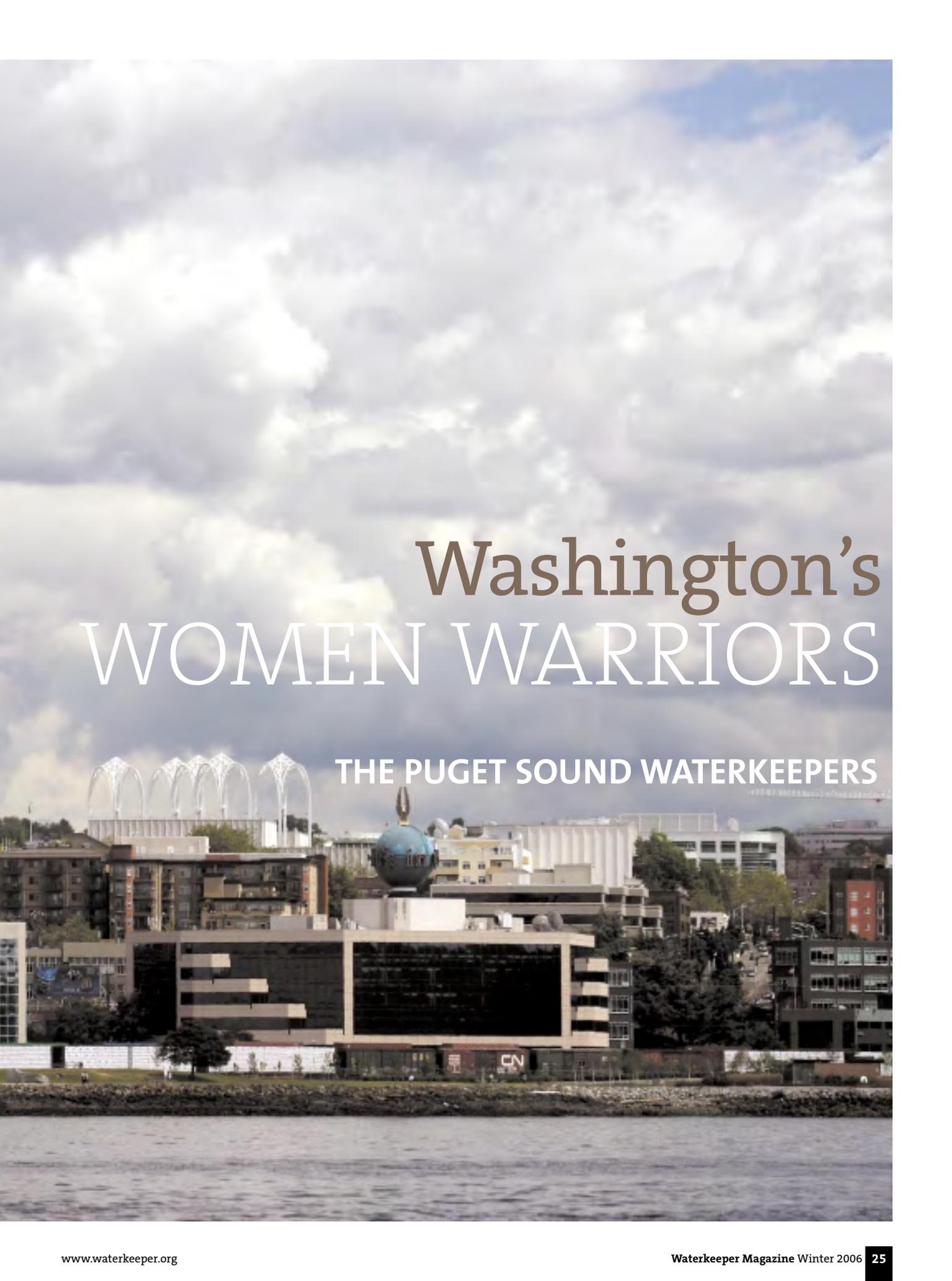
Puget Soundkeeper

When I touched down in Seattle from my cross-country flight, it was raining. I quickly learned that rain was something I should soon get used to around Puget Sound. But my spirits weren't dampened. I was in Seattle, on Puget Sound, and I was anxious to see Sue Joerger, the Puget Soundkeeper. I had met Sue a number of times before, but this was different. Now we were in her backyard – on her sound.

Being with Sue on her sound is like being with a proud mother of a cherished child. She was at home, completely. As she skippered her Soundkeeper boat along the Seattle skyline, she spoke of her water in poetic terms. Gales and whales, blue skies and tides, seals and keels. Make no mistake, this is a genuine love affair. But her capturing smile vanished and her mood completely changed when I asked about pollution threats. "The sound is in declining health. It's a living resource in grave trouble. Orcas, rockfish, marine birds and other wildlife are in grave jeopardy and the state of Washington knows it."

Sewage treatment plants and industrial discharges continue to release their toxic pollutants into the sound. On top of that, a great deal of pollution reaching the sound is washed off city streets, industrial areas, cars and lawns. Stormwater





Washington's WOMEN WARRIORS

THE PUGET SOUND WATERKEEPERS

Puget Waterkeepers
Amy Bates, Sue
Joerger and Wendy
Steffensen



runoff alone, she said, pollutes more than 30 percent of the state's waters.

Listening to Sue was mesmerizing. "Look, we're not taking this lying down. We're suing one county under the Clean Water Act for failing to reduce stormwater pollution. We have brought

13 illegal stormwater dischargers, including auto recyclers and scrap metal yards, into the permitting process. They are now required to prepare and implement stormwater pollution prevention plans. In another case," Sue continued, "we litigated against stormwater discharges from 1,200 industrial facilities. Now, for the first time, they must comply with water quality standards, conduct water quality sampling and implement best management practices to reduce their pollution."

There was more to report, but the sun was setting and our fuel was running low. With a truly spectacular sunset behind us we reluctantly headed for the dock.

North Sound Baykeeper

Day two found my wife Joanne and I near the top of Puget Sound, in the town of Bellingham, on Bellingham Bay. There to greet us was Wendy Steffensen, the North Sound Baykeeper. Like Sue, Wendy works to restore and protect Puget Sound by patrolling, identifying problems and eliminating pollution. Wendy's work is concentrated in the north end of Puget Sound and Georgia Straits. I was anxious to see these waters. Yes, even though it was still raining.

On the way to her Baykeeper patrol boat, Wendy bragged about her sponsor, RESources. Now in its 20th year, this organization is one

of the premier non-profit environmental education organizations in the Northwest. Marine water quality protection and recycling are two of its many missions.

Wendy's guided tour of Bellingham Bay was awesome. As we drew close to a family of seals resting on log booms, Wendy broke into a wide smile. "I can't imagine this place without them. It's their home, but it's mine too. For a long time I had a real fear of water. As a very young child I nearly drowned. This bay took that fear from me." Pointing in one direction, then another, over and over again – I got dizzy just trying to keep up with her as she described one site after another.

"We have the same pollution problems here as in other parts of the sound – discharge of persistent bio-accumulative toxins from industrial sites, pollution from stormwater, out-of-control development and the buildup of contamination from years of uncontrolled industrial operations. It's my job to put an end to that and to get these problems fixed, and I'll use every tool at my disposal from education to litigation."

She has made significant progress. A few of her many accomplishments include shepherding two successful legal appeals against British Petroleum (BP) and the Army Corps of Engineers over the significant impact of a dock expansion. In 2005, she published an expose on construction stormwater problems and gained a seasonal construction clearing and grading ban in a sensitive watershed. Later in 2005, she led a critical fight to protect Whatcom County's environmental "critical areas." It is impossible to imagine someone better suited to be the North Sound Baykeeper.

Commencement Baykeeper

The next day, we traveled to the southern end of the sound to the City of Tacoma where we were greeted with a clear sky and warm sun, and Commencement Baykeeper Amy Bates.

Amy gave us a quick education on Commencement Bay. The bay is an important deep-water seaport. Dredging and filling has destroyed much of the original mudflat and estuarine habitat. Years of pollution have left the bay's

Sue originally hails from Winston-Salem, NC, and loves to tell the story of coming home from school one day with an "accent," whereupon her parents (originally from Pennsylvania and New York) decided to move her to the "no accent" state of California. This move proved to be pivotal since it was in California that she first fell in love with sailing and even today lives on her sailboat "Sputnik." Why this name? Sue smiles and answers that it translates to "traveling companion of the world."

In 1999 Sue saw an ad for the position of Puget Soundkeeper. She immediately wrote her resume, pedaled her bicycle to the Soundkeeper office and deposited it in the mail slot. An interview and job offer soon followed for Sue's "perfect job." When asked why she thought she was chosen for the job, Sue modestly answered, "I had experience running a non-profit organization, had management skills, could do all kinds of boat maintenance and hold a Coast Guard license for 50 tons in inland waters."

SUE JOERGER Puget Soundkeeper



sediments highly contaminated with organic pollutants and heavy metals. In 1983, EPA declared Commencement Bay a Superfund site.

Amy is sponsored by Citizens for a Healthy Bay (CHB), the organization leading the way in the bay's restoration. Amy is relatively new on the job, but she has jumped right in the deep end, confronting the many water quality problems of Commencement Bay. Amy spends a lot of her time out patrolling her bay. But she is also concentrating her attention on building the Commencement Baykeeper program into one of the best in the Waterkeeper movement.

"Success in restoring and protecting Commencement Bay is directly linked to the health of the Commencement Baykeeper Program. Fortunately, I have the full support of CHB, as well as my fellow Puget Waterkeepers."

Our patrol with Amy included areas of mudflat restoration, shipping and dry-dock facilities, inappropriate housing developments and industrial pollution sites. "It is exciting to see the program move forward," Amy explained. "Commencement Bay needs a Waterkeeper, and my goal is to build an exemplary program that is deliberate, progressive and sustainable." Joanne and I had no doubt – this is one tough warrior who will get the job done. Puget Sound is lucky to have her on the team.

Women Warriors of Puget Sound

I went out to Washington hoping to find what it is about water that engenders such passion in these Puget Sound Waterkeepers, and to describe what it is that drives Waterkeepers like Sue, Amy and Wendy to such lengths to protect it. Needless to say, I didn't find an easy answer. But my time with the Puget Sound Waterkeepers confirmed that the waters of the world are better off because of that passion, and that generations to come will benefit from it. **WK**



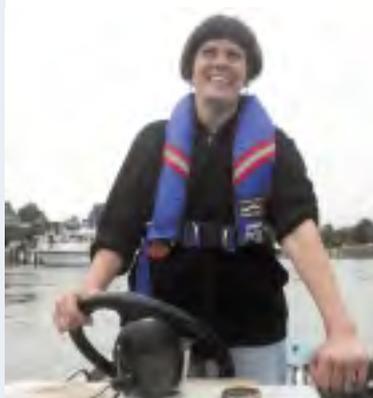
Puget Sound Waterkeepers take time to pose as their bearded fellow East Coast Waterkeepers Joe Payne, Andy Willner and Terry Backer.



Born in Tacoma, Washington in the "shadow of Mount Rainier," Wendy was raised in the suburbs of Chicago. But it was on vacations in Florida with her family that she formed her attachment to the environment and her desire to see nature flourish.

With a Bachelors degree in biology from Northern Illinois University and a Masters in environmental toxicology from Cornell University, Wendy moved to

WENDY STEFFENSEN North Sound Baykeeper



Pensacola to be closer to the water she loved. Working for Sierra Club and as a researcher at the University of West Florida, Wendy honed her skills in her chosen field.

Wendy later moved back to Washington to serve as an Environmental Health Specialist for the Pierce County Department of Health. She continued to gain experience in both science and advocacy, working as a college instructor and as a laboratory analyst, while volunteering her time and expertise analyzing pollution permits for the Puget Baykeeper. When the North Sound Baykeeper position opened, Wendy was a shoe-in.

Amy was born in Holly, Michigan. Growing up in the middle of five children, she was characterized by her family as having a "rebel syndrome" – never content with an easy or uninformed answer, and always questioning (traits that would serve her well as a Baykeeper.)

After working for a year and a half following high school, Amy joined the army. With her family busy taking bets on how soon she'd be sent home from basic training, Amy dug in, determined to prove them wrong. Not only did she make it through basic training, she spent two years as a military police officer.

Following her discharge from military service, using the GI Bill, she enrolled in Pierce Community College and later transferred to Washington University at Tacoma where she graduated cum laude with a degree in environmental studies. She later completed a Masters degree in Public Action. For a person who chose environmental studies because of its "peaceful nature," Amy has become a warrior for her community, patrolling and defending Commencement Bay from pollution.

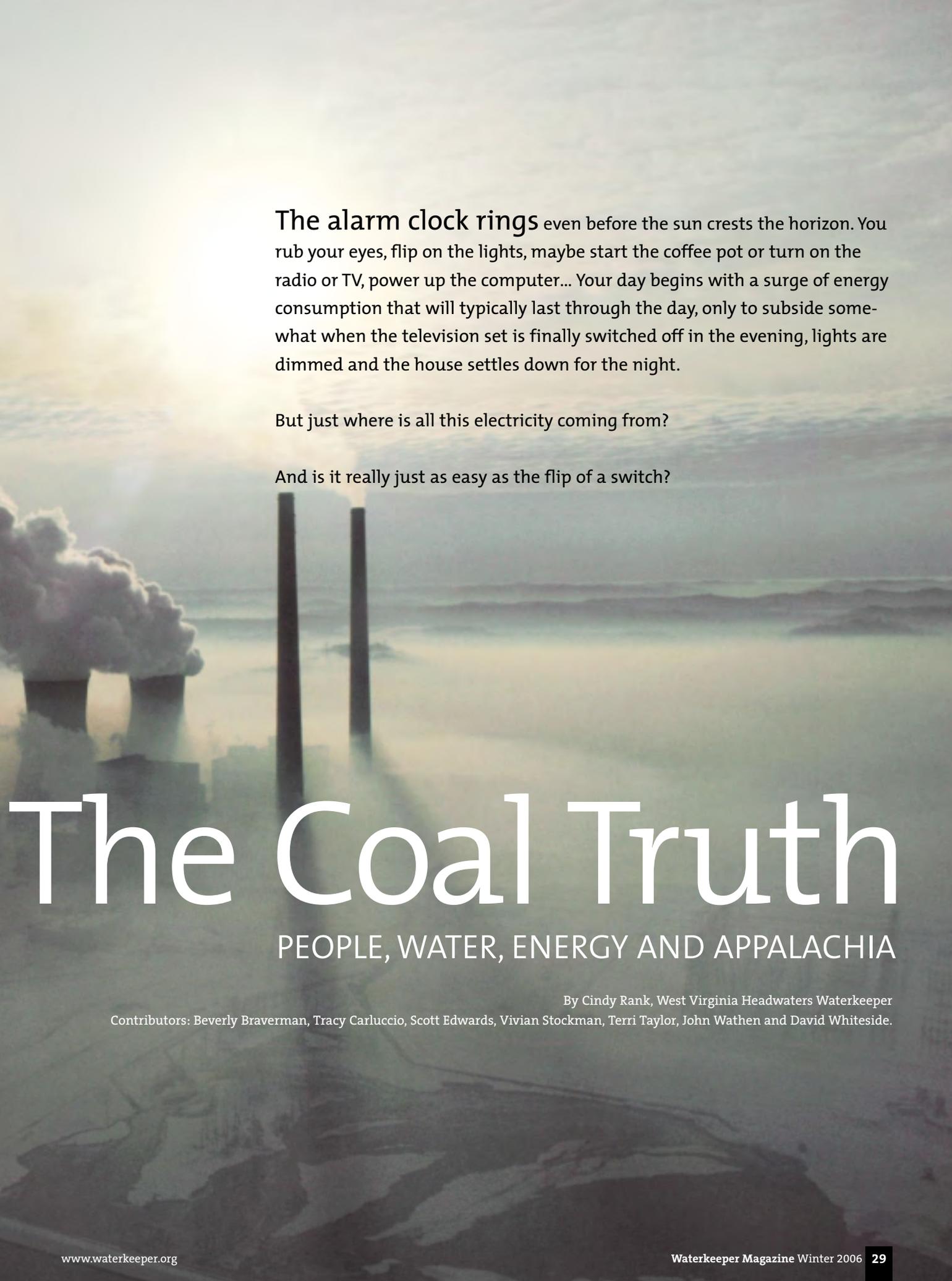
AMY BATES Commencement Baykeeper





© H. DAVID SEAWELL/CORBIS

A West Virginia coal-fired power plant releasing steam and smoke into the atmosphere.



The alarm clock rings even before the sun crests the horizon. You rub your eyes, flip on the lights, maybe start the coffee pot or turn on the radio or TV, power up the computer... Your day begins with a surge of energy consumption that will typically last through the day, only to subside somewhat when the television set is finally switched off in the evening, lights are dimmed and the house settles down for the night.

But just where is all this electricity coming from?

And is it really just as easy as the flip of a switch?

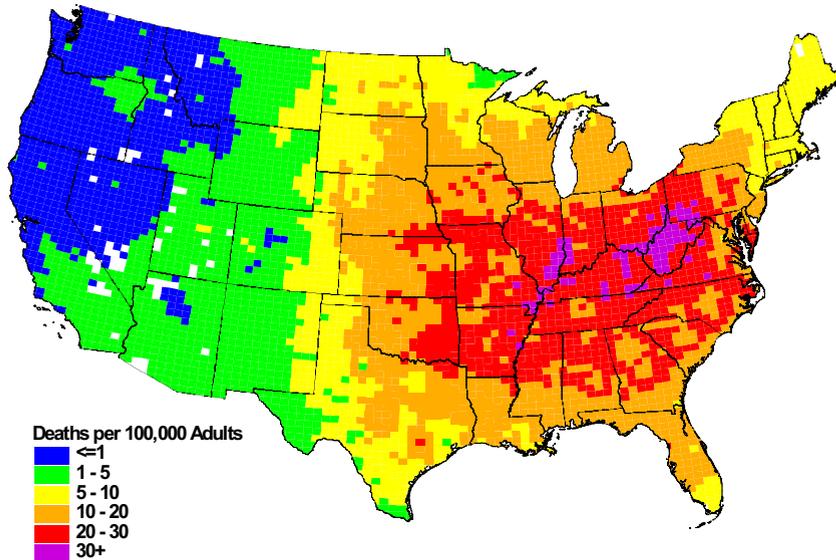
The Coal Truth

PEOPLE, WATER, ENERGY AND APPALACHIA

By Cindy Rank, West Virginia Headwaters Waterkeeper

Contributors: Beverly Braverman, Tracy Carluccio, Scott Edwards, Vivian Stockman, Terri Taylor, John Wathen and David Whiteside.

Dirty Power, Dangerous Air



Appalachian residents bear the brunt of the health impacts from our reliance on coal

The nation is facing a health crisis from coal-fired power plant pollution. EPA has used research from the American Cancer Society, Harvard School of Public Health and other research institutions to predict how many premature deaths are caused in the U.S. each year by coal-fired power plant pollution. Clear The Air used this data to develop this map and a power plant pollution locator (available at <http://www.cleartheair.org/dirtypower/>) that allows you to get the facts about your state.



Coalfields of Appalachia

Picking Up Steam

In the U.S., more than 90 percent of the coal produced is used to generate electricity. And despite its ancient origins and toxic legacy, coal is the fastest growing source of energy. Worldwide coal consumption has increased 25 percent over last four years.

Coal-fired power plants produce 52% of our nation's electricity. Pollution from power plants cuts short the lives of nearly 24,000 Americans nationwide every year.

The United States consumes more energy than any other country in the world. Electric utility plants dot our landscape creating power from a myriad of sources — nuclear, hydro, wind and fossil fuels — yet fifty percent of our electricity comes from a source that mankind has been using for over 1,600 years — coal. Today, the United States is home to almost 1,100 coal-fired utility units, with much of our coal being torn from the ground in eastern coal-producing states of Appalachia. And there are plans to add hundreds more coal-fired power plants in the coming years. Why? Because coal is cheap — or at least that's what we're told by industry and by our government. But how "cheap" is it really? Are we being told the whole story about the true cost of coal? What goes on behind King Coal's black curtain?

Coal must be mined, transported, washed, transported again, stored, burned and converted to the electricity that flows through transmission lines and into our homes. Each step of the process is rife with hidden economic and social costs, shady backroom politics and harmful impacts on human and environmental health.

It is a myth that recent technological advances have somehow solved all the problems associated with the use of coal to power our world.

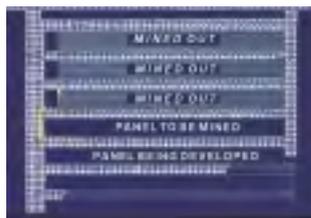
Energy companies have cast an illusion that the bad days of dangerous mining and dirty burning are over: that strong laws are in place and law abiding King Coal is strictly following the law. Nothing could be farther from the truth.

The truth is, there is nothing "cheap" or "clean" about coal. The cost of burning coal for electricity is far beyond what Americans outside of the coalfields ever consider or imagine. It is not reflected in this month's utility bill, but in devastated lives and communities, forests and streams across Appalachia. It is a price we all pay in poisoned waterways and lost cultural and natural heritage.

Extraction

Mining has always been a dangerous mess. In the 1980's machines and mining practices developed in the wide-open space, and 100-foot thick coal seams of Wyoming were brought east to the steep hills of the Appalachian Mountains. These practices are unacceptable anywhere, but in Appalachia they proved downright apocalyptic. Longwall mining replaced traditional underground mining while mountaintop removal mining took the place of strip mining. Each of these practices is far more massive in scale, requires fewer miners and chews up much more earth; these new technologies for extracting coal have raised the level of destruction to new heights.

Longwall Underground Mining



TERRI TAYLOR

Longwall panels are lined up separated by un-mined "gates" where the surface remains supported. Subsidence averages three to five feet. Each panel is up to 1,500 feet wide and two miles long.

Most coal today is mined underground, and much of that comes from longwall mining operations where huge (1,500 feet or wider) toothed machines tear into the ground, chewing out all the coal in one to two mile underground swaths, called panels. The cut coal falls onto a conveyor for removal to the surface.

In traditional deep mining, pillars of coal were left to support the earth, leaving the surface relatively unaffected. Longwall mines, in contrast, remove virtually all the coal in the seam. Armadillo-like steel plates support the earth while machine operators shear away the coal. The machine excavates all the coal and moves forward through the seam, allowing the earth to drop into the void left behind. Removing six feet of coal leaves the surface unsupported. The ground sinks, leaving in its wake broken homes and poisoned wells, sucking water out of springs and farm ponds, drying up streams. Industry calls this "planned subsidence." Affected communities know it as total destruction.



BILL SCHIFF



TERRI TAYLOR



TERRI TAYLOR



TERRI TAYLOR



TERRI TAYLOR

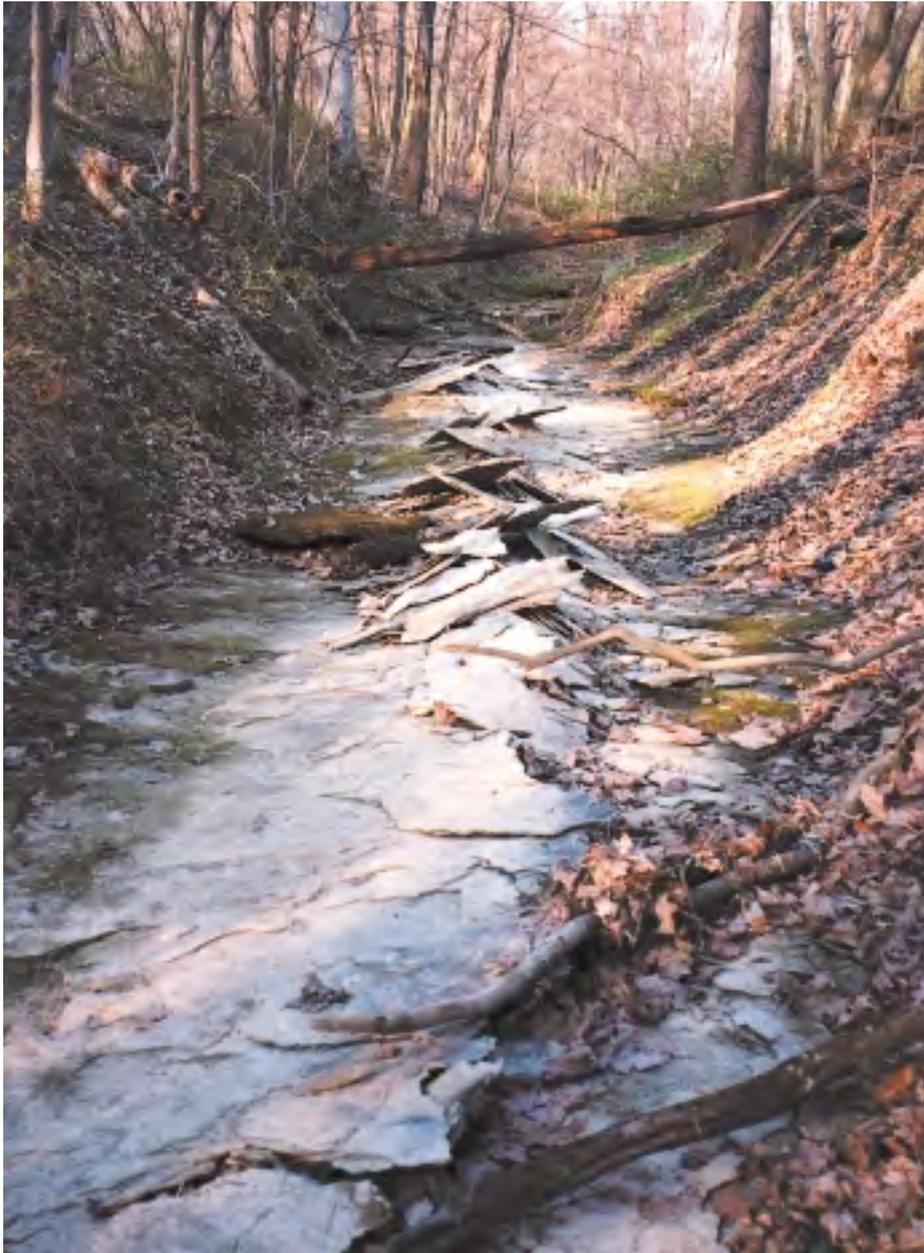


TERRI TAYLOR



The Thomas B. Kent, Jr. Farm is a 102-acre Pennsylvania farm with an 1850 brick and stone farmhouse listed on the National Register of Historic Places. The property was undercut by longwall mining in the 1990s. 540,000 tons of coal was removed from under the farm's property, generating millions of dollars of revenue for the coal company, but leaving the home, creek and streams destroyed.

The coal company shored up the house before the longwall operation passed underneath. However, subsidence left the foundation cracked and destroyed the spring-fed pond, leaving no source of potable water for drinking or farming.



MARK HERSH/RAYMOND PROFFITT FND.

The mining companies excuse the devastation by arguing that it's best to get the subsidence over quickly, rather than wait for the mines to cave slowly over the next 50 years or so. People living with the aftermath will tell you the shifting, cracking and settling permanently impacts homes, waterways and the lives of those who live over these operations. Although precautions are taken to protect homes, i.e. by boarding up walls, taping windows, digging wide moats around the foundations to lessen the impact of the shifting and heaving earth as it settles into its new repose, foundations crack and windows break. Homeowners have no control as coal companies control the rights to coal under their property.

As the underground riches are stripped away, property values plummet and residents are left to pick up the pieces.

Subsidence turns narrow, quick-running streams into sediment-clogged pools, suffocating aquatic life and changing groundwater-fed streams into stormwater ditches.



A revealing documentary exposing the impacts and legacy of longwall mining.

SUBSIDED GROUND... FALLEN FUTURES

Under hundreds of square miles of Pennsylvania's Greene and Washington Counties, longwall mining leaves the Earth's surface unsupported. Longwall mining damages entire watersheds, depriving the land and its occupants of springs, streams, ponds and wells, creating an environmental disaster of local and national importance.

This 15-minute documentary portrays the

experience of two families as they struggle to cope with extensive longwall subsidence damage to their historic homesteads.

Written and directed by Emmy Award winning journalist Terri Taylor. Produced by the Raymond Proffitt Foundation. Funding provided by The Heinz Endowments.

Info & screening copies: Ten Mile Protection Network, info@tmpn.org, 724-267-4633

Mountaintop Removal Mining



A massive dragline, dwarfed by the huge scale of the operation, at work on a mountaintop removal operation near Kayford Mountain, WV.

VIVIAN STOCKMAN THANKS TO SOUTHWINGS

Where strip mining involves clearing away the layer of earth above a seam to access coal deposits, mountaintop removal is strip mining on steroids. It means complete deconstruction of once ecologically diverse and verdant mountains, the suffocation of biologically rich headwater streams and the displacement of generations-old communities.

In central Appalachia, hills are steep and valleys narrow. Coal seams are layered throughout these mountains much like the frosting in a multi-tiered layer cake, proving often difficult to deep mine. Until the mid-1980's miners used traditional deep mining to remove the thicker seams of coal that honey-combed the steep mountains and traditional surface mining to expose and remove the outer edges of the thinner seams close to the surface around the sides of the mountains.

Technological advances have hit Appalachia like a sledgehammer. Today, huge

Politics Over Public Interest

The 2005 Programmatic Environmental Impact Statement on mountaintop removal mining – a legally required government study begun in 1998 in response to litigation by local citizens – is a prime example of politics over public interest. The purpose of the study was to explore ways to limit the impact of mountaintop removal mining. But while the government included extensive scientific research documenting damage of this practice to communities and the environment, and in the face of 80,000 public comments against this practice, the Bush administration used the study to endorse mountaintop removal, and recommend streamlining the permitting process.



VIVIAN STOCKMAN

Valley fills are created when waste rock is dumped from the mining area into nearby stream valley – sometimes over two miles long. This is a picture of a small valley fill in its early stages. The pond at the toe of the fill is meant to prevent sediment from entering the rest of the stream. Fills under construction often contribute to downstream flooding when rains rush off the denuded mining area above overwhelming the ponds and causing them to break or overflow.

The Definition of Fill

In 2001, King Coal found itself faced with a federal district court ruling that would have shut down mountaintop mining operations all across West Virginia as a violation of the Clean Water Act. King Coal's response was to immediately cash in some of its political markers and get its cronies in the Bush Administration to change how EPA and Army Corps of Engineers define a single word in the Act, the word "fill." Changing the definition of fill effectively insulated the industry from any further Clean Water Act attacks and negated the court's decision, allowing the coal industry to continue burying Appalachian streams and valleys with mine waste and rubble without interruption.

Now, Washington's eagerness to kowtow to the coal industry is having far-reaching implications in other areas of the country where industry wants to use our waterways as unpermitted waste disposal sites. In Alaska, gold mining companies are taking advantage of this bureaucratic, regulatory change to dump waste from gold mines into nearby lakes. Only time will tell how many other industries will jump on the regulatory bandwagon and fill our nation's waterways with their toxic mess.

mining machines tear away at mountaintops, first blasting apart the uppermost layers of rock, pushing it into valley streams below to expose a seam of coal and then bulldozing the coal into huge trucks to be transported to preparation plants.

The process is repeated over and over again until at last the entire mountain (often 600 – 1,000 feet) has been dismantled, all the coal removed (often 6 to 15 different seams), and the leftover millions of tons of rock and debris that now fill the stream valleys are "sculpted" into short flat or sloped hills.

Over 800 square miles of the most productive and diverse temperate hardwood forests no longer exist. Twelve hundred miles of streams have been buried or otherwise impacted by these operations. Groundwater – perched aquifers that once fed mountain springs and replenished streams in dry times – have been eliminated, ancient mountaintops replaced with rubble and rock that has been put through the giant mix-master of modern day mining, spit out and bulldozed into sterile, manmade moonscapes.

Mountaintop removal mining has already turned hundreds of thousands of acres of Appalachia's mountains into a barren wasteland. Lives are destroyed as families are uprooted and forced to move, communities disappear and a chain of generations living from the land is broken. No one can question that moving mountains has a certain god-like quality about it. But these arguably amazing engineering feats have consequences of unbelievable proportion.



VIVIAN STOCKMAN

Poisoned water discharged below a coal sludge impoundment.

Stream Buffer Zone Rule

Under the 1977 Surface Mining Control and Reclamation Act, the Buffer Zone Rule prohibits mining within 100 feet of intermittent or perennial streams. Insisting the rule was never meant to prevent the dumping of millions of tons of waste rock from mining operations into headwater streams, the Federal Office of Surface Mining has proposed a regulatory change to "clarify" the rule. A 1998 federal district court ruling upheld the clear meaning of the rule, but was returned to the state courts on jurisdictional ground by the Fourth Circuit Court of Appeals. The Office of Surface Mining is currently conducting an environmental review of the proposed change. Permitting continues for the burying of hundreds more miles of ecologically rich streams.



VIVIAN STOCKMAN

One picture says it all...

Marsh Fork Elementary School in Raleigh County, WV, (green patch and white building visible in the foreground, left) sits across Little Coal River from Massey Energy's Goals Coal Processing plant (blue building) and their Shumate Coal Sludge Impoundment – a slurry dam permitted for 2.8 billion gallons of coal sludge (center). The 385-foot-high earthen dam sits about 400 yards from the school. A coal silo sits within 150 feet of the school. The towns of Pettry Bottom and Naoma, WV, are also visible in the photo. A 1,849-acre strip mine is also visible above the impoundment – blasting from this new mine imperils the dam and communities below.

Coldwater Creek Sludge Spill

On October 11, 2000, 300 million gallons of coal sludge broke through a coal slurry impoundment at Kentucky's largest mountaintop removal site. (The Exxon Valdez spill was "only" 11 million gallons.) The black goo poured into Coldwater and Wolf Creeks and traveled 100 miles reaching the Ohio River, closing down community water supplies and devastating aquatic life. The impoundment contained two billion gallons of sludge and sits atop abandoned underground mines. Regulatory agencies had rated the "pond" a moderate risk for failure. This photo was taken 15 days after the Oct. 11, 2000 spill, downstream from the areas most affected by the spill. Illegal roadblocks, staffed probably by coal company employees, kept the public from getting close to the worst areas. There are hundreds of similar sludge "ponds" across Appalachia, at mountaintop removal and other coal mining sites.

Massey Energy

Massey and other coal companies spend millions each election cycle to shape the political debate in West Virginia. Blankenship personally spent \$3.5 million during the state Supreme Court campaign, propelling political novice Brent Benjamin onto the bench. This month, Massey agreed to pay \$2.5 million to settle – without admitting any wrongdoing – a shareholder lawsuit alleging that under Blankenship's leadership Massey had become, "a recidivist environmental violator as a result of the knowing and willful conduct of its Board of Directors."



Author Cindy Rank, West Virginia Headwaters Waterkeeper, and Don Blankenship, head of Massey Energy Company (the region's largest coal producer) debate in 2004.

Moving, Washing, Preparing and Moving



Coal preparation plant operations.



TERRI TAYLOR

Once coal is mined, it must be transported to preparation plants, washed and then moved again to power plants. At several points along the way coal is stockpiled in huge amounts. Runoff from coal piles contaminates groundwater – the primary drinking water source throughout rural America. Coal particulates fill the air, impacting surrounding communities and waterways. These particulates, called coal “fines,” can be found contaminating the air, waterways and communities everywhere that coal is transported and stored.

At the prep-plant, usually near the mine, coal is mixed with water and chemicals, “sluiced and juiced,” to remove impurities that complicate the burning process. The refuse from the coal washing is a toxic, liquid slurry of chemicals and coal waste that is then pumped to a slurry impoundment – a former valley that is now filled with billions (yes “b”) of gallons of toxic sludge behind a manmade dam. These impoundments are often located above communities. Many are at high risk of failing because they can be undermined by underlying abandoned, or even active, underground mines.

While coal companies are required by law to treat water that flows out of the impoundment into streams and rivers, these slurry impoundments can overflow in heavy rains or when dams fail.

These slurry impoundments remain a permanent threat to downstream communities.

Once washed, the coal is loaded back onto trucks, trains and barges for transport to the power plant, again, spreading toxic coal fines to communities and waterways far beyond the coalfields.



AP PHOTO/JEFF GENTNER

Coal is loaded into a truck from a Brooks Run Mining Co. mine Friday, Nov. 18, 2005 near Erbacon, WV.



YOLUIGHOHENY RIVERKEEPER

Coal trucks, typically weighing over 12,000 pounds, create a hazard on the roads of coal country, costing state taxpayers money to repair the highways and bridges. For those who share the narrow, winding country roads with these behemoths, sometimes the price is much higher.

Burning



Miller Steam Plant on Locust Fork of the Black Warrior River, AL, one of 1,100 coal-fired power plants in the U.S.

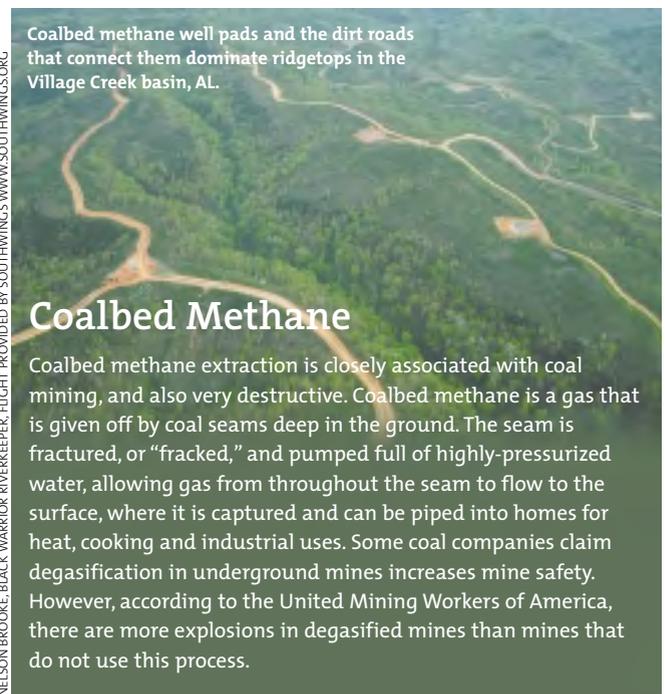
NELSON BROOKE, BLACK WARRIOR RIVERKEEPER

After coal has been mined, transported, washed and delivered to utility units, it is burned to create electricity. Unfortunately, because it's cheaper and easier to build power plants near the source of the coal, the very same populations that pay the highest price of mining are also disproportionately impacted by the burning of coal.

Nevertheless, the effects of burning coal reach far beyond the coalfields. Towering power plant smokestacks churn out massive amounts of mercury, greenhouse gases and more smog-causing nitrogen oxide emissions than all of the nation's cars, vans, and SUVs combined. By some estimates, these pollutants cause almost 30,000 deaths each year, extending the risks of coal mining far beyond the coalfields.

Add to those impacts acid rain, mercury contamination and climate change from carbon dioxide emissions.

New "clean coal" technologies that remove some of the toxics now being spewed into the air may sound noble, but even these fail to address the significant problems associated with mining and the disposing of coal waste and ash. Much of the heavy metal laden ash and waste is stored in landfills or in slurry impoundments that can leak or fail.



Coalbed methane well pads and the dirt roads that connect them dominate the ridgetops in the Village Creek basin, AL.

NELSON BROOKE, BLACK WARRIOR RIVERKEEPER, FLIGHT PROVIDED BY SOUTHWINGS WWW.SOUTHWINGS.ORG

Coalbed Methane

Coalbed methane extraction is closely associated with coal mining, and also very destructive. Coalbed methane is a gas that is given off by coal seams deep in the ground. The seam is fractured, or "fracked," and pumped full of highly-pressurized water, allowing gas from throughout the seam to flow to the surface, where it is captured and can be piped into homes for heat, cooking and industrial uses. Some coal companies claim degasification in underground mines increases mine safety. However, according to the United Mining Workers of America, there are more explosions in degasified mines than mines that do not use this process.

Coal Fly Ash Basin Blows Out: 1000 Million Gallons Spill Into Delaware River



On August 23, 2005, a leak began in Pennsylvania Power and Light's (PPL) coal fly ash storage basin at their Martins Creek power plant. By the next day, the leak turned into a flood over the roads and fields adjacent to the basin, then an eruption of coal fly ash slurry that lasted for several days. In the

end, at least 100 million gallons (company estimate) of coal fly ash effluent gushed into the Oughoughton Creek and the Delaware River.

Easton, about 10 miles downstream, had to shut down its water intakes for several days; the river was dark gray with a slick of light gray for more than a week. Known components of the fly ash include arsenic, mercury, lead, silica, crystalline silica, barium, chromium and other heavy metals. The toxin-laden slurry paved the river bottom, smothering aquatic life for several miles downstream; as far as 40 miles south the gray sludge was visible in between rocks in the river.

The blow out, the slow and mishap-riddled cleanup, and poor decision making by the company and state officials has resulted in prolonging the pollution event, causing pollution from the coal fly ash to spread, and making a very bad situation much worse. Delaware Riverkeeper Network will continue to advocate for the permanent shut down of the coal fired units and the removal of the open impoundments, which represent outdated technology and are not environmentally protective.

Acid Mine Drainage: where you scratch the earth, it bleeds

Even after the coal is removed from the earth, completed mining operations often remain an ecological threat. Toxic mine drainage from abandoned deep and surface mines plagues groundwater and streams throughout Appalachia.

A poisonous brew is created when pyrite-containing rock is dug or bulldozed out of its eons-old rest deep within the earth and exposed to the air and rain. A chemical reaction with water forms a rust-like substance that washes into streams and groundwater. The water has a low pH (meaning it's sour like vinegar or lemon juice) and contains metals such as iron, manganese and aluminum.

In deep mining, toxic mine drainage is formed when the coal itself is full of pyrite. As mined out voids fill with toxic water laced with metals, pressure builds and eventually pushes the toxic brew out of hillsides in seeps, and through fissures in the earth, into our groundwater and waterways.

In strip mining, toxic mine drainage results from pyritic rock around and above coal seams being exposed to water. When that rock is blasted apart and bulldozed back into place as "backfill," drainage through the disturbed material releases toxic chemicals and metals.

Acidic and metal-laden water can also pool up into toxic underground lakes in interconnected deep mine workings. While the mines are active, the mining company is required to pump and treat the discharge. In theory, the oxygen supply is cut off in abandoned mines, stopping the production of acid. In practice however, mines continue to produce acid drainage long after they are abandoned. The "Pittsburgh Pool" alone encompasses over one million acres of metal-laden groundwater that stretches from the Monongahela River to the Ohio River in Northern West Virginia. Toxic water from this underground lake seeps out into streams and wells. The absence of any legally "responsible parties" have the academics, government and industry personnel madly searching for the money and technical know-how to deal with the problem.

Acid mine drainage is a gift that keeps on giving, killing fish and other aquatic life, poisoning the soil and creating expensive treatment problems downstream. Thousands of miles of streams are rendered unusable. Untold numbers of individual well users, public water supplies and wildlife are harmed. Long-term treatment costs are necessary but astronomical.



Noxious mine discharge along Rt. 837 running into the Monongahela River near New Eagle, PA.

STEPHEN SIMPSON

The Abandoned Mine Lands Challenge of 2006

June 30, 2006 will be an important date for our nation's coalfield communities. That is when the Abandoned Mine Lands (AML) Program must be re-authorized, and hopefully strengthened, by Congress. AML was created to collect fees from coal companies to reclaim lands, rivers and streams damaged by mines abandoned by the coal industry.

The AML program was supposed to have completed the cleanup job and come to an end in 2004, but decades of Congressional raids on the fund to cover other spending programs have left it inadequately funded. The federal Office of Surface Mining (OSM) reported that 3.6 million people lived within a mile of a Priority 1 or 2 site – those that pose the greatest health and safety threats.

But it isn't just coalfield communities suffering from this pollution – the Susquehanna River and the Chesapeake Bay are being badly damaged by polluted waste coming from abandoned mines in Pennsylvania, and there is no hope for cleaning up the Chesapeake Bay until abandoned mine contamination in Pennsylvania is stopped.

—Louise C. Dunlap

Where Coal Reigns King

“King Coal” refers to the coal companies, their associations and the politicians who throw open the public trust, clearing the way for their worst mining practices. One might think that our government would work diligently to minimize impacts and safeguard our communities. Unfortunately, when it comes to protecting the public from the harmful effects of the mining and burning of coal, Congress and this Administration have chosen to turn a blind eye.

Mine Reclamation Projects

In 1977, Congress set up the Abandoned Mine Land Fund to raise the funds needed to clean up mines that were abandoned prior to the 1977 passage of the Surface Mine Act. Active mining companies are required to pay into the fund at the rate of 35 cents per ton of surface-mined coal and 15 cents per ton of underground-mined coal. Congress ordered the money to be used to correct problems created by mining done prior to 1977, especially to fix dangerous or emergency situations, replace water supplies and repair and reclaim

abandoned mine sites. Congress estimated in 1977 that repairs could be accomplished in 15 years.

Now, nearly 30 years later, many hundreds of sites remain unreclaimed. Money in the fund has been used for highly questionable projects, and reauthorization of the fund to require continued payment from companies actively mining and making profits is a politically charged battle.

In West Virginia alone, more than \$375 million has been spent out of the fund over the last 20 years to re-grade scarred land, stabilize dangerous slides, fix hazardous mine waste and otherwise clean up abandoned mine sites. But, measured by estimated cleanup costs, the federal government estimates that less than one-quarter of the state’s inventoried abandoned mine problems have been reclaimed.

Since the program began, coal operators have paid more than \$7 billion into the fund. But as the West Virginia Charleston Gazette outlined in a series of articles last year, more than \$1.3 billion of money from the fund has been diverted to low-priority cleanups or other non-essential projects.



Reclamation At Its Finest

This shot from the Hurricane Creek, AL, watershed shows two separate reclamation attempts with a slurry pit in the middle. The upper side of the picture was strip mined and reclaimed by Tuscaloosa Resources within the past 5 years. They were careful to leave a narrow band of trees along highway 216 to block the view of the site from the road.

The lower side of the photo is the Drummond Coal mine and reclamation site from the 1970’s. Drummond received an award for reclamation from the federal government for their excellent work at this site. So what’s the result 30 years after the reclamation effort? A few scrubby pine trees and continued poison runoff.

The pit in the middle was bonded for reclamation by Drummond then sold to Jim Walters Resources who continues to use the pit today. Under Drummond’s 1970’s permit, they were supposed to close and reclaim the pit. This is another case of a so-called minor permit revision allowing coal companies to ignore regulatory requirements and put off cleaning up their mess.

The Warrior Coal Basin

David Whiteside, Interim Executive Director
Black Warrior Riverkeeper

Coal is plentiful in the Black Warrior River watershed, which, combined with Alabama's ranking as dead last in the United States in environmental protection, adds up to tremendous water pollution.

Coal was first discovered here in the 19th century. "Stonecoal" was mined by driving crowbars into river ledges while divers recovered falling minerals from the water. Expert navigators guided riverboats through the narrow passages of the free-flowing Black Warrior to haul the coal to market. The tales of these river captains became local legends.

Today the Black Warrior, straightened and dammed by the Corps of Engineers for easy navigation, is a silent giant in Alabama's economy, serving as a major shipping route for coal, cotton, steel, wood chips and other products, and connecting Birmingham with Mobile Bay and the Gulf of Mexico.

In the 1980s, Alabama coal had a market value of \$22 a ton. Today, the market value is well over \$100 a ton. As a result, Alabama is experiencing a resurgence in coal mining. New mines are being permitted throughout the Black Warrior watershed on almost a monthly basis. But King Coal has already picked clean the richest and most accessible coal seams. Now, to remain profitable, these operations must dig deeper, and flaunt environmental laws and worker safety, to harvest coal that was previously unprofitable to mine. Black Warrior Riverkeeper is reviewing dozens of mining permits, monitoring mines by air and pursuing Clean Water Act violators.

The Drummond Company's Shoal Creek Mine currently crosses underneath the main stem of the river west of Birmingham. Miners there pump 40 million gallons of now toxic water out of the mine each day, sending water loaded with heavy metals and acid cascading down a bluff back into the river.



NELSON BROOKE, BLACK WARRIOR RIVERKEEPER

Birminghamport is a barge loading facility on the banks of the Locust Fork of the Black Warrior River. This port is Birmingham's gateway to Mobile Bay, providing for the transport of coal, asphalt, chemicals, wood chips, and steel. Flight provided by SouthWings www.southwings.org



NELSON BROOKE, BLACK WARRIOR RIVERKEEPER

Tugboat "Alabama" motors its way down the Black Warrior River with six fully loaded barges of coal.

The true cost of coal is measured in human lives



HURRICANE CREEKKEEPER

The JWR #5 mine in Tuscaloosa County, AL.

Eighteen men have been killed in this mine between 2000 and 2004: 13 in one blast in 2001. The large building in the center is the vertical shaft into the mine where the coal comes out and men go in. This mine is the deepest vertical mineshaft in the U.S. The green roofed buildings to the left of the massive coal pile is the church and graveyard where the JWR 13 widows and families waited while the search went on for their men after JWR prevented them from entering the property.

John Wathen
Hurricane Creekkeeper

On September 23, 2001, a blast ripped through Jim Walter Resources (JWR) Blue Creek mine #5 killing 13 of Brookwood's fathers, brothers, and sons. Federal regulators had conducted several inspections and written 31 violations, including 12 for "combustible materials and coal dust" in the months leading up to the blast. JWR had been ordered to correct these problems prior to the time of the blast. Each of these violations was a serious threat to safety. But JWR is used to ignoring safety violations, and minor slaps on the wrist from regulators.



HURRICANE CREEKKEEPER



HURRICANE CREEKKEEPER

The church grounds have to be cleaned constantly to remove coal dust.

This fall, five years after the blast, the courts lowered the fine that Jim Walter Resources must pay to \$3,000 from \$435,000. That comes to \$298.70 per man. Judge Barbour and the federal Mine Safety and Health Administration sent a clear message to Jim Walter Resources that it is okay to kill our neighbors if the profit is right.

Coal is not cheap in Alabama. And it costs a lot more than dollars and cents. It costs lives, habitat and quality of life for everyone, except maybe those who thrive on our loss.

To say that 13 miners are not worth more than pocket change for King Coal is an atrocity.

Environmental Regulation

As they apply to coal, the multitude of environmental laws passed in the 1970's were meant to strike a reasonable balance between producing coal and protecting human health and the environment. These laws were meant to create a safety net of minimum standards below which industry could not go. With these standards fully enforced, the total cost to mining and energy industries for maintaining these standards would be reflected in the market price of energy. The desire for and pursuit of a coal-based energy would then be determined by the true cost of coal and we, as consumers, would pay the cost of acceptable, even sustainable, mining and burning practices.

With the passage of the Clean Water Act, Clean Air Act, Surface Mining Control and Reclamation Act, Resource Conservation and Recovery Act, and other laws in the 1970's, things got better, at least for a while. The blatant abuses of rip-and-run mining eased and the public outcry decreased. Congress and the country were somewhat comforted.

However, as people were lulled into complacency, industry was busy refining its image. High power public relations efforts were changing the startling image of Appalachian coalfields from devastated lands, downtrodden miners and impoverished communities to green rolling reclaimed hills. While the façade got prettier and the words were fine-tuned, industry devised new mining practices and employed new technologies far more destructive than anyone dreamed possible when the legislation of the 1970's were enacted.

At the same time the roots of coal's political influence grew longer and stronger. Coal companies leaped into political campaign financing, and otherwise influenced the tenor, tone and texture of regulations. With control of the political process King Coal orchestrated decreases in funding for enforcement agencies and shifted primacy and power away from the federal government to the coalfield states, where industry has even more direct control and influence.

With its now deep seated political influence, new "improved" technologies and the illusion of "cheap" energy, King Coal went to work on the environmental laws, twisting regulations to their wishes and discouraging enforcement. In one of the more egregious policy-making decisions coming out of the EPA in recent years, the Agency changed the definition of "fill" under the Clean Water Act to allow mining companies to dump tons of mining debris into valley streams without being in violation of the Act. The federal Office of Surface Mining has proposed a change to the Buffer Zone Rule that would legalize the filling of hundreds more miles of valuable headwater streams. And just last year, EPA enacted a rule that allows coal-fired plants to continue to spew tons of mercury into our air and waterways for decades to come.

Mercury Hypocrisy

Last fall, *Waterkeeper* magazine focused on the impacts of mercury emissions from the nation's 1,100 coal-fired power plants, including EPA's estimate that 630,000 children are born each year in the U.S. with unsafe levels of mercury in their blood from their mother's consumption of mercury contaminated fish.

One of the Bush Administration's favorite arguments against effectively controlling power plant mercury emissions is that much of the mercury in our waterways comes from sources outside the U.S. (nearly 1,500 tons of mercury are released globally each year.) EPA claims that U.S. emissions account for only three percent of the manmade sources worldwide, and that Asia emits 860 tons, while North America accounts for only 105 tons per year.

But a closer examination of the issue speaks volumes about how disingenuous this Administration truly is when it comes to stopping mercury pollution. Last February, mercury was on the table for discussion when the United Nations Environment Programme (UNEP) met for its 23rd Governing Council in Nairobi, Kenya. During committee meetings, the European Union called for a legally binding agreement that would force global reductions in mercury emissions. Asian countries were largely on board. But U.S. representatives opposed any mandatory reduction standards, instead calling for a voluntary partnership program – in other words, an unenforceable agreement that would not burden their industry friends back home. So while the EPA is quick to deflect blame to other parts of the world, the U.S. government will not embrace international regulation of mercury emissions.

As a result of U.S. opposition, internationally binding reductions on mercury emissions failed. The U.S. response? If you don't want to fix it, throw money at it and hope it will go away. Instead of endorsing any meaningful mercury reduction agreement, Bush officials pledged \$1 million to the UNEP mercury program. So much for international leadership.



Who's running West Virginia?

February 24, 2005 West Virginia Governor Joe Manchin III (2nd from left) discusses details of his legislative agenda during a briefing with members of the state Legislature in the House Chamber, State Capitol, (that's Bill Raney from the WV Coal Association on the far right.)

Two legislative bodies in Congress, the Senate Committee on Energy and Natural Resources and the House Committee on Resources, have jurisdiction over mining, energy policy, public lands and mineral leasing. But who are these Senators and Congress members really working for?

The League of Conservation Voters publishes a *National Environmental Scorecard*, an impartial evaluation of each Congressional members' commitment to environmental issues such as public health and safety, natural resource conservation and spending on environmental programs. Experienced conservationists from nineteen environmental organizations use key legislation to grade Congress members. Depending on their voting record on these issues, Senators and Representatives receive a grade from o, the worst, to 100, the best.

Waterkeeper has identified the Resource Committee members who have received a zero on the Scorecard in 2003 or 2004. There are others with abysmally low scores – but these are the true zeros. These are King Coal's champions in Congress, letting the people of the coalfields and our nation down.

These are Waterkeeper's BIG FAT ZEROS

HOUSE COMMITTEE ON RESOURCES



Barbara Cubin, Wyoming



Don Young, Alaska



JD Hayworth, Arizona



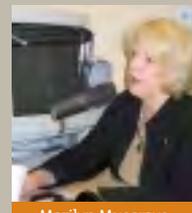
Richard Pombo, California



George Radanovich, California



Tom Tancredo, Colorado



Marilyn Musgrave, Colorado



Elton Gallegly, California



Henry E. Brown, South Carolina



Steve Pearce, New Mexico



Jim Gibbons, Nevada

SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES



Jim Bunning, Kentucky



Pete Domenici, New Mexico



Christopher Cannon, Utah



John J. Duncan, Tennessee



Jim Talent, Missouri



Conrad Burns, Montana



Lamar Alexander, Tennessee



George Allen, Virginia



Craig Thomas, Wyoming



Lisa Murkowski, Alaska



VIVIAN STOCKMAN



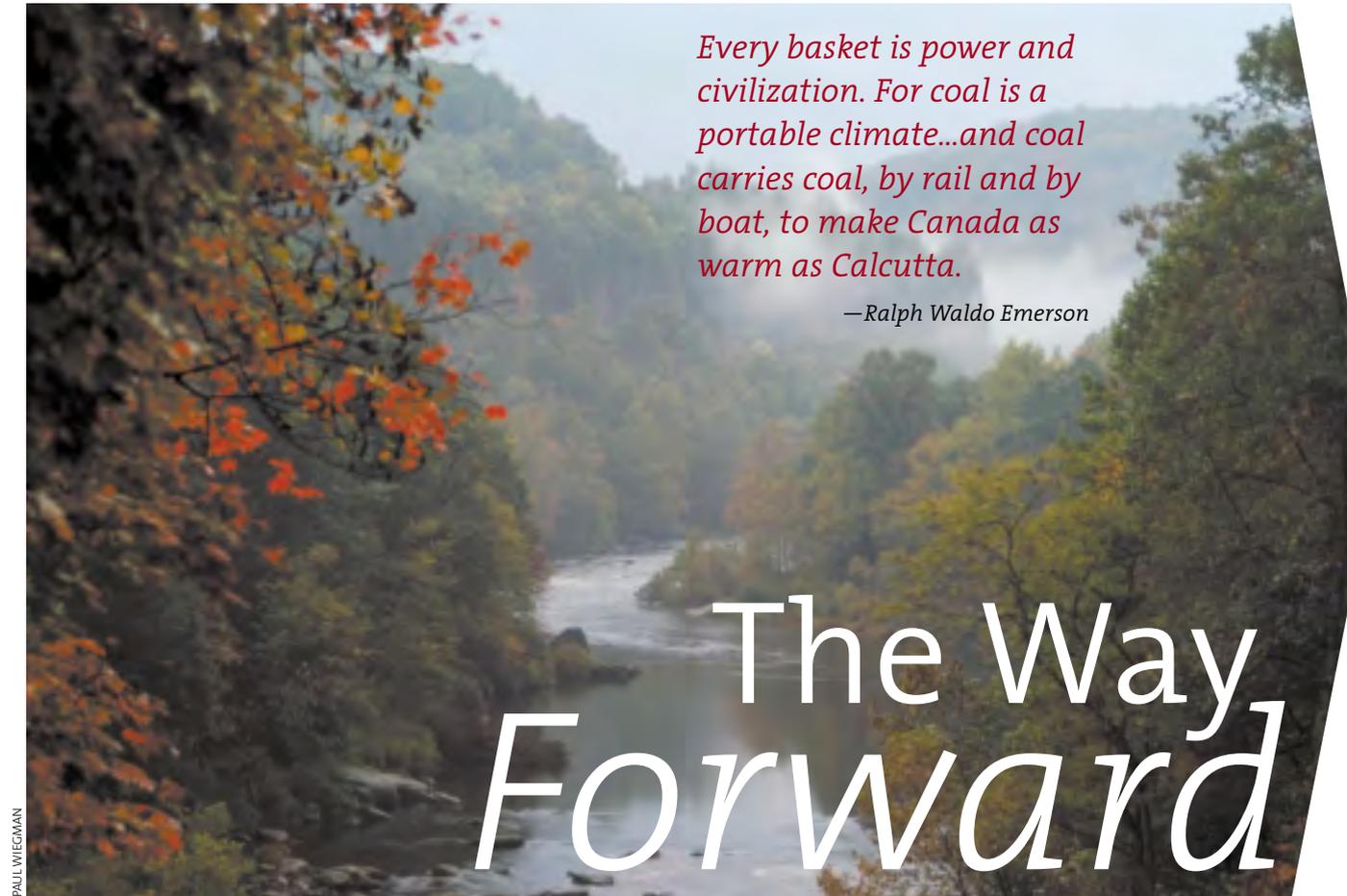
Image Refinery

Though the years the coal industry has worked hard to “clean up” its image. The greening of coal continues to this day with roadside billboards throughout coal country, General Electric’s “eco-imagination” campaign of buff coal miners and dancing rainforest creatures and Massey Coal Company’s “total environment” campaign that asserts that it is King Coal, not loudmouthed environmentalists, who are looking out for the people of Appalachia.

John Amos coal-fired power plant in Nitro, WV.



VIVIAN STOCKMAN



Every basket is power and civilization. For coal is a portable climate...and coal carries coal, by rail and by boat, to make Canada as warm as Calcutta.

—Ralph Waldo Emerson

The Way Forward

Emerson, considered by many people to be the founding father of the conservation movement with his 1836 treatise on nature, wrote these words in praise of coal almost 150 years ago. With the dramatic impact that the burning of coal and other fossil fuels is having on our planet's climate, how ironically prophetic his statements have proven to be.

The gathering and burning of coal as an energy source has been documented as far back as 400 A.D. in Roman-controlled Britain. Now, many centuries later, when the combustion engine has displaced horse-drawn chariots and missiles have supplanted swords, coal still remains a primary source of energy. At what cost do we desperately hold onto this antiquated supply of power? In order to facilitate the continuing use of coal, the Bush Administration has rewritten environmental laws to allow mining companies to dump their wastes into valley streams and other waterways and implemented regulations that allow utility companies to avoid any meaningful reduction of mercury emissions from power plants. Under the guise of free trade, "cheap" Appalachian coal is shipped across the border to use in Ontario power plants whose very emissions blow back across this same border to poison our Northeastern states.

We are long past asking ourselves the pivotal question: is the true cost of coal truly worth its cost?

The answer is painfully obvious.

It is time to replace coal with better, cleaner, more efficient sources of energy. Coal is as obsolete as the antediluvian life forms that make up its substance – it's time to move on. Instead of making excuses for the continued use of coal, this country's leadership must take affirmative steps to phase out our dependency on this destructive energy source.

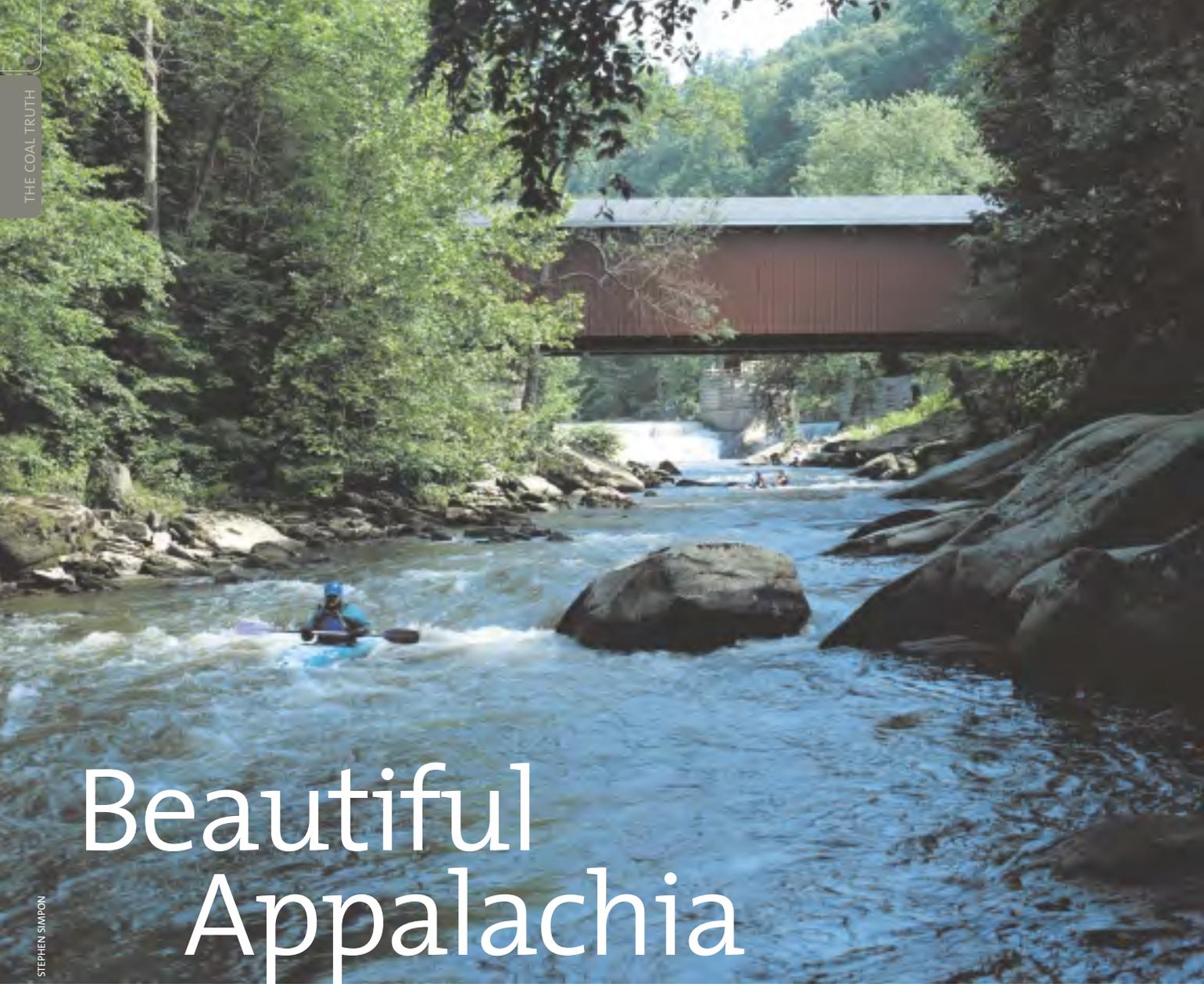
Give all stakeholders a place at the table when formulating energy policies. Our current energy policy came out of Vice-President Dick

Cheney's energy task force — made up entirely of industry representatives who donated millions of dollars to his election campaign. When profit-driven energy interests dictate the energy policies of this nation we've gone way beyond letting the fox guard the henhouse.

Our government needs to **promote energy conservation** instead of subsidizing increased expenditures to further coal use. In 1998 the Environmental Protection Agency noted in a report to Congress that coal-fired power plants account for 48 tons per year of mercury being emitted into our air and waterways. Our government's response? To permit the building of even more coal-fired power plants and gut Clean Air Act requirements that would mandate strict control of mercury emissions from these very facilities. It is time to take conservation seriously.

The fact is, coal could not be mined in the destructive manner that it is and burned with wanton disregard for human and environmental health if we simply **enforce the laws of the United States** as intended. Instead, with the help of a more than willing Bush Administration, the mining industry has turned to undermining the very basic principles of our bedrock environmental statutes like the Clean Air Act and the Clean Water Act. Compliance with these laws and regard for our environment and public health would help insure that the cost of coal is truly reflective of the devastation it's use entails.

Aggressively pursue alternate, renewable and clean sources of energy. The coal industry is determined to keep the country reliant on coal until Appalachia has been leveled, every last coal seam has been mined and every last coal chunk has been burned. Why? So they can squeeze every last drop of profits from an infrastructure that has been paid for by the American people many times over. As long as these same interests script the nation's energy policies, there will never be any real push for alternate sources of energy. **WK**



Beautiful Appalachia

STEPHEN SIMPON



STEPHEN SIMPON



CINDY BLAILEY/GREENSPEAK



CLIFTON MCGILL



PAUL WEIGMAN



BARRY LAVERY



DONALD GIBBON



STEPHEN SIMPSON



VIVIAN STOCKMAN



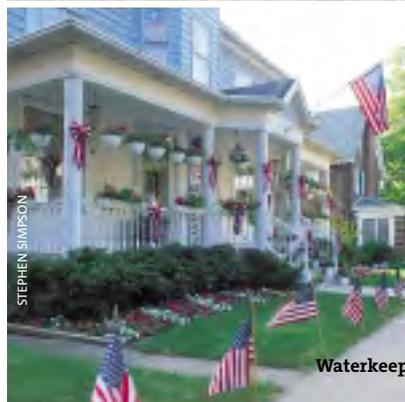
VIVIAN STOCKMAN



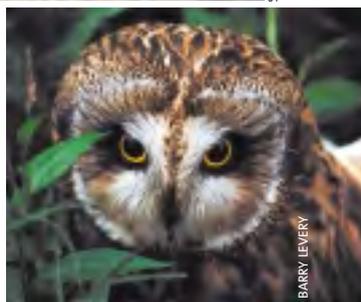
VIVIAN STOCKMAN



STEPHEN SIMPSON



STEPHEN SIMPSON



BARRY LAVERY

BLACK MESA WATERKEEPER

WISDOM OF THE ANCESTORS

A Hopi leader fought a lonely battle to stop a mining company from stealing water that helped build Phoenix. He succeeded.

By John Dougherty

I first met former Hopi tribal chairman Vernon Masayesva in December 1992 when I was publishing a weekly newspaper in Flagstaff, Arizona. Masayesva called one afternoon and said he wanted to tell me a story of great importance to his tribe. A few days later, we met at a restaurant in old downtown Flagstaff.

Over the next few hours, Masayesva spun an amazing tale of the Hopis' battle with the world's largest coal mining company over the tribe's most important natural resource: water.

Hopi fortunes have ebbed and flowed on the arid mesas northeast of Flagstaff for thousands of years. The Hopi society, Masayesva said, is based on its intimate relationship with water. The tribe's songs, dances, art, secret ceremonies, language, economy and religion all revolve around water.

But in modern times, Masayesva explained, water on Hopi land was seriously threatened. And if the water that for ages has flowed from washes, springs and seeps (which nurtures corn, beans, squash and souls) disappears, so, too, would the Hopi.

It was that simple to him.

You may be thinking this is an old story, but it is far from it. It is an ongoing tale that affects Arizona and Phoenix, and there are striking new developments. But first a little

history on the Hopi vs. Peabody Coal Company (now Peabody Energy):

The threat to Hopi water began when Peabody obtained leases to mine coal on Hopi and Navajo land in the 1960s. There were 100 square miles of low-sulfur coal reserves on the reservations, perfect for fueling power plants needed to feed the growth frenzy and economic bonanza sweeping the Southwest.

Coal from Peabody's Black Mesa Mine was sold to the Mohave Generating Station operated by Southern California Edison near what was then the remote outpost of Laughlin, Nevada. Rather than trucking or shipping the coal by rail, Peabody decided to build the world's longest water-slurry pipeline to move five million tons a year of pulverized coal 273 miles from the Black Mesa Mine to the 1,580-megawatt power plant.

Peabody began pumping 4,000 acre-feet [an acre-foot equals 325,851 gallons] of pristine drinking water a year from beneath Black Mesa. The water was mixed with the crushed coal and injected into the slurry pipeline. The water taken from beneath Hopi land was initially sold to Peabody for the astonishingly low price of \$1.67 per acre-foot.

Peabody essentially stole the Hopis' water. And the company did so with the approval of the U.S. Bureau of Indian Affairs.

This theft of the tribe's water, Masayesva said, was just the beginning of a massive rip-off of the Hopis' natural resources.

The heist went unnoticed by the outside world. In fact, the coal and water spirited off the Hopi reservation over the next 40 years helped fuel the spectacular economic growth of Phoenix, Las Vegas and Los Angeles.

The wealth and riches of the cities came at a huge cost to the Hopi. Within two decades, Hopi farmers and spiritual leaders noticed a precipitous decline in the amount of water flowing from Hopi springs, washes and seeps. Peabody denied that its groundwater pumping had any effect on the surface flow, claiming that it was taking water from the deep Navajo Aquifer that was not connected to the surface.

But Masayesva told me that he and other Hopi leaders were convinced there was a connection between groundwater pumping and reduced surface flows. Masayesva said the risk to Hopi culture was too great to ignore.

"I really want us to go back to honor, respect and trust [in] the ancient wisdom, go back to our relationship with water," Masayesva said. "Water is sacred."

Our dinner concluded and we went our separate ways. Masayesva's term as Hopi tribal chairman ended in 1994, but he continued his lonely fight to force Peabody to stop mining groundwater.

In early 1997, Masayesva called me again with startling information that had been recently discovered by a law professor researching the history of the Peabody coal mining operations on Hopi land. By this time I was working at the *Phoenix New Times*.

Professor Charles Wilkinson of the University of Colorado had discovered documents that revealed the Hopi were betrayed by the tribe's most trusted attorney who had negotiated the original Peabody coal and water contracts on the tribe's behalf.

"[John] Boyden violated his high duty to the Hopi by working concurrently for Peabody Coal during the decisive years of the mid-1960s," Wilkinson wrote in a lengthy paper published in the *Brigham Young University Law Review* in 1996.

Boyden was double-dealing. He was working for Peabody at the same time he was representing the Hopi in negotiations to sell coal and water to Peabody. The deal Boyden struck enriched Peabody while forcing the Hopi to be dependent on paltry coal royalties.

Even worse, Boyden's deal was threatening to destroy the Hopis' crucial link to surface water flows.

I soon found myself touring the Hopi mesas with Masayesva and meeting with Hopi spiritual leaders who shared their songs and insight about water.

Masayesva had scraped up funds to help finance independent hydrological research that was providing support to the Hopis' contention that the groundwater pumping was depleting Hopi surface water. The U.S. Geological Survey was also conducting independent studies supporting the Hopis' concerns about groundwater reduction.

I broke the story about Boyden's betrayal of the Hopi in *New Times* ("Dark Days on Black Mesa," April 24, 1997), and soon Peabody was on the defensive. Masayesva founded a nonprofit organization, Black Mesa Trust, and began gathering national and international recognition and financial support.

Meanwhile, a coalition of environmental groups — including the Grand Canyon Trust, the Sierra Club and the National Parks Conservation Association — launched an attack on the recipient of Peabody's coal — the Mohave Generating Station.

The environmental groups sued Mohave Generating Station's owners in 1998 alleging the power plant was in violation of clean-air standards. The power plant's owners were looking at the potential of billions of dollars in fines. (Southern California Edison owns 56 percent of the plant, followed by the Salt River Project, with 20 percent; Nevada Power Company, 14 percent; and the Los Angeles Department of Water and Power, 10 percent.)

Mohave's operators entered into a consent decree in 1999 with the environmental groups agreeing to either sharply reduce emissions at the power plant or shut it down by December 31, 2005. Mohave's owners, led by Southern California Edison, were then faced with a crucial decision:

Were they willing to invest \$1 billion worth of improvements necessary to clean up the power plant's emissions while at the same time continuing to rely on Peabody's controversial coal slurry pipeline that appeared to be depleting springs on the Hopi reservation?

Masayesva saw an opportunity to bring tremendous pressure on the utilities, as well as on Peabody. He enlisted the help of the Natural Resources Defense Council, Robert F. Kennedy Jr. and Waterkeeper Alliance.

The pressure on Peabody to find another way to transport the coal to Mohave became so great that the company finally announced it would find another water source for the pipeline by the end of this year.

"Because of the international uproar over what they were doing, Peabody was losing a big public relations war," Masayesva told me the other day. "They agreed voluntarily that they would cease using the Navajo Aquifer."

So far, Peabody has been unable to find an alternative water source for its pipeline. But it increasingly appears that it doesn't matter because it is virtually certain that Mohave will shut down this December 31 rather than install anti-pollution controls.

The imminent closure of the power plant also means Peabody will close the Black Mesa Mine. Hundreds of jobs will be lost not only at the power plant but at the mine.

The Hopi Tribe is expected to lose about \$7 million a year in royalties — which accounts for about one-third of the tribe's annual operating budget. The news of the closure of the mine and power plant is being portrayed as a devastating financial blow to northern Arizona and, particularly, to the Hopi. The *Arizona Republic* ran an October 30 story with the ominous headline: "Power plant shutdown bringing gloom to N. Arizona."



Vernon Masayesva is the Black Mesa Waterkeeper and Executive Director of Black Mesa Trust

Masayesva says there is no need for panic. Far from it.

"The Hopi Tribe has \$100 million in liquid assets," he says.

The assets, Masayesva says, come from a land-dispute settlement the Hopi reached with the federal government in the mid-1990s that allows some Navajo to remain on Hopi land. The Hopi have invested the money in real estate and businesses.

"There is no need for the Hopi Tribe to be saying they are going to suffer grievously economically," Masayesva says.

The Hopi and Navajo also have an opportunity to obtain significant financial relief from Mohave's closure. Under complex air-pollution-control rules, Mohave's owners will reap a huge windfall after they close the plant through the annual sale of tens of millions of dollars' worth of sulfur-dioxide-emission credits.

Environmentalists want regulators to force the utilities to provide the money derived from the sale of pollution tax cred-

its to the tribes and others who will need financial assistance.

"The owners [of Mohave] should provide economic transition funds to the tribes, and have the money to do so," the environmental groups said in a May 25 letter to the Hopi Tribe.

Masayesva argues that the federal and state governments should also contribute funds to the Hopi and Navajo tribes to soften the financial blow from the closure of the mine. Arizona, which has a huge budget surplus, has benefited immensely from the mine and power plant. The state has received more than \$20 million a year in taxes generated by the mine, and the state's entire economy has benefited from low-cost power generated for decades at the Mohave Generating Station.

In addition, the federal government has a responsibility to compensate the Hopi for failing in its trust responsibility to protect the tribe's resources by approving the unfavorable water and coal contracts negotiated by Boyden.

Masayesva maintains that closing the power plant also opens the door to a tremendous opportunity for the Hopi to transform its reservation into an economic powerhouse based on renewable energy. He's already helped establish the Colorado Plateau Clean Energy Initiative that is seeking to develop clean energy sources, including wind farms, solar and coal gasification.

The Black Mesa Trust is working with Phoenix-based Stirling Energy Systems to design and build two 500-megawatt solar-electric-generating stations on the Hopi and Navajo reservations.

Earlier this year, Stirling signed contracts to build two separate solar-generating stations of similar size with Southern California Edison and San Diego Gas & Electric Company. The Hopi/Navajo plants would cost about \$1.6 billion, take two to four years to build and employ between 500 and 1,000 workers during construction.

While dark days still loom in the immediate future on Black Mesa with the imminent closure of the mine, it appears that the future for the Hopi is exceedingly bright, thanks to the vision of Vernon Masayesva.

"I have done my best," he told me. "I have accomplished what I set out to accomplish, which was to stop [groundwater] pumping."

In the early years of this epic struggle, Masayesva walked alone. One man versus the world's largest coal company. Now, miraculously, victory is at hand.

"There are lessons to be learned that I would like to share with the outside world," Masayesva said. "Never doubt the power and wisdom of our ancestors. That is how we made the difference with Peabody." **WK**

CLOSING ONTARIO'S COAL PLANTS

Political Success, Environmental Failure

Mark Matteson and Krystyn Tully,
Lake Ontario Waterkeeper

Political Success

Two years ago, the Ontario Liberal party ousted the ruling Conservatives by promising a better, healthier future for the province. One of the chief planks in their campaign platform was a pledge to close Ontario's coal-fired power plants by the year 2007.

By all accounts, closing Ontario's coal plants is a political success.

Taking on King Coal and a powerful workers union makes the Liberals look tough, committed to protecting human health and the environment despite pressures from the business sector.

Attacking coal's dirty, polluting character fosters the image of a government dedicated to protecting our communities. The harshest criti-

cism opposition parties can muster is that the government is failing to close the plants fast enough, in light of studies showing that coal plant pollution kills as many as 668 Ontarians and dumps some 500 kilograms (1,100 pounds) of mercury into our environment every year.

But it is all optics. By any grassroots account, the Ontario government's approach to closing our coal plants has been an environmental failure.

Environmental failure

Ontario's communities still suffer from coal pollution, because the phase-out is limited to five provincially-run power plants. A whop-

The sign on the smokestack of a former coal-fired power plant in Toronto, creatively altered by its new tenants.



ping 80% of mercury emissions (the number one reason for contaminated fish in Ontario) spew from facilities other than power plants: namely, garbage and sewage incinerators, steel factories and cement kilns. The province has shown little courage in taking on these other industrial polluters.

Phasing out coal-fired power plants in Ontario does not mean an end to coal-fired power, either. The government has no comprehensive energy plan, no program that will find alternative sources of clean power or promote meaningful conservation. As a result, the province is simply buying energy from coal-fired power plants in Michigan, Ohio and New York.

These American plants are already responsible for more than half of the air pollution in Ontario. As demand for the dirty power from down south increases, so will bad air up north.

The government's reactionary approach to energy planning also fostered feelings of fear and desperation. In this climate, coal's nasty reputation and the lack of existing energy sources are used to shore up weak arguments for other forms of dirty power.

Instead of asking, "How best can we power this province?" news editors and industry analysts limit themselves to, "Which do we like better, coal or nukes?" Because the Ontario government did such a good job describing the horrors of coal, the response is predictable.

"Ontario needs more nuclear power plants," wrote the *Globe and Mail*. The *Toronto Star* was even more blunt: "Ontario is running short on time. We shouldn't waste time debating the inevitable, controversial though nuclear power is. Rather, we should be discussing where new plants should be located."

In a classic case of not seeing the forest for the trees, the government now proposes rebuilding nuclear reactors on the Great Lakes to replace the void left by coal. In doing so, our political leaders ignore overwhelming evidence that nuclear plants also taint fish, destroy fish and wildlife habitat, contaminate our food supplies, and threaten the drinking water supply of nearly 10-million people.

Protecting the environment and human health has fallen by the wayside.

Chaos Ensues

Special interests thrive in this kind of chaos. Since 2003, nearly 300 new energy-related registrations have appeared on the Ontario lobbyist registry. The vast majority of these registrations describe lobbyists paid to push a particular energy source (like nuclear power) behind closed doors. Not one is hired to promote the need for public involvement, increased transparency or thorough environmental assessments.

These lobbyists lapped up the government's narrow attack on coal and used it to support their own agendas. Nuclear power is called "the clean air energy" now – as if mercury, nitrous oxide and sulphur dioxide from coal plants were the only threats to our environment. Likewise, the obvious impacts of coal plants (like smog) are exploited to gloss over less visible impacts of nuclear pollution (like cancer).

Meanwhile, communities are left scrambling to protect themselves. Residents of Toronto breathe a little easier because the Lakeview coal plant closed down, but people on Lake Huron continue to suffer because the nuclear power plant there is being fixed up to last another generation. In the province's eastern region, citizens brace for an influx of tire incinerators, presumably grateful because it is "anything but coal."

Lessons Learned

What started out as a noble effort – protecting citizens from air pollution – has turned into a free-for-all for energy lobbyists and industry heavyweights. Instead of rallying together, Ontarians are divided in the fight for limited access to environmental protection.

We desperately need to redefine the debate over energy production in Ontario, and across North America. We need energy programs that stop describing what we are *against* (coal, nuclear, hydro) and start prescribing what we are *for* (clean air, pure water, healthy communities).

Only then will we have what we've all been working for: real success. **WVK**

WATERKEEPER PROGRAMS

United States

Columbia Riverkeeper, Bingen, WA
 Commencement Baykeeper, Tacoma, WA
 North Sound Baykeeper, Bellingham, WA
 Puget Soundkeeper, Seattle, WA

Tualatin Riverkeepers, Sherwood, OR
 Willamette Riverkeeper, Portland, OR

Baja California Coastkeeper, Imperial Beach, CA
 Baykeeper, San Francisco, CA
 California Coastkeeper Alliance, Fremont, CA
 Humboldt Baykeeper, Old Eureka, CA
 Inland Empire Waterkeeper, Newport Beach, CA
 Klamath Riverkeeper, Orleans, CA
 Orange County Coastkeeper, Newport Beach, CA
 Petaluma Riverkeeper, Petaluma, CA
 Russian Riverkeeper, Healdsburg, CA
 Sacramento-San Joaquin Deltakeeper, Stockton, CA
 San Diego Coastkeeper, San Diego, CA
 San Francisco Baykeeper, San Francisco, CA
 San Luis Obispo Coastkeeper, San Luis Obispo, CA
 Santa Barbara Channelkeeper, Santa Barbara, CA
 Santa Monica Baykeeper, Marina del Rey, CA
 Ventura Coastkeeper, Oxnard, CA

Colorado Riverkeeper, Moab, UT
 Great Salt Lakekeeper, Salt Lake City, UT

Alamosa Riverkeeper, Capulin, CO
 Animas Riverkeeper, Durango, CO

Black Mesa Waterkeeper, Flagstaff, AZ

Grand Riverkeeper, Vinita, OK

Kansas Riverkeeper, Lawrence, KS

Cook Inletkeeper, Homer, AK
 Prince William Soundkeeper, Valdez, AK

Dr. Martin Luther King would often say that it was the deafening silence of good people that allowed segregation to last so long in America. The silence surrounding the environmental crisis in America is finally breaking and it is the tireless work of the Waterkeepers around the world that is giving Mother Nature her voice back.

WILLIAM B. WACHTEL

One by one, then collectively, we can and will make a difference – thank you to all the Waterkeepers.

SEEMA BOESKY

Waterkeeper Alliance's Trustees are dedicated advocates, committed to strengthening the grassroots efforts of our 157 programs, and reach of the Alliance worldwide.

WATERKEEPER TRUSTEES

It is a grassroots organization with motivated individuals from all walks of life. There is no political agenda; it's all about the environment.

JAMI & KLAUS HEIDEGGER



WATERKEEPER PROGRAMS

Around the Globe

Waterkeepers are unique and effective because they focus on finding the cause of pollution and eliminating it.

JOHN PAUL DEJORIA

Bow Riverkeeper, Banff, AB, Canada
 Canadian Detroit Riverkeeper, Windsor, ON, Canada
 Fraser Riverkeeper, Vancouver, BC, Canada
 Fundy Baykeeper, Waweig, NB, Canada
 Georgian Baykeeper, Parry Sound, ON, Canada
 Grand Riverkeeper, Happy Valley-Goose Bay, NFL, Canada
 Lake Ontario Waterkeeper, Toronto, ON, Canada
 Ottawa Riverkeeper, Ottawa, ON, Canada
 Petitcodiac Riverkeeper, Moncton, NB, Canada
 Thunder Baykeeper, Thunder Bay, ON, Canada

Magdalena Baykeeper, Puerto San Carlos, BCS, Mexico
 Punta Abrejos Coastkeeper, Punta Abrejos, BCS, Mexico
 Rio Hondo Riverkeeper, Chetumal, Quintana Roo, Mexico

Puerto Rico Coastkeeper, San Juan, Puerto Rico
 Vieques Waterkeeper, Ocean Park, Puerto Rico

Cartagena Baykeeper, Barrio Juan XXIII, Monter'a, Colombia
 Colombian Amazonia Waterkeeper, Bogota, Colombia

Choqueyapu Riverkeeper, La Paz, Bolivia

I got involved with the Waterkeeper Alliance because I believe in the movement, its uncompromising leadership and its ability to bring about positive environmental change. Waterkeepers total focus on water and its global approach are achieving exciting and dramatic results now.

GLENN RINK

The Moore Charitable Foundation provided seed funding for the formation of the Waterkeeper Alliance. We have also been committed to the fight to save North Carolina from industrial hog farms. Waterkeeper Alliance has been a key player in that fight with Rick Dove, Robert F. Kennedy, Jr. and many other committed staff making a difference.

ANN COLLEY

It is Waterkeeper's combination of local leaders and action with national expertise and respect that makes the organization unique and powerful.

TOM GEGAX

By empowering communities to protect natural resources at the local level, Waterkeeper Alliance is one of the most effective environmental organizations today. Our Adopt-A-Waterway program is committed to the same mission: clean water and strong communities. I am proud to be affiliated with this leading organization that shares these important goals.

PAUL POLIZZOTTO

Even as a kid in Minnesota taking most everything for granted, I never took the environment for granted – my parents helped me understand and appreciate the beauty of loons, sunsets and banks of mosquitoes. It is easy to open my arms, heart and pocketbook to this organization, and it is a great honor to serve as a trustee.

RICHARD DEAN ANDERSON



London Canalkeeper, London, England
Thames Riverkeeper, London, England

Morava Riverkeeper, Brno, Czech Republic

Lower Yamuna Riverkeeper, India
Lower Betwa Riverkeeper, India
Lower Ganga Riverkeeper, India
Lower Ken Riverkeeper, India
Mid-Downstream Yamuna Riverkeeper, India
Mid-Lower Ganga Riverkeeper, India
Mid-Upper Ganga Riverkeeper, India
Mid-Upstream Yamuna Riverkeeper, India
Upper Betwa Riverkeeper, India
Upper Ganga Riverkeeper, India
Upper Ken Riverkeeper, India
Upper Yamuna Riverkeeper, India

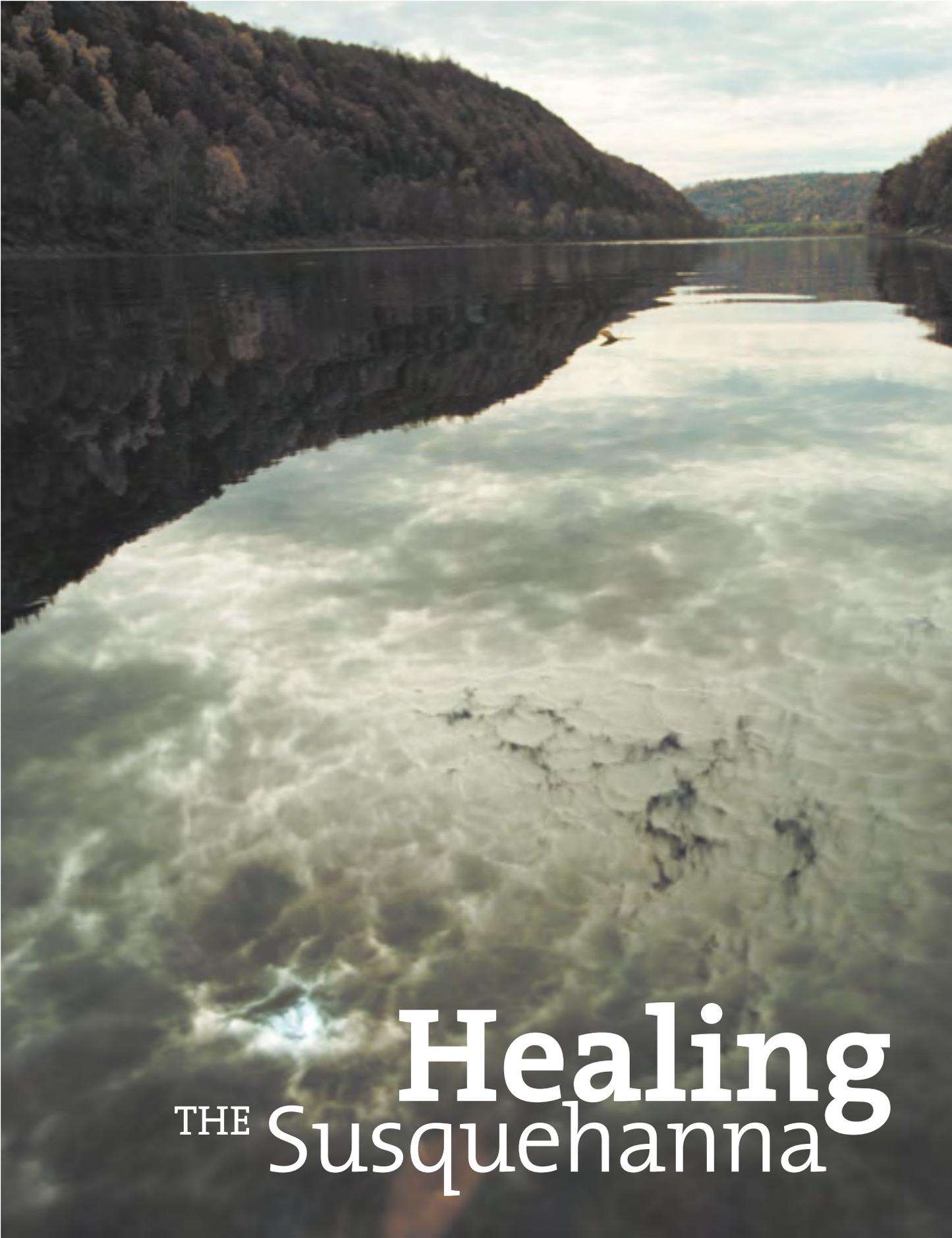
The quality of our water is the greatest contributor to the quality of our foods, the health of our environment, and at around 83% of our bodies, the very essence of our physical lives. No government, no industry, no society or individual has the right to own, limit, taint or destroy that which is basic to our very existence. It is humankind's common wealth. It is ours to protect, defend and restore and cherish.

KAREN LEHNER

Acheron Riverkeeper, Alexandra, VIC, Australia
Avon Riverkeeper, Sale, VIC, Australia
Barwon Riverkeeper, Geelong, VIC, Australia
Derwent Riverkeeper, Bagdad, TAS, Australia
Georges Riverkeeper, Raby, NSW, Australia
Lang Lang Riverkeeper, Yannathan, VIC, Australia
Mimosa Rocks Coastkeeper, Tanja Lagoon, NSW, Australia
Moreton Baykeeper, Brisbane, QSD, Australia
Safety Beach Coastkeeper, Raby, Australia
Snowy River Estuarykeeper, Marlo, VIC, Australia
South Beach Wetlandskeeper, Port Fairy, VIC, Australia
Upper Lang Lang Creekkeeper, Poowong East, VIC, Australia
Waterkeepers Australia, Carlton, VIC, Australia
Werribee Riverkeeper, Melbourne, VIC, Australia
Yarra Riverkeeper, Fairfield, VIC, Australia
Yarriambiack Creekkeeper, Warracknabeal, VIC, Australia

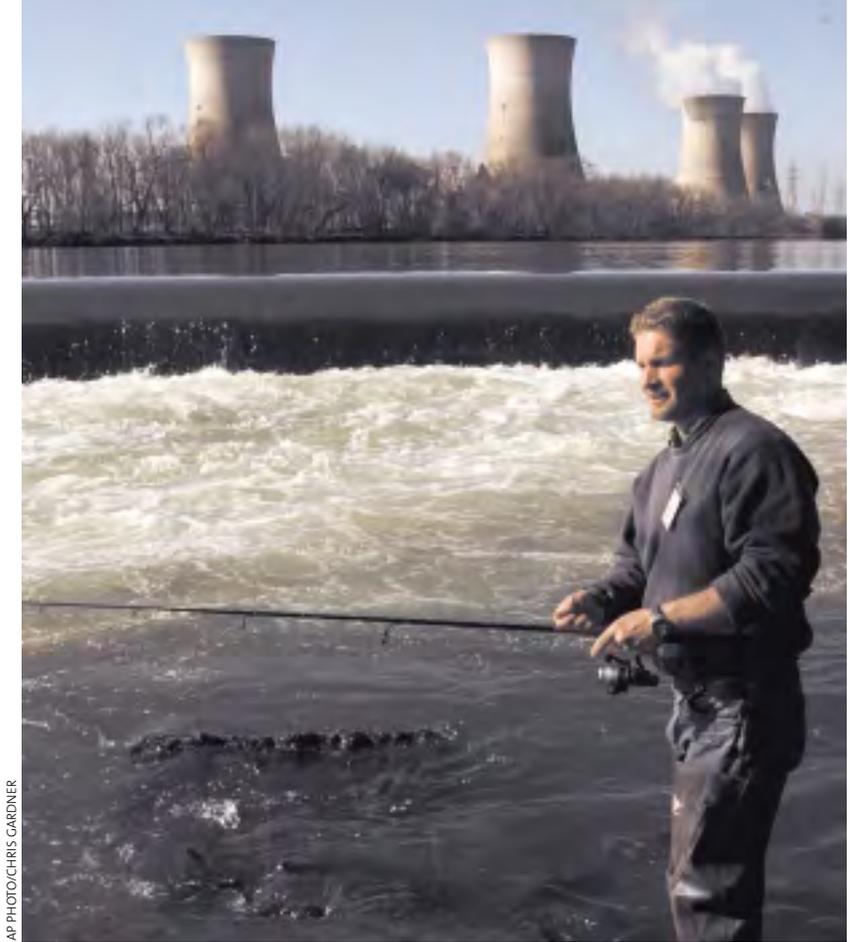
Waterkeeper's work shows how a person can change the world for the better. You first have to identify the issue, recognize the challenge ahead, take initiative, be active not passive and believe in human potential and positive energy to make change happen.

MICHAEL BUDMAN



THE Healing Susquehanna

LORI STAHL (WWW.STAHLGALLERY.COM)



AP PHOTO/CHRIS GARDNER

An angler fishes along the banks of the Susquehanna River near the Three Mile Island nuclear power plant.

On March 28, 1979 just ten miles east of Harrisburg, Pennsylvania, on the banks of the Susquehanna River, the United States suffered its worst nuclear meltdown in history. A malfunction in the cooling system at the Three Mile Island nuclear power plant allowed the plant's uranium core to overheat, causing a partial meltdown.

With it, the disaster carried in a whirlwind of worries and speculation. The Susquehanna will be a full-flowing mess of radioactivity, people thought. The banks will be buried under radioactive deposits. The fish and wildlife will all perish. The people of Pennsylvania will be exposed to lethal levels of radiation for generations to come.

Fortunately, the disaster was far less severe than first feared. But the threat of a nuclear meltdown had spurred – for a short time anyway – national concern about the Susquehanna River and communities living on its shores.

While the Susquehanna survived the disaster at Three Mile Island, this year American Rivers declared the Susquehanna the most endangered river in the country. Outdated sewage facilities, nutrient runoff and acid mine drainage are choking the river and poisoning its communities. Ironically, the same water, riverbanks, and aquatic life that survived the country's worst nuclear catastrophe are now threatened through slower, everyday-type abuses and neglect.

But two Waterkeepers – Paul Otruba, on the Upper Susquehanna, and Michael Helfrich, on the Lower reaches of the river – are working to change the situation and bring the river back to health.

By Bandana Malik

Raw Sewage

Sewage is always a messy situation, but in the Susquehanna it is putting people's health on the line. Because many sewage treatment facilities along the river were built as early as a century ago, outdated municipal waste facilities release millions of gallons of poorly treated and untreated sewage directly into the Susquehanna. This

sewage carries a potent mix of infectious diseases (like hepatitis and dysentery) and pathogens (E. coli and salmonella) into the same river that communities swim in, fish in, boat in and drink from.

In October, Michael Helfrich met with a mother whose son developed a serious infection merely from swimming in Pequea Creek, a tributary of the Susquehanna River. Such stories are not uncommon, especially since hazardous materials like industrial chemicals, hygiene products, medical waste, and stormwater are also included in the mélange.

Not only is public health jeopardized by the excess sewage, but the local economy suffers too. According to Michael Helfrich, the sewage problem has caused severe shortages of fish in recent years. "Such low numbers of fish are being caught in the Susquehanna and the Juniata watersheds that the recreational fishing economy is at an all time low," he says. If nothing is done to prevent sewage from taking over the river, the fish population will continue to plummet and the local economy will feel the pinch.

According to Helfrich, the excess sewage in the Susquehanna will not be remedied until new infrastructure is put in place. To do this, municipalities must survey homes and business to identify where sewage lines are running.

If sewage is being sent into a leaky century-old pipe, it needs to be redirected into new pipe to ensure that it is thoroughly treated.

For Helfrich, talking to municipalities and encouraging them to survey homes and business and replace outdated sewage systems with new, functioning ones, is the first step. The last resort, according to Helfrich, is to confront authorities that are not coming into compliance. In recently years, Waterkeepers in Los Angeles, Atlanta and Milwaukee have filed lawsuits because city governments were reluctant to implement new technologies to keep raw sewage out of their waterways. Helfrich notes that working with municipalities instead of against them is always the number one choice, but if authorities are resistant to installing new infrastructure, such an approach would have to be applied in the Susquehanna.

Nutrient Runoff

Another major threat to the Susquehanna watershed is fertilizer and nutrient runoff from factory farms, cities, suburban homes and golf courses. When microorganisms come into contact with the nitrogen flowing off these surfaces, they convert it to highly-soluble nitrate. Rainwater then soaks up the nitrate and carries it into the Susquehanna, causing algal blooms. In turn, excess algae lower the oxygen levels of the Susquehanna River, destroying its capacity to support aquatic life.

While nutrient runoff is undermining the water quality in the Susquehanna, the most deleterious effects of this runoff are seen beyond the river's end. With 51 percent of the freshwater of the Chesapeake Bay coming from the Susquehanna, the nutrient load in the river is killing the bay. In recent years, a dead zone has appeared across 41 percent of the Chesapeake. "We're seeing the effects of this in commercial and recreational fishing, swimming, and our enjoyment of the bay," says Erin Fitzsimmons, the Chesapeake Bay Coordinator for Waterkeeper Alliance. "Almost half the bay can't support its fish, oysters, crabs and grasses." Unless action is taken to decrease the nitrogen in the Susquehanna, the Chesapeake Bay – which was a treasure trove of life when Captain John Smith first sailed through it four hundred years ago – will have an ever-widening dead zone.

Lower Susquehanna Riverkeeper Michael Helfrich warns that because the nutrient situation is so complicated, with runoff streaming from so many sources, the solution will be just as complex and will require a multifaceted approach. For the nutrient runoff from suburban lawns, education programs would be effective in encouraging people to apply fertilizer during appropriate times. (Contrary to popular belief, applying fertilizer during rainfall doesn't mean your grass will grow better—it just ends up in the river.) Similarly, for nutrients coming from farm fields, using "cover crops" would reduce nitrogen and phosphorus runoff almost three-fold. Another approach might be to lobby local governments to install denitrification and dephosphorization technology, where microorganisms would feed on the nutrients filtering into the river. In almost all cases, the source for these nutrients will have to be addressed before we start to see results in the Susquehanna and the Chesapeake.

Acid Mine Drainage

One of the darkest dilemmas the Susquehanna faces today is acid mine drainage. From the 1800s through the mid-1900s, Pennsylvania's coal seams, located mostly in the northern reaches of the Susquehanna watershed, fueled our industrial economy. While many of these mines are now deserted, the tunnels dug by miners still remain. When rainwater runs through these abandoned mines, sulfuric acid and iron dissolve into the



The Susquehanna River is the largest river east of the Mississippi and the largest watershed emptying out into the Atlantic Ocean. From its start in Cooperstown, New York, the 444 mile-long river weaves through Pennsylvania and Maryland until it tumbles out into the Chesapeake Bay – a watershed covering 27,500 square miles with 4.5 million people.

Paul Otruba,
Upper
Susquehanna
Riverkeeper

DON WILLIAMS



runoff, eventually draining into the Susquehanna. Acid mine drainage has increased the acidity of the river, lowered oxygen levels, suffocated aquatic life and turned entire streams in the Upper Susquehanna orange with iron.

Helfrich notes, "Although the sources of acid mine drainage are mostly scattered through the northern portions of the Susquehanna, it accounts for 45 percent of the impairments to the Lower Susquehanna." In the northern portions of the river this pollution is visible to the naked eye, but in the Lower Susquehanna, the increased acidity is still quite damaging.

The problems with acid mine drainage today are rooted in early industry's influence on government. Paul Otruba, the Upper Susquehanna Riverkeeper affirms, "The mines were never properly reclaimed, even though they should have been by law." Because coal mining had been a major economic force in the region in the 19th and early 20th century, industry was able to walk away from the open, dismembered mines without penalty. And since most of the companies that mined these lands are no longer around today, it's difficult to hold anyone accountable for the damage. Grassroots organizations and the government must step in.

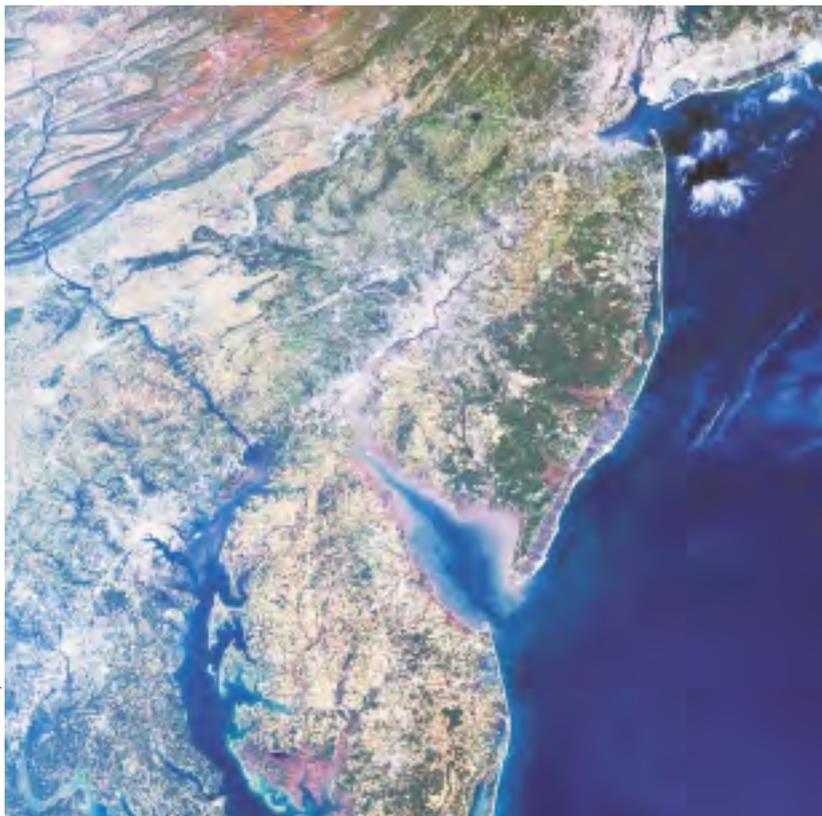
Paul Otruba recommends that these organizations and the state invest in total reclamation of these sites. "We can no longer just put in temporary, tenuous treatment systems. We need to treat these areas as Superfund toxic sites and clean them up using sound scientific methods," he says.

Otruba sees three essential ways to accomplish this. First, he believes that public education is necessary so people understand the problems with coal mining and industrial waste. Secondly, local communities and grassroots organizations need to work together to demand total reclamation of these sites from government authorities. And finally, people who understand the science behind acid mine drainage engaged in the decision-making process on their behalf. Paul Otruba says, "In two counties and forty municipalities in Pennsylvania, a system called *home rule* allows people, rather than representatives, to vote on such issues and affect the policies that are implemented." All of these efforts, according to Otruba, will prevent the acid mine drainage situation from reaching irreversible levels.

The Upper & Lower Susquehanna Riverkeepers

While both the Upper and Lower Susquehanna Riverkeepers are relatively new on the job, they are intent on finding solutions to these problems.

Otruba is developing a mobile laboratory to do onsite environmental testing and analysis. The laboratory will also be an educational classroom and will have the tools to film documentaries on environmental issues related to the Susquehanna. He believes the most far-reaching approach is to develop environmental solutions by



The large cities of the eastern United States are clearly visible from upper right to lower left in this NASA satellite image. A portion of Pennsylvania's Appalachian Mountains are captured in the upper left corner. The southeast-flowing Susquehanna River cuts transversely across these folded formations toward the Chesapeake Bay, where it provides 50 percent of all the freshwater entering the great estuary.

pulling together think tanks and research and development groups. Next summer Otruba is interested in training the first environmental emergency response team.

While Michael Helfrich just joined the Waterkeeper Alliance early this fall, he is a busy man. Each day, he is planning how he will tackle some of the worst problems of the Susquehanna, attending educational seminars, meeting with families and patrolling his waterway. In the next year, Michael Helfrich will make efforts to lower the water temperature in the river so it isn't a breeding ground for disease and to reduce nutrient loads by working with public officials in agricultural and suburban areas to ease pollution.

For Paul Otruba and Michael Helfrich, the dangers facing the Susquehanna today are quite real and require the same kind of immediate response as Three Mile Island. To them, having been declared the most endangered river in America is a loud enough alarm bell.

"For our children's children, the responsibility for healing the land and the water is ours. We need serious volunteers and financial sponsors for this journey of healing the Susquehanna. The journey is the way of the water," says Otruba. **WVK**



Where it isn't polluted, the Susquehanna is a very robust ecological system. Osprey, bald eagles, hawks, bear, deer, raccoons, skunks, porcupines, elk, and fox carouse the riverfront, while native brook trout, small mouth bass, and dozens of other species of fish glide through the water.